Medical pluralism in central Mexico in the early colonial period

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MEDICAL PLURALISM IN CENTRAL MEXICO IN THE EARLY COLONIAL PERIOD

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ABSTRACT

This thesis evaluates medical pluralism in central Mexico during the early colonial period, surveying the medical landscape to recognise spaces for and evidence of, medical assimilation and exchange between Spanish, Indian and Black populations. Recognising that medicine during this period was a combination of science, religion and superstition, it explores the dynamic between licensed and unlicensed medicine, evaluating the ways in which they served and were served by mixed colonial populations. The domain of the *curandero* is re-evaluated in order to better understand what the role and status of such practitioners were, and what the term actually meant to colonial people. Surveying colonial medicine within the context of the attempted imposition of medical structures from mainland Spain, this study demonstrates the ways in which – despite the disenfranchisement of large sectors of colonial society – the huge diversity of personal and cultural preferences coupled with the profound significance attached to healthcare, saw all people, slaves included, able to exert agency in their own healthcare. In short this is an interpretive historical study of medicine in Mexico, combining archival evidence with a wide variety of primary and secondary sources, applied to understand the medical meeting of all colonial peoples, including Blacks, during the early colonial period, which has, to date, been underesearched.

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Chapter 1

INTRODUCTION

In 1570, as stories and samples of the "rare and singular vertues of diverse and sundrie hearbes, trees, oyles, plantes and stones, with their applications, as well for phisicke as chirurgerie,"[1] flooded back to Spain from the New World a doctor, Francisco Hernández, was appointed '*protomédico* general of all the Indies'[2] and sent to New Spain – under direct orders of King Philip II – to regulate medical practice in the colony according to mainland norms and to prepare a natural history of that land. Hernández's *protomédico* duties fell largely by the wayside, however, given disorganisation and political complications in the colony and instead he concentrated all of his efforts on the production of the natural history.

Between 1571 and 1577 Hernández completed the *Antigüedades de Nueva España* – an encyclopaedic work comprising descriptions and naturalistic drawings of over 1,500 herbs and plants.[3] Alongside the drawings and

[1] Nicolás Monardes, *Joyfull newes out of the newe founde worlde: written in Spanish by Nicholas Monardes physician of Seville and englished by John Frampton, Merchant anno 1577* (1925: Reprint, New York: AMS Press, 1967), part 1, 8. For more information on Monardes see Chapter 2.

[2] *Protomédico* was the title given to members of the royal *protomedicato* - a board of licensed practitioners charged with regulating medical practice in Spain and the Spanish Empire; see John Tate Lanning, *The royal protomedicato: the regulation of the medical profession in the Spanish empire*, ed. John Jay Tepaske (Durham: Duke University Press, 1985). The protomedicato and Spanish regulation of medicine will be discussed in greater detail in Chapter 2.

[3] The original was destroyed in a fire at the royal library of Escorial in 1671 but two versions of it were published prior to its destruction: an edited, unillustrated version by Fray Francisco Ximénez in Mexico in 1615 as *Quatro libros de la naturaleza y virtudes medicinales de las plantas y animales de la Nueva España;* and in its complete and illustrated form in 1651 as *Rerum medicarum novae hispaniae thesaurus, seu plantarum, mineralum Mexicanerum historia* by Dr Nardo Antonio Recchi in Italy. For more information on the life and works of Dr Hernández see Simon Varey, Rafael Chabrán and Dora Weiner, eds. *Searching for the secrets of nature: the life and works of Dr. Francisco Hernández* (Stanford, California: Stanford University Press, 2000); and Simon Varey, ed., *The Mexican treasury: the writings of Dr. Francisco Hernández,* trans. Rafael Chabrán, Cynthia Chamberlin and Simon Varey (Stanford, California: Stanford University, 2000). For information on the complications that hindered Hernández's *protomédico* mission in New Spain see Lanning, *Royal protomedicato*, 58-60.

descriptions so painstakingly compiled over seven years, Hernández criticised indigenous doctors' lack of specialisation and their ignorance of Hippocrates' and Galen's doctrines.[4] Hernández was not alone. Criticisms of indigenous doctors gathered momentum throughout the first century of colony, culminating in Hernando Ruiz de Alarcón's forceful and derogatory assertion in his 1629 *Treatise on Superstitions* that "the Indians are totally ignorant of the science of medicine…Whether it belongs to surgery or to medicine they include everything in almost one mode of superstition."[5]

While on the surface unequivocally negative about Indian and Black medicine in the New World, the words and deeds of these men, straddling the early colonial period, inadvertently serve to reveal important ambiguities, incongruities and facts regarding medicine and attitudes to medicine in the new colony. If Hernández's mission, by virtue of its royal commission, is understood as encapsulating the desires of the Spanish state, it is interesting to consider its dual aim: to investigate aspects of indigenous medicine, namely herbalism, and regulate and eradicate others. Furthermore, the fact that it is clear from Ruiz de Alarcón's work that undesirable elements of indigenous medicine remained present for study and criticism, a century after the conquest, raises the question of the degree to which

[4] Varey, *Mexican treasury*, 77-78; and Carlos Viesca Treviño, "*Curanderismo* in Mexico and Guatemala: its historical evolution from the sixteenth to the nineteenth century," in *Mesoamerican healers*, eds. Brad Huber and Alan Sandstrom (Austin, Texas: University of Texas, 2001), 54.
[5] Michael D. Coe and Gordon Whittaker, *Aztec sorcerers in seventeenth century Mexico: the treatise on superstitions by Hernando Ruiz de Alarcón* (Albany, New York: Institute for Mesoamerican Studies, State University of New York, 1982), 231. Hernando Ruiz de Alarcón, born in Mexico in the mid-sixteenth century, worked for most of his life as a priest in Guerrero. Ruiz de Alarcón was a fluent Nahuatl speaker. In the early seventeenth century he was appointed as an ecclesiastical judge for the area and charged with investigating native sorcery and pagan beliefs; begun in 1617 the result was his *Tratado de las supersticiones y costumbres gentilicias que hoy viven entre los Indios naturales de esta Nueva España,* completed in 1629. This is a unique source as, due to the nature of its commission, it records pagan customs that are largely absent from other contemporary sources.

the Spanish authorities were able, or willing, to control and direct the course of medical history in the new colony according to their stated acculturative mission.

Establishing the endurance throughout the colonial period of aspects or remnants of indigenous medicine raises further questions: which elements of indigenous medicine persisted? Why? How? Amongst which sectors of society? The acknowledged co-existence of imported mainland Spanish medicine and indigenous medicine suggests yet more avenues of inquiry regarding the degree of contact between the two: whether they co-existed in isolation according to the Habsburgian system of two republics, which would have at least made internal sense according to the Spanish view of the time, or whether a greater degree of medical interaction occurred?[6]

The Spanish authorities were undoubtedly interested in indigenous herbs and the curative potential of the newfound plants – not least in the treatment of newly imported diseases associated with the New World, such as syphilis,[7] according to the rationale of the day which held that God arranged for a disease and a suitable remedy to come from the same place.[8] Was Spanish state interest in indigenous medicine indeed limited to their herbs and if so to what degree did such views reflect attitudes amongst the wider Spanish population?

[6] The Habsburg administration (spanning the period 1506-1700) in the New World centred around the creation of the República de Indios for the indigenous population and the República de Españoles for Spaniards. For a description see, for example, Magnus Mörner, *Race mixture in the history of Latin America* (Boston, Mass.: Little, Brown, 1967), 45-47.

[7] For an overview of the debate regarding the origins of syphilis, Old World or New, see Alfed Crosby, "The early history of syphilis: a reappraisal," in *Culture, disease and healing: studies in medical anthropology,* ed. David Landy (New York: Macmillan, 1977), 107-113; Alfred Crosby, *The Columbian exchange: biological and cultural consequences of 1492* (Westport, CT: Greenwood Publishing Co., 1972),122-164; and Plutarco Naranjo, "On the American Indian origin of syphilis; fallacies and errors," in *Columbus and the New World: medical implications,* ed. Guy Settipane (Providence, Rhode Island: Ocean Side Publications, Inc., 1995), 33-42

[8] Crosby, *Columbian exchange,* 125.

Reports filtering back from the new colony of the benefits of many of the plants saw trade from the very earliest days. However, the notion that this was the limit of wider Spanish interest in or use of indigenous medicine fast becomes untenable with a fleeting glance through even the earliest literature and sources. Cortés' speech to his men after the *noche triste* [9] reveals that the earliest conquistadors were content with the indigenous medical care they received:[10]

> You must know, indeed, that you are safer and stronger here than away from here, and that in Tlaxcala you enjoy security, strength and honor, in addition to which you have all the necessary and proper medicines for your recovery and health…You would not have fared better in the land of your birth.[11]

While it must be understood that the realities of conquest and early colony conditions, before the Spanish had had a chance to establish regulations and institutions in line with the mainland, would have meant there were few alternatives available other than to accept whatever medical care was available, Cortés' words go beyond a sense of pragmatic resignation to circumstantial

[9] The *noche triste* (sad night) refers to the night of the 30 June 1520 when, following the death of the Aztec King Moctezuma whom they had been holding hostage, Cortés and his men fought their way out of Tenochtitlan, incurring many casualties.

[10] It is worth noting here that although it is also widely reported that Cortés famously petitioned King Charles V in 1522 that there was no need to send Spanish doctors out to New Spain since the Indian practitioners were more than adequate, after receiving treatment for wounds sustained at the Battle of Otumba (see for example, Enrique Cardenas de la Peña, *Historia de la medicina en la ciudad de México* (México: METROpolitana, 1976), 105; Coe and Whittaker, *Aztec sorcerers*, 38; Judith Davidson and Bernard Ortiz de Montellano, "The antibacterial properties of an Aztec wound remedy," *Journal of Ethnopharmacology* 8 (1983): 150; Aquiles Gerste, *Notes sur la medicine et la botanique des anciens Mexicaines* (Rome: Imprimerie Polyglotte Vaticane, 1909), 44; Francisco Guerra, "Aztec Medicine," *Medical History* 10 (1966): 334; Leonardo Gutiérrez-Colomer, "Médicos y farmacéuticos con Hernan Cortés," *Revista de Indias* 31-32 (1948): 331; Edgar Erskine Hume, "Spanish colonial medicine," *Bulletin of the Institute of the History of Medicine* 2 (1934): 217-218) no specific reference could be found and the current study concludes, as suggested by Luz María Hernández-Sáenz and George Foster, "Curers and their cures in colonial New Spain and Guatemala: the Spanish component," in *Mesoamerican Healers*, eds. Brad Huber and Alan Sandstrom (Austin, Texas: University of Texas, 2001), 21, that it has been widely adopted as a metaphor for the general regard in which indigenous medicine was held by the early conquistadors.

[11] Francisco López de Gomara, *Cortés: the life of the conqueror by his secretary*, ed. and trans. by Lesley B. Simpson. (Berkeley: University of California Press, 1966), 229-230. López de Gomara (c.1512-c.1572) worked as secretary-chaplain in Cortés household. This account was reportedly written according to secondhand information received from Cortés as López de Gomara never travelled the New World himself.

constraints, to active praise of what was on offer. Furthermore, once orthodox alternatives did become available and Spanish doctors did begin to appear (which happened almost immediately[12]) reports of Spanish employment of and praise for indigenous medics continued. In the mid-sixteenth century, Fray Toribio de Benavente Motolinía commented that,

> They have their own doctors, experienced natives…some of [whom] are so experienced that they have cured many serious and long-standing illnesses which Spaniards had suffered for many days without finding a remedy.[13]

The sources are peppered with reports of Spaniards', including high profile officials' use of indigenous healers who, it seems, could often meet their health demands better than their Spanish counterparts.[14] It seems that in many cases Spanish use of and attitudes towards indigenous medicine went beyond mere pragmatism. It seems, therefore, that it is impossible to speak of 'Spanish' attitudes, since there is an obvious discrepancy between the official view and that of the wider population.

Even within the bounds of the legitimate state venture, in which medical institutions were constructed according to the norms and adhering to the doctrines

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[12] See Gutiérrez-Colomer, "Médicos y farmacéuticos," 331-337; and Lanning, *Royal protomedicato,* 24-57, for a list of early doctors and regulation. This will be discussed at greater length in Chapter 3.

[13] The original reads, "Tienen sus médicos, de los naturales experimentados...y hay algunos de ellos de tanta experiencia, que muchas enfermedades viejas y graves, que han padecido los españoles largos días sin hallar remedio, estos indios les han sanado," in Fray Toribio de Benavente Motolinía, *Historia de los indios de la Nueva España, escrito a mediados del Siglo XVI/ por el R.P.Fr. Toribio de Benavente o Motolínia de la Orden de San Francisco; sácalos nuevamente a luz el R.P. Fr. Daniel Sánchez García; teniendo a la vista las ediciónes de Lord Kingsborough y de García Icazbalceta* (Barcelona: Herederos de J.Gili, 1914), book I chap. 8, 131. For a version in English see, Fray Toribio de Benavente Motolinía, *Motolinia's History of the Indians of New Spain*, ed. and trans. by E. Andros Foster (University of New Mexico: the Cortés Society, 1950), 155. Fray Toribio de Benavente Motolinía (1482-1568), better known simply as Motolinía, was a Franciscan missionary amongst the first twelve clerics to arrive in New Spain in 1524. His most famous work, the *Historia de los Indios de la Nueva España* was first published by Joaquín Garcia Icazbalceta in 1858.

[14] The most famous example saw Viceroy Antonio de Mendoza treated for a meningital condition by an indigenous doctor, see Viesca Treviño, "*Curanderismo,*" 49.

of contemporary Europe, considerable space was made for Indians, not simply as patients within their own hospitals but, in some instances, as licensed practitioners, midwives, pharmacy assistants, as informants consulted during the compilation of herbals (for example by both Francisco Hernández and Bernardino de Sahagún) and even as authors of medical texts sent back as showpieces to mainland Spain.[15] Within this there was ample space for contact and for the propagation of indigenous medical knowledge. Thus the picture is confused. Despite overt criticism from some, and while certainly within the context of an imposed religion, it seems that, during the early sixteenth century, the Spanish continued to allow Indians some cultural freedoms, not least in developing their native arts and crafts, including medicine.[16]

Any such openings and opportunities for contact and exchange apparent in the formally sanctioned sphere would only have been augmented by events in the popular sector. As will be discussed below, a preliminary look suggests that, even if not through active choice, circumstances would have dictated that many turned to unofficial channels and unapproved healers for their healthcare provision, not least as there was a profound shortage of legitimate doctors in the colony at this time.[17] The proliferation of empirics, charlatans and *curanderos* is further attested

[15] This refers to the *Libellus de Medicinalibus Indorum Herbis,* widely known as the *Codex Badianus* – a herbal written in 1552 by the indigenous doctor Martin de la Cruz in Nahuatl and translated into Latin by Juan Badiano, another indigenous doctor at the Colegio de Santa Cruz de Tlatelolco - a college established in 1536 to teach the children of Aztec natives. For an overview of the activities of the Tlatelolco college see Emily Walcott Emmart, ed., *Badianus manuscript: (Codex Barberini, Latin 241, Vatican Library) an Aztec herbal of 1552* (Baltimore: The John Hopkins Press, 1940), 14-28. The role of indigenous practitioners within the colony will be considered in greater depth in Chapter 3.
[16] Henry Sigerist, "Foreword," to Emmart, *Badianus manuscript*, x.
[17] See Lanning, *Royal protomedicato*, 153.

by the regular flow of official complaints levied against them, complaints which testify to their use by all members from all races of the new colonial society.[18]

The failure of the Spanish authorities to successfully impose their medicine on all sectors of society is too obvious to be the primary aim of this study. Rather the aim is to try and understand the subtleties in interaction between the two systems: the degree to which any state desire to regulate indigenous medicine was reflected in the actions of the state; the extent to which the state's desires reflect the attitudes and actions of the wider population; any difference between what was claimed to be happening and what was actually happening.

The role of the Black populations of early colonial Mexico will also be considered within this medical dynamic. Although there was a considerable Black population in Mexico during the early colonial period – so much so that Viceroy Luis de Velasco wrote to King Charles V in 1553 that "this land is so full of negroes and mestizos that their numbers far exceed those of the Spanish,"[19] – their presence in Mexican histories has been largely ignored.

Before focusing on the arena of medicine, however, it is first useful to lay medical specifics aside, and briefly consider a central facet of the colonial story which has already been alluded to – the fact of pure Spanish imposition – which has continued to inform scholarly opinion to the current day. Since this sits at the heart of the story of Spanish colonialism and affects both the sources and subsequent historical scholarship, it is essential to understand and contextualise

[18] See Paula Susan De Vos, "The art of pharmacy in seventeenth- and eighteenth-century Mexico" (PhD, dissertation, University of California at Berkeley, 2001), 26.
[19] Letter from Luis de Velasco to King Charles V in 1553 in Jon Cowans, ed., *Early modern Spain: a documentary history* (Philadelphia: University of Pennsylvania Press, 2003), 74.

the longevity that the official Spanish version of events regarding conquest and colony in the New World has enjoyed and recent changes in this trend, in order to put this study of colonial medicine within the wider context of a new pluralistic theoretical framework that has emerged.[20]

Conquest mythology and enduring 'truths'

In suggesting that Cortés' would be "most gratified" by the credit he receives in books and websites for the fall of the Aztec Empire, Matthew Restall usefully highlights a wider phenomenon; the fact that Spanish historical propaganda regarding the Conquest and their subsequent role and achievements in the New World has resulted in the propagation of narratives that in many quarters continues to award the Spanish sole agency in shaping the cultures they came into contact with.[21] While there is no doubt about the irrevocable impact that the Spanish had in Mexico, nor, indeed, that they were the primary instigators of change, fortunately understanding of the Conquest and subsequent colony is increasingly becoming more sophisticated and pluralistic, not least as a result of the increased research into both Spanish and, importantly, indigenous source documents. [22] As a result, grand narratives are increasingly being replaced with

[20] James Lockhart, *The Nahuas after the conquest: a social and cultural history of the Indians of central Mexico, sixteenth through eighteenth century* (Stanford, California: Stanford University Press, 1992), 2-4, presents a useful overview of some of the main theoretical transitions, from William Prescott, *History of the conquest of Mexico* (London: Swan Sonnenschein and Co, 1889) to Charles Gibson, *The Aztecs under Spanish rule: a history of the Indians of the Valley of Mexico, 1519-1810* (Stanford, California: Stanford University Press, 1964).

[21] Matthew Restall, *Seven myths of the Spanish conquest* (Oxford and New York: Oxford University Press, 2003), xv. That is not to suggest that this narrative always paints the Spanish in a positive light seen, for example, in the pervasiveness of the 'Black legend' (literature demonising Spain and the Spanish Empire).

[22] Charles Gibson is widely recognised as the initiator of the study of Nahua documents; see Gibson, *Aztecs under Spanish rule*. The real boom in such research, however, happened post the 1992 quincentenary, see Francis Brooks, "The impact of disease," in *Technology, disease and colonial conquest sixteenth to eighteenth centuries: essays reappraising the guns and germs theories*, George Raudzens, ed. (Leiden: Brill Academic Publishing, 2003),127-165, for an outline

histories that are more sensitive to local differences and question the merit of talking in simplistic terms of European conquest and cultural imposition, raising instead the spectre of interactivity and fluidity amongst *colonial peoples*. [23]

The deconstruction of these conquest and colony myths,[24] in moving away from examination of traditional dichotomies of domination and subordination has seen a shift away from both the ethnic superiority models that dominated until the 1960s and the "guns, germs and steel" theory that ensued.[25] An upsurge in knowledge of indigenous life pre- and post-conquest and a boom in historical demography and electron microscopy are further forcing a rethink of the scale of disease impact and population demise, seeking instead explanations which understand and incorporate that "disease as an explanation of the conquest both affects and is affected by all other explanations."[26]

While such re-evaluations of the impact of disease and any decreased figures posited are certainly relevant to understanding the dynamics of the Spanish Conquest, it is worth briefly re-iterating that diseases are still widely held

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of authors. See, for example, James Lockhart, *We People Here: Nahuatl Accounts of the Conquest of Mexico* (Berkeley, California: University of California Press, 1993); and Serge Gruzinski, *The conquest of Mexico: the incorporation of Indian Societies into the western world, 16th – 18th centuries* (Cambridge: Polity Press, 1993).

[23]Andrew Cunningham and Bridie Andrews, "Introduction," in *Western medicine as contested knowledge*, eds. Andrew Cunningham and Bridie Andrews (Manchester and New York: Manchester University Press, 1997), 13.

[24] Matthew Restall draws useful attention to the roles of myth and subjectivity in historical narratives, noting that myths are not always dishonest representations but can be real to their progenitors, especially in Latin America where the polarity of myth and history is not so clearly made. He further cautions that the process of myth-making is ongoing since the "supposed reality built by researching archival sources can also generate its own myths" but that such multiple narratives do not exclude truth nor should subjectivity discourage historians from undertaking research as long as they are aware of it; Restall, *Seven myths*, xv-xvi.

[25] Jared Diamond, *Guns, germs and steel: the fates of human societies* (London: Jonathan Cape, 1997) first coined the phrase. For an overview of conquest theory shift see George Raudzens, "Introduction," in *Technology, disease and colonial conquests, sixteenth to eighteenth centuries: essays reappraising the guns and germs theories*, ed. George Raudzens (Boston: Brill Academic publishers, 2003), xi-xvii.

[26] Brooks, "Impact of disease," 133.

responsible for the deaths of a minimum of 80% of the indigenous populations in the New World.[27] In this way, the significance of disease as an element of conquest and colony cannot be underestimated or undermined within the context of this new pluralistic approach. Thus acknowledging the continued centrality of disease in the history of colonial Mexico, albeit within the new theoretical context, is to concomitantly accept the significant role that medicine would have played in the lives of those affected.

Colonial medicine

The fundamental significance of healthcare and medicine to every society means that it presents a fascinating window through which to view broader issues. Beyond merely elucidating attitudes to wellness and death, they often engender the moral, sexual, religious and political code of a society. As Nancy Siraisi comments, "the history of medicine, perhaps more than that of any other discipline or skilled occupation illuminates broad social and cultural patterns."[28]

Within the arena of conquest and colony, therefore, where societies are subject to huge trauma and change – often health related – medicine can provide an invaluable and dynamic barometer of events, raising and helping to answer important questions about power, assimilation, resistance, death, fear and superstition: do the new environments and situations and the new problems

[27] This lowest figure is drawn from Brooks, "Impact of disease," 137. In many regions it is agreed to have been much higher than this. For a discussion of the potential variability of disease impact in any given area and over time periods see Linda Newson, "Pathogens, places and peoples: geographical variations in the impact of disease in early Spanish America and the Philippines," in Raudzens, ed. *Technology, disease and colonial conquests*, 167-210. It is worth noting, however, that disease scholarship varies enormously over the exact figure killed, not least since demographic studies cannot give population estimates with any real certainty, beyond narrowing it down to 'nearest millions.'

[28] Nancy Siraisi, *Medieval and early Renaissance medicine: an introduction to knowledge and practice* (Chicago: University of Chicago Press, 1990), ix.

emerging as a result of contact and colony force participants to look for new medical solutions or rely on the old? How much does each side look to the other's medical system to answer new sickness dilemmas resulting from contact? To what extent is one side able to impose their system on the other? How much compromise occurs under extreme and unprecedented circumstances? Broadly speaking, therefore, to what extent does conquest and colony force the emergence of medical pluralism; necessitating, aiding and allowing for assimilation, fusion, exchange and interculturation? [29] Understanding the central roles that medicine and health play can provide an invaluable angle from which to understand the wider colonial experience. By understanding disease and medicine as areas for contact and conflict between rulers and ruled and highlighting the role medical agencies and practices can play in shaping colonial identities it is possible to better understand contradictions and even convergence when they appear.[30]

In the last 25 years, a body of literature concerned with understanding and re-evaluating the power dynamics of colonial medicine has emerged. This literature is primarily concerned with re-evaluating the impact of nineteenth and twentieth century medical colony in various parts of the world, and hence the dynamics revolving around the imposition of scientific medicine. Nevertheless, ideas contained within this literature are salient for the study of all episodes of medical

[29] It is important to define exactly what these terms mean as they have different implications for the interplay and power relations between different parties which are critical. For the purposes of the current study the following definitions will be use: assimilation and acculturation both imply the adoption of the values of a different culture and so becoming more similar to them; fusion is a blending or merging of two different styles; exchange is the giving and receiving, which does not definititionally alter either side; and interculturation is the passing of information backwards and forwards between various parallel cultures that remain parallel yet changed by constant interaction with the others, and has more reciprocal connotations.

[30] David Arnold, "Introduction," in *Imperial medicine and indigenous societies*, ed. David Arnold (Manchester: Manchester University Press, 1988), 2.

colony and it is useful, therefore, to begin with a review of some of these ideas before turning to the work specific to Mexico.

Within the literature on imperial medicine, any positive connotations of western scientific medicine have been questioned given the notion that this type of medicine is revealed to work only according to its own internal logic, without any concessions to the understanding or views of the patients to whom it has been spread.[31] The notion that such basic conflicts in the explanation of health processes impact on the potential efficacy of any treatment has long been acknowledged, increasingly so as the power of placebo in the healing process is becoming better understood.[32] The conclusions drawn regarding nineteenth and twentieth century medicine in the context of colony have subsequently been that "to operate properly, scientific medicine has to take with it, or replicate abroad, its instruments and its institutions, together with its inner social hierarchies of expertise," such that it can only be practised effectively among and by true believers.[33]

The propagation of these theories challenging notions of truth and the validity of science, which tie in with the wider theoretical shift outlined earlier, call into question the value of speaking in simplistic terms of conquest and cultural imposition, concluding that it is no longer acceptable to view western ideas as structures that could be simply imposed. Instead medicine and disease describe a

[31] Cunningham and Andrews, "Introduction," 3-6.
[32] Norman Klein, *Culture, curers and contagion: readings for medical social science* (Novato, California: Chandler and Sharp Publishers, 1979), 207. While science could not for a long time explain how folk medicine appeared to work, which lead it to be largely dismissed, the discovery of endorphins has revolutionised understanding of the power of placebo in healing, see Bernard Ortiz de Montellano, *Aztec medicine, health and nutrition* (New Brunswick: Rutgers University Press, 1990), 168-171.
[33] Cunningham and Andrews, "Introduction," 10.

"relationship of power between rulers and ruled,"[34] within which medicine can be used as "a significant tool of empire."[35]

Although this new scholarship has largely centred around medicine and colony in the nineteenth and twentieth centuries and the central controversy therefore lies in challenging the universal applicability principle of the modern biomedical paradigm, many of these core points are obviously still relevant to pre-scientific sixteenth century Spain in Mexico. When transposed to sixteenth century Mexico, the pivot of these arguments certainly shifts, since modern scholars hold no stock by the brand of Renaissance humoral medicine being considered and are, therefore, no longer required to challenge long-held prejudices which regard western science as universal truth. This does not, however, negate the pertinence of many of the issues raised for the study of the pre-scientific sixteenth century.

This is particularly so, since one of the fundamental ideas encapsulated is that "truth is made, not found."[36] Since every society comes with its own truths this is a broad philosophical notion, which is as relevant to a pre-scientific society as to scientific. Within this, humoral adherents would themselves have viewed their own medicine as much a universal truth as modern western populations now do theirs. Furthermore, if truth is constructed then truth is also open and subject to change – it is both malleable and fluid. This is as true of medical truth as any other, since medicine is not an isolated cultural phenomenon but part of a wider package that "is both shaping and shaped by the cultural circumstances that

[34] Arnold, "Introduction," 2.
[35] Cunningham and Andrews, "Introduction," 1.
[36] Cunningham and Andrews, "Introduction," 9.

surround it."[37] Thus, within the context of sixteenth century Mexico it calls into question the flexibility and adaptability of medical truths from both sides.

The thrust of this research into nineteenth and twentieth century medical imperialism is underpinned by two central and related statements: that the effectiveness of scientific medicine is dependent on a shared worldview and milieu; and that in order to ensure such conditions, western scientific medical colonialism has often undertaken the wholesale export of institutions and organisation from their home environment. The significance of a shared worldview is not, however, solely pertinent to the successful propagation of scientific medicine. As will be examined, healing and medicine in pre-scientific times were often, necessarily, conceived within an etiological framework in which moral, religious and superstitious explanation predominated (and this is certainly the case for the Aztec, Spanish and Africans in the sixteenth century) and a similar acceptance, understanding or empathy of at least elements of this broader worldview would also be required for any sense of healing, real or imagined, to occur.[38] Therefore, any evaluation of medical pluralism in colonial Mexico will also necessarily need to isolate whether, which and why elements of the others' worldview were, or came to be, viewed as acceptable or understandable enough for fusion and exchange to occur.

Furthermore, the wholesale exportation of medical systems and hierarchies said to characterise nineteenth and twentieth century scientific medical export, is perhaps

[37] Roy MacLeod, "Introduction," in *Disease, medicine and empire: perspectives on western medicine and the experience of European expansion*, eds. Roy MacLeod and Milton Lewis (London and New York: Routledge, 1988), 1.

[38] Indeed, this is arguably more so in a society relying on disease definitions driven by ideas of sin, for example, since psychology and placebo probably underpinned the success of many of the cures, such placatory efficacy would be negated without the patient's fundamental adherence to the same worldview whence the medicine or treatment was conceived.

more a characteristic of the Spanish colonial endeavour, in all areas, particularly medicine than of any other colonial power in history.[39] If such actions have lead scholars to conclude the use of scientific medicine as a "tool of empire" in later colonies then the same possibility must also be explored for the sixteenth century Spanish. Here it is further worth bearing in mind the fact that most of the medical care in the New World – and certainly most of the legitimate medical care offered to the indigenous populations – would have been undertaken by the religious orders: a useful tool indeed in a colonial enterprise whose legitimacy rested on the religious conversion of the heathen masses.[40]

Despite all of these similarities, David Arnold still suggests that pre-1800 western medicine was less domineering in its relationship with indigenous societies, in fact citing the case of the Spanish in the New World and their use of indigenous medicine despite their disregard for the wider indigenous culture as a case in point.[41] This is no doubt, in part, a result of the fact that professional medics were still in a weak position in the sixteenth century, both numerically and because licensing regulation was still developing.[42] The Spanish medical endeavour in the New World was to be characterised by both strengths and weaknesses which affected its development in intriguing ways.

[39] Gordon Schendel, *Medicine in Mexico: from Aztec herbs to betatrons* (Austin, Texas: University of Texas Press, 1968), 86, attributes the enthusiastic establishment of medical regulation and facilities in the Spanish colonies, for example, to the high status it was gaining as a profession on the mainland.
[40] This will be examined in greater depth in chapters 3 and 6.
[41] Arnold, "Introduction," 11.
[42] Andrew Wear, Roger French and Iain Lonie, eds. *The medical renaissance of the sixteenth century* (Cambridge and New York: Cambridge University Press, 1985), xiv-xv.

Literature on Mexican medicine

There is a large and rich body of literature available for the study of medicine in Mexico. The present aim is not to present an exhaustive overview of all that has been written on the subject, but to provide a summary, using key examples, of the main themes and ideas that have and have not been explored regarding *colonial* Mexican medicine to date. Works relating to indigenous, and specifically Aztec, medicine which form an essential element of any study of colonial medicine and will certainly inform this study will, therefore, not be considered in this literature review.[43]

The view provided by the very earliest scholars of Mexican medicine, like Francisco Flores and Fernando Ocaranza is of pre-Conquest Aztec medicine as an exotic form of other medicine interposed by a pristine Spanish medicine practised by elite doctors.[44] The meticulous detail and depth of such works mean that they can still provide useful reference for modern scholars. The reliance of such works on official Spanish historical documents, however, means that they must be understood contextually as a reflection of only one view of the colonial medical picture.

[43]See, for example, Guerra, "Aztec medicine;" Alfredo López Austin, *The human body and ideology: concepts of the ancient Nahuas,* 2 vols., trans. Thelma Ortiz de Montellano and Bernard Ortiz de Montellano (Salt Lake City: University of Utah Press, 1988); Alfredo López Austin and Carlos Viesca Treviño, eds. *Historia general de medicina en México: México antiguo,* vol. I (México: UNAM, Academia Nacional de Medicina, 1984); Alfredo López Austin, *Textos de medicina Nahuatl,* 2nd ed. (México: Universidad Nacional Autonoma de México, Instituto de Investigacions Históricos, 1975); Ortiz de Montellano, *Aztec medicine;* and Juan Riera, "La medicina precolombina," in *La medicina en el descubrimiento,* ed. Juan Riera (Valladolid: Universidad de Valladolid, Ediciones del Seminario de Histoira de Medicina, 1991), 9-28. For a brief overview of Aztec medical beliefs see Emmart, *Badianus manuscript,* 42-48.

[44] See Francisco Flores, *Historia de la medicina en México desde la época de los indios hasta la presente,* 3 vols (México: Oficina tip. de la secretaria de fomento, 1886-1888); and Fernando Ocaranza, *Historia de la medicina en México* (México: Laboratorios Midy, 1934).

The extent of the survival of indigenous medicine, its adoption by Spanish settlers and how and whether exchange or fusion occurred were for a long time ignored or underestimated largely because, as examined above, theories which seek to view conquest and colony from both sides are a fairly recent development. Juan Comas' work in the mid-1950s examining the influence of Aztec medicine on the doctor Agustín Farfán, which he describes as a preliminary contribution to the knowledge of "inverse acculturation" represents an important change. Although Comas' use of the word inverse demonstrates his adherence to the long-accepted power dichotomy discussed earlier, since its implication is that there is a natural order to acculturation (which is not definitionally implicit), it is, nevertheless, an important study through its specific aim to introduce, albeit in a limited context, the idea of a two-way exchange of ideas. [45]

There has been an acknowledgement, within most of the subsequent literature that a degree of syncretism or exchange occurred between indigenous and Spanish medicine in the New World. Indeed, in 1959 Mario González-Ulloa presented a valuable overview of the history of Mexican medicine in which he talks of "a new concept regarding the practice of medicine and surgery...not indigenous nor totally Spanish," discarding assumptions regarding power dynamics evident in

[45] Juan Comas, "Influencia de la medicina Azteca en la obra de fray Agustín Farfán," in *Proceedings of the international congress of Americanists* 31 (San Salvador: Ministerio de la Cultura, 1955), 27-30; Juan Comas, "Influencia indígena en la medicina hipocrática en la Nueva España del siglo XVI," *America Indígena* 14 (1954): 327-361. Agustín Farfán (c.1531-1604) was a Spanish physician who went to live in Mexico during the mid-sixteenth century. In 1579 Farfán published the *Tractado breve de chirugia y del conocimiento y cura de algunas enfermedades*, in which he surveys 59 remedies, many of them indigenous. A second edition of the book was published in 1592, entitled *Tractado breve de medicina*, which was changed, among other things, to include more indigenous remedies. For more information on Farfán see also Saul Jarcho, "Medicine in sixteenth century New Spain as illustrated in the writings of Bravo, Farfán and Vargas Machuca," in *Bulletin of the History of Medicine* vol. 31 (1957): 427-431.The significance of Farfán's work will be considered in greater detail in Chapter 5.

Comas' work and speaking instead of "medical interculturation."[46] Frustratingly, this precocious allusion to the idea of interculturation was not pursued further.

This is a pattern that tended to define much early research into Mexican colonial medicine; where there were many authors who referred to a process of exchange, normally to syncretism and fusion, they did so as a *fait accompli*, without further investigation into the *processes by which* or the *degree to which* this happened, nor the wider implications of such contact.[47] Furthermore, the vast majority of those who did acknowledge such a situation tended to view this exchange as restricted to the field of herbalism, concluding that little exchange was occuring beyond that.[48]

In many works the triumvirate of the de la *Codex Badianus*, Bernardino de Sahagún's *Florentine Codex,*[49] and Hernández's *Antigüedades* are presented as

[46] The original reads, "un nuevo concepto sobre la práctica de la medicina y cirugía...no indígena ni totalmente española," in Mario González-Ulloa, *La medicina en México* (México: Cyanamid de México, División Lederle, 1959), 47, 38.
[47] Cardenas de la Peña, *Medicina en la ciudad de México*; Charles Boxer, *Two pioneers of tropical medicine: Garcia d'Orta and Nicolás Monardes* (London: The Hispanic and Luso-Brazilian Council, 1963); and Germán Somolinos d'Ardois, *Capitulos de historia medica mexicana: el fenómeno de fusión cultural y su trascendencia médica* (México: Sociedad Mexicana de Historia y Filosofía de la Medicina, 1979), all exemplify this tendency.
[48] Not least Clara S. Kidwell, "Aztec and European medicine in the New World, 1521-1600," in *The anthropology of medicine: from culture to method,* eds. Lola Romanucci-Ross, Daniel E. Moerman and Laurence R. Tancredi (New York: Praeger, 1983), 23.
[49] Bernardino de Sahagún (1499-1590) was a Franciscan friar and missionary priest involved in the early evangelisation of Mexico, and one of the founders of the Colegio de Tlatelolco in 1536. He is most renowned, however, for his *Historia General* (most famously translated as the *Florentine Codex*), an astonishing illustrated work compiled using the results of over 50 years of interviews with Indians conducted in Nahuatl, exploring all apects of their culture, politics, religion, astrology, natural history, economics and medicine. The scope of his work, the fact that it sought to elucidate native culture from their perspective, and his methodology, which involved the completion of questionnaires, which were then cross-checked, has earnt Sahagún recognition as the one of the earliest anthropologists. It is important to remember, however, that Sahagún's work was undertaken with the specific aim of better understanding the Indians in order to facilitate their conversion. See Fernando Cervantes, *The idea of the devil and the problem of the Indian: the case of Mexico in the sixteenth century* (London: ILAS research paper no.24, 1991), 2-5. For more information on Sahagún's life see Arthur J.O. Anderson, "Sahagún: career and character," in Bernardino de Sahagún, *Florentine Codex, general history of the things of New Spain*, 13 vols, eds. and trans. Charles E. Dibble and Arthur J.O. Anderson (Salt Lake City: University of Utah

supporting evidence. Although all three represent critical documents in any study of early colonial medicine, it is important to bear in mind that the significance of their production during the sixteenth century tends to overshadow the important fact that none of them was actually known or distributed within their lifetime and thus their sphere of influence is restricted simply to what can be gleaned from the content of the texts themselves and the fact and circumstances of their having been produced at all, rather than any wider influence during their lifetime.[50]

Gonzalo Aguirre Beltrán, who himself acknowledged the limitations of the study of these three documents, represents an important exception to the rule of limited investigation into the processes underpinning contact.[51] In 1963 he published his seminal work entitled *Medicina y magia: el processo de aculturación en la estructura colonial*, in which he attempted to redress the imbalance of what he saw as an overemphasis of the rational elements of indigenous medicine, seeking instead to elucidate the more emotional aspects.[52] In this work, Aguirre Beltrán was one of the first authors to actually examine the *process* of ideas exchange. Furthermore, he was one of the first, and remains one of the only, authors to give serious consideration to Black medicine in the new colony and so to recognise that any full and true medical history of colonial Mexico must acknowledge this

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Press, 1950-69), 29-41. For an introduction to the outline and content of the Florentine Codex see Charles E. Dibble, "Sahagún's historia," in Sahagún, *Florentine Codex*, 9-23.

[50] This fact is considered by many authors, and even early on in the literature – see, for example, Comas, "Influencia indígena," 332 – but they continue to be consistently featured as evidence of fusion in much of the literature.

[51] Gonzalo Aguirre Beltrán, *Medicina y magia: el proceso de aculturación eln la estructura colonial.* 1963. Rev.ed. (México: Universidad Veracruzana, Instituto Nacional Indigenista, 1992).

[52] This tendency to overemphasise the rational can be seen for example in Jacques Soustelle, *The daily life of the Aztecs on the eve of conquest*, trans. Patrick O'Brian (Stanford, California: Stanford University Press, 1961) in which he concentrates on the 'curiously modern' and 'scientific' aspects of Aztec medicine; or Horacio Figueroa Marroquín, *Las enfermedades de los conquistadores* (San Salvador: Ministerio de la cultura, 1957), 17, in which he comments that "Old Europe knew not even half of what doctors of young America knew of medicinal plants" ("la vieja Europa no sabía ni siquiera la mitad que de plantas medicinales sabían los médicos de la joven América").

three-way interrelationship that came into play from the very moment of conquest. In confining himself to studying the more esoteric elements of medical practice and concentrating largely on the impact and denouement of medicine and magic amongst the more disenfranchised sectors of colonial society Aguirre Beltrán's study was consciously limited. Its expressed intent was not to provide an overview of medical reality in the colony, but to elucidate one aspect of that reality that had widely been ignored.

The importance and influence of Aguirre Beltrán's work cannot be overestimated. In acknowledging the low status of many of the conquistadors, and the fact that the medical ideas they transported to the new colony were therefore not in line with the official elite medicine, he acknowledged that you cannot speak of the imposition of Spanish medicine, since such a homogeneous notion does not exist.[53] In acknowledging the conjunction of medicine and magic in the worldview of indigenous, Black and many of the Spanish population, Aguirre Beltrán drew attention to the fact that elements of their worldviews were, indeed, similar or receptive to each others and, thus, to the potential that existed, and was exploited, for idea-sharing between these previously seemingly disparate peoples. Furthermore, in exploring the parallel functioning of magic-based medicine for the majority versus elite minority medicine he communicated the fact of medical pluralism occurring in colonial Mexico.

Within the context of medicine thus being understood as part of a wider culture it is worth briefly mentioning Francisco Guerra's 1969 work "The role of religion in Spanish American medicine" which shifted focus on to the ideological dimension

[53] Aguirre Beltrán, *Medicina y magia*, 75-85; an idea later picked up on in other works including Hernández-Sáenz and Foster, "Curers and their cures," 23.

of medical practice, albeit from the Spanish perspective. Guerra highlights the significance of the Catholic Church in the medical evolution of Spanish America, not least as the only organisation large and ordered enough to oversee it.[54] While Guerra was not the first to make this link, his study usefully focused attention on this relationship, affording it the significance it merited, and introducing ideas which were replicated and expanded in subsequent literature.

In 1985 John Tate Lanning's definitive and exhaustive work on the Spanish *protomedicato* appeared. Although a book on Spanish regulation of medicine in the empire, it recognised that any evaluation of medical regulation must necessarily include information on those areas of medicine that escaped regulation – that any true history of medicine in the Spanish colonies (and, indeed, mainland) must survey the history of both formal and informal spheres, as properly begun by Aguirre Beltrán. Accordingly it gives coverage to the illicit practitioners who were thriving under the Spanish system. Indeed, the domination of these sectors within the field of medicine is suggested by Lanning's view that "the whole history of colonial medicine, as it really was, is the story of the all-too-natural filling of this awesome gap in doctors."[55] Lanning suggests that official Spanish medical regulation was, in fact, too stringent to be successful; that their medical project was too ambitious, and thus destined to fail, encouraging the appearance of illegal or non-regulated elements; an idea that has persisted to the present day.[56]

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[54] Francisco Guerra, "The role of religion in Spanish American medicine," In *Medicine and culture: proceedings of a historical symposium organised by the Wellcome Institute of the History of Medicine, London and the Wenner-Gren Foundation for Anthropological Research,* ed. F. Poynter (London: Wellcome Institute for the History of Medicine, 1969), 179-188. The link between the significance of the fact that the missionaries were responsible for most medical care in the early colony, and hence the importance of religion to medicine was earlier made by, among others, González-Ulloa, *Medicina en México,* 39.

[55] Lanning, *Royal protomedicato,* 143.

[56] An idea repeated, for example, in Hernández-Sáenz and Foster, "Curers and their cures," 23.

While there is certainly truth in this notion which should not be overlooked, and although Lanning's express aim in this work was to survey Spanish medicine, in making this statement, Lanning continued to award prime agency for the denouement of colonial medicine to the Spanish. The implicit suggestion was that, if there had been enough medical practitioners (being elite Spanish practitioners) their project could have worked. Firstly while any comparisons with the rest of Europe must be made tentatively, given the uniqueness of the Spanish *protomedicato*, the fact that unofficial practitioners were also thriving across continental Europe highlights the fact that the scale of the Spanish attempts at regulation cannot be held solely responsible. However, more importantly, Lanning's suggestion denies Indian, Black, and, indeed, Spanish populations agency in their own choices of healthcare solutions, ignoring the fact that for many, elite medicine may not have represented effective therapy. In this way, the choice of seeking alternative therapy might have been driven, not by a lack of access, either numerically or financially but through active choice because of "basic conflicts in explanations of health processes"[57] In other words, elite medicine did not answer the religious and magical elements so fundamental to Indian, Black and Spanish popular medicine, as examined by Aguirre Beltrán.

Despite this idea, however, Noemí Quezada, while conceding that Aguirre Beltrán's exposure of a shared cosmovision is a significant element towards any understanding of the role of *curanderos*, still disagrees with his suggestion that their success was underpinned by their ability to maintain the psychological security of the group stating once again that their presence was a result of colonial shortages and their persistence a product of overcharging by elite practitioners.

[57] Klein, *Cultures, curers and contagion,"* 207.

She disagrees with Aguirre Beltrán that most *curanderos* were of mixed race, but says they were predominantly Indians who, through a process of almost pragmatic syncretism accommodated Catholic dogma as a mask of legitimacy to cover up the magical component of their beliefs for which they were constantly being persecuted, thus enabling them to survive.[58]

Carlos Viesca Treviño's study of colonial *curanderos* draws different conclusions. Acknowledging that the shortage of doctors would certainly have impacted on colonial medicine, he removes emphasis on the shortage itself, instead suggesting that the presence of *curanderos* "constituted – and still constitutes – a tacit recognition of the failure of government health policies and programmes to eradicate indigenous medical culture."[59] Instead he presents a more nuanced view, examining the emergence and role of *curanderos* through the central ambiguity of the Spanish endeavour and the Spanish response to this state of shortage, which saw them grant license to practise on some Indians (although only ever to treat other Indians) and not others; a legitimacy almost certainly only bestowed on those doctors whose methods were devoid of the magical and superstitious element so feared by the Spanish authorities. In the early period, where possible, these 'approved' indigenous doctors were trained according to Spanish medical norms such that by 1579 they were displaying knowledge of Galeno-Hippocratic theory, cupping and bleeding.[60]

[58] Noemí Quezada, *Enfermedad y maleficio: el curandero en el México colonia,* 2nd ed (México: Universidad Nacional Autónoma de México, Instituto de Investigaciones Antropológicas, 2000). It is worth considering that the racial composition of curandero groups would have depended to some degree on the region being considered.
[59] Viesca Treviño, "*Curanderismo*," 55-56.
[60] Viesca Treviño, "*Curanderismo,"* 51.

Viesca Treviño suggests that as a direct consequence of this situation, those practitioners we recognise by the term *curandero* – people willing to include in their practice the more esoteric and mystical elements that the authorities were trying to eradicate; as diviners and vehicles of the gods – emerged. He therefore views *curanderos* as a colonial construct, emerging at first and in greater numbers in the countryside amongst dispersed populations and away from the gaze of the authorities. He sees the ambiguous paradoxical attitude of colonial authorities, which saw the survival and limited legitimisation of some indigenous practitioners alongside the decommissioning of the vast majority, as explaining this situation. Although Viesca Treviño's work explores the existence of different types of *curandero* it does not really move beyond exploring them as a unified group, despite the fact that subaltern studies reveal that often "they are not a coherent group…[they] might act, but not necessarily in concert."[61]

The works of Louise Burkhart and Serge Gruzinski, whose treatments deal with the subjects of religious assimilation and indigenous mentalities, while not specifically directed towards a study of medicine, importantly recognise and make reference to the role of medicine within this wider framework.[62] Burkhart explores the ramifications of the Christian friars' exploitation of the indigenous "etiology of sin"[63] through relevant biblical metaphors such as 'God the doctor' and 'medicine for the soul' in their evangelising endeavour. Although the conceptual

[61] Laura Lewis, *Hall of mirrors: power, witchcraft and caste in colonial Mexico* (Durham: Duke University Press, 2003), 9.
[62] Louise Burkhart, *The slippery earth: Nahua-Christian moral dialogue in sixteenth-century Mexico.* 2nd ed. (Tucson: University of Arizona Press, 2000); Gruzinksi, *Conquest of Mexico,* examines assimilation through revolutions in expression and modes of communication; Serge Gruzinski, *Man-gods in the Mexican highlands: Indian power and colonial society, 1520-1800,* trans. by Eileen Corrigan (Stanford, California: Stanford University Press, 1989) looks at the religious assimilation of the natives.
[63]This refers to their view (in large part shared by the religious orders) of the link between body and soul which saw immoral behaviour manifest in physical illness. Aguirre Beltán, *Medicina y magía,* 35, is the first to make reference to the "etiology of sin" (etiología del pecado).

proximity of these worldviews would certainly have facilitated dissemination and understanding of the friars' Christian message amongst indigenous populations, Burkhart suggests that in choosing explanations which were so close, the friars inadvertently provided a rationale which simultaneously facilitated indigenous retention of their idolatrous medico-religious view of the world. Gruzinksi also notes the potential for confusion stemming from Christian mixed-messages which denounced notions of idolatrous incantation in matters of health but allowed Christian hagiolatry in prayer healing, and acknowledges that such methods were probably often counter-productive. Through such examples, any idea that the Spanish colonial enterprise worked better when it coincided with native practices is cast into doubt – although exploitation of apparent similarities may have seemed to facilitate the reception of Spanish ideas, it may in fact have served to approve and bolster the original native concepts.[64]

The impact of such ambiguity would not have been felt solely amongst the indigenous population, however; the pragmatism displayed by the Spanish authorities towards medical shortages would have directly affected the Spanish settlers too, not least since less quality control was being exerted on which practitioners were allowed to continue. Yet such considerations of the impact of colony on the wider Spanish population are conspicuously absent in the more recent literature, which has tended to focus largely on indigenous populations. That is not to say that the Spanish do not feature in most of the literature regarding medicine which recognises their role, not simply in elite but also their participation in *curandero* medicine. However, particularly in the domain of the

[64] This idea of the encouragement of religious syncretism and confusion over actions such as the placing of new churches over old temple sites is explored throughout the literature, for example see Coe and Whittaker, *Aztec sorcerers*, 36.

illicit medicine, which is where most of the new ideas regarding colonial medicine have been emerging in the last twenty years, the view given has tended to award indigenous and ethnic populations central positions and prime agency.

While this redressing of the earlier imbalance which had been loaded towards understanding events through the Spanish gaze, has been a very important and necessary development, there is a danger that the pendulum has swung too far the other way and that views regarding the Spanish have come to be largely neglected in the wake of a new Latin American scholarship that has been able to listen increasingly to indigenous views of history through exploitation of new sources.[65] Furthermore, the fact that this has occurred simultaneously with the wider postmodern theoretical shift seeking pluralistic explanations of conquest and colony, means that the views from and of events in the Spanish domain, compared to the native, seem increasingly outmoded and simplistic, since they have not been constructed with the same rigour as those relating to native populations.

Paula De Vos' doctoral research into pharmacy in seventeenth and eighteenth century Mexico is an important exception, looking again at Spanish medicine as based exclusively on archival material emanating from practitioners in the "official" medical establishment."[66] Although not specific to medicine, Solange Alberro's research similarly seeks to understand the impact of the colonial process on the Spanish mentality.[67] Within this she isolates medicine as a key area for contact and assimilation of ideas that gradually changed the Spanish populations in Mexico from being Spaniards to being Creoles. Central to this focus are the

[65] See Lewis, *Hall of mirrors*, 10.
[66] De Vos, "Art of pharmacy," 14.
[67] Solange Alberro, *Del gachupín al criollo: o de cómo los españoles de México dejaron de serlo*, (México: El Colegio de México, Centro de Estudios Históricos, 1992).

cultural worlds of European missionaries and colonisers, whose perspectives are rightly deemed as worthy of study as those of the natives. Most recently, Sherry Fields' research explores cultures of health and sickness in colonial Mexico, seeking to understand indigenous and Spanish responses to illness throughout the colonial period.[68] More research like this, which seeks to bring the two sides together, is needed if a truly balanced picture is to emerge.

Acknowledging such interplay – a process of interculturation between peoples with "each side affected by continual feedback from the other"[69] – and the fact that we cannot claim to "pass through the looking glass"[70] and study indigenous or Spanish or African culture, but that we must instead provide a view of colonial people in motion intrinsically adds *time*, which was largely ignored in the earlier literature, into the equation. Subsequently colonial people must be understood according to "models for behaviour," which allow for changes and adaptability over time rather than "models of reality." [71]

While this sense of motion is apparent in much of the literature, it is surprising how rarely attempts are made to tie colonial time in with mainland Spanish time, which was witnessing some very important changes during this first century of colony.[72] Although it is important to understand events in the colony as a phenomenon independent from the shackles of the motherland, it is, nevertheless, useful to examine the degree to which, for example, the Counter-Reformation, which did spur legislative changes relating to medicine in Spain, was reflected in

[68] Sherry Fields, *Pestilence and headcolds: encountering illness in colonial Mexico* (New York: Columbia University Press, 2008), http://www.gutenberg-e.org/fields/index.html (12 November)
[69] Burkhart, *Slippery earth*, 23.
[70] Gruzinski, *Conquest of Mexico*, 5.
[71] See Burkhart, *Slippery earth*, 10.
[72] The fact that change in New Spain was subject to change in Europe is acknowledged, for example in Gruzinski, *Conquest of Mexico*, *passim.*

events in Mexico, seen for example in the shift in policy that seems to have been taken towards the Indians as their college, El Colegio de Santa Cruz en Tlatelolco, declined, and their options for legitimate study were removed.[73]

Indeed, it is surprising how little reference is made back to medical events in the mainland in order to help shed light on events in the colony. While any attempts to model in this way must obviously be undertaken sensitively it seems unwise not to plunder comparisons and examples from the vast literature available for the study of mainland Spanish medicine and subjects related to medicine such as magic, witchcraft and Inquisition, in order to bolster the still small but growing literature pertinent specifically to Mexican colonial medicine and in order to help anticipate and explain events in the colony. [74] It is only with a full understanding of the cultural situations from all of the sides involved in the Mexican colony on

[73] The shift in policy from Charles V to Philip II, who sent orders that the natives no longer be studied as they had by the likes of Sahagún is touched upon by Donald Robertson, "Mexican Indian art and the Atlantic filter: sixteenth to eighteenth centuries," in *First images of America*, edited by Fredi Chiappelli (Berkeley, California: University of California Press, 1976). Emmart, *Badianus manuscript*, 27, notes that by 1598 the college was unrecognizable from its former glory, catering instead only to local Inidan children to be taught the basics and reading, writing and manners.

[74] For the history of medicine in Spain in general and particularly the period from the fifteenth to the seventeenth centuries see Luis Granjel, "Las repurcusiones médicas del descubrimiento," in *Medicina en el descubrimiento,* ed. Juan Riera (Valladolid: Universidad de Valladolid, Ediciones del Seminario de Historia y Medicina, 1991), 29-41; Luis Granjel, *La medicina española renacentista* (Salamanca: Ediciones Universidad de Salamanca, 1980); Luis Granjel, *El ejercicio médico y otros capítulos de la medicina española* (Salamanca: Instituto de Historia de la Medicina Española, Universidad de Salamanca, 1974); Luis Granjel, *Historia de la medicina española* (Barcelona: Sayman, 1962); José María López Piñero, *Breve historia de la medicina* (Madrid: Alianza Editorial, 2000); José María López Piñero, *Historia de la medicina* (Madrid: Biblioteca Historia 16, 1990); José María López Piñero, *Ciencia y técnica en la sociedad española de los siglos XVI y XVII* (Barcelona: Editorial Labor, SA, 1979); José María López Piñero, "Tradición y renovación en la medicina española del siglo XVI," *Asclepio* 30-31 (1978-1979): 285-306; Robin Price, "La medicina española en la edad de oro," *Boletín Mexicano de Historia y Filosofía de la Medicina* 10 (1987): 3-12. For a brief overview of Spanish medicine written in English see Fielding H. Garrison, "An epitome of the history of Spanish medicine," *Bulletin of the New York Academy of Medicine* 7 (1931): 589-634; and José María López Piñero, "The medical profession in 16th century Spain," in *The town and state physician in Europe from the Middle Ages to the Enlightenment,* ed. Andrew Russell (Wolfenbüttel: Herzog August Bibliotek, 1981), 85-98. For overviews of witchcraft and Inquisition in Spain see Julio Caro Baroja, *The world of the witches,* trans. Nigel Glendinning (Chicago: Chicago University Press, 1964); and Henry Kamen, *Inquisition and society in Spain in the sixteenth- and seventeenth-centuries* (London: Weidenfeld and Nicolson, 1985).

the *eve* of Conquest that it is possible to try and understand subsequent colonial events resulting from contact between these cultures.

Turning to Spain, Luís García-Ballester's extensive research on the process of the degeneration of medical knowledge amongst the *moriscos* and *conversos*, for example, bears fascinating comparison with the processes and results of similar medical degeneration amongst native Mexicans.[75] Linked to this are Guenter Risse's ideas that the Spanish government's policy towards *conversos* and *moriscos* in Spain during this period, many of whom had been doctors before the Reconquest, was aggravating the shortage of health professionals, directing the evolution of medicine in Spain and the Spanish colonies.[76]

In the field of herbalism both J.Worth Estes and Teresa Huguet-Termes have been looking to Spain to help resolve questions surrounding the degree to which the Spanish colonisers assimilated indigenous medical plants into their own practices.[77] Through re-examination of the sources, they are attempting to explain

[75] *Conversos* were converted Jews and *moriscos*, converted Muslims. See Luis García-Ballester, "Minorities and medicine in sixteenth-century Spain: judaizers, 'moriscos' and the Inquisition," in *Medicine and medical ethics in medieval and early modern Spain,* eds. Samuel Kottek and Luis García-Ballester (Jerusalem: The Magres Press, The Hebrew University, 1996), 119-135; Luis García-Ballester, "The Inquisition and minority medical practitioners in Counter-Reformation Spain: judaizing and morisco practitioners, 1560-1610," in *Medicine and the Reformation,* eds. Ole Peter Grell and Andrew Cunningham (London: Routledge, 1993), 156-191; Luis García-Ballester, "Academicism versus empiricism in practical medicine in sixteenth-century Spain with regard to morisco practitioners," in *The medical renaissance of the sixteenth century,* eds. Andrew Wear, Roger French and Iain Lonie (Cambridge: Cambridge University Press, 1985), 246-342. López Piñero also examines the status of both following the Reconquest, concluding that despite legislation prohiting their practice, *conversos* such as Andrés Laguna and Juan Luis Vives continued to dominate until the eigteenth century, which he attributes to the relationship between juadaeoconversos and medicine, as they were one of the most active nucleii of the middle classes; the classic demographic for scientific activity; see López Piñero, *Ciencia y técnica,* 74-78, 152-167. He further describes the case of Alonso de Castillo, a university educated *morisco* who entered the service of Philip II, see López Piñero, "Medical profession," 94.

[76] Guenter B. Risse, "Medicine in New Spain," in *Medicine in the New World,* ed. Ronald Numbers (Knoxville: The University of Tennessee Press, 1987), 14.

[77] J. Worth Estes, "The reception of American drugs in Europe, 1500-1650," in *Searching for the secrets of nature: the life and works of Dr. Francisco Hernández,* ed. Simon Varey, Rafael Chabrán and Dora Weiner (Stanford, California: Stanford University Press, 2000), 111-121; J.

the accounting discrepancy that seems to exist regarding the import of New World drugs into Spain; that a far greater number of plants appear in export lists than subsequently appear in pharmacy inventories in Spain. Huguet-Termes idea that such plants, illicitly consumed by Spaniards in the New World could have been dispersed for similar underground use upon their arrival on the mainland presents an interesting avenue of enquiry with important implications for any understanding of the processes of exchange and the degree of Spanish assimilation.

Any understanding of the literature pertaining to Mexican colonial medicine must include reference to the long-standing debate raging over the origins of the hot-cold dichotomy within indigenous practice; as Indian remnant or Old World humoral imposition.[78] While the significance of accepting either explanation would have important implications for any consideration of medical assimilation, even without reaching conclusions, the debate raises important ideas about the fluidity of the processes by which medical assimilation can occur. Within the context of Norman Klein's idea that "much of what is scientific medicine is constantly becoming part of the folk medical domain,"[79] it serves as a reminder of the constant evolution of medicine over time and raises questions about the validity of the categorisations used throughout much of the literature. Ideas that "the transmission of Spanish medicine to the New World conformed to the same

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Worth Estes, "The European reception of the first drugs from the New World," *Pharmacy in History* 37 (1995): 3-23; Teresa Huguet-Termes, "New World materia médica in Spanish Renaissance medicine: from scholarly reception to practical impact," in *Medical History* 44 (2001), 359-376.

[78] In brief the two sides of the argument are that George Foster believes it to be a European import that filtered down from the professional to the popular level and Alfredo López Austin (among others) believes that it represents an indigenous remnant. For an overview of the argument from both sides see George Foster, *Hippocrates' Latin American legacy: humoral medicine in the New World* (Longhorn, Pa: Gordon and Breach, 1994), 147-188; López Austin, *Human body*, 270-282. Humoralism will be given greater consideration in Chapter 6.

[79] Klein, *Culture, curers and contagion,* 207.

dynamic that characterised the diffusion of other elements of Iberian culture to the New World: an *elite,* or *formal,* level and a *popular,* or *informal* level"[80] are perhaps too simplistic.

The understanding of medicine in colonial Mexico is becoming increasingly nuanced, as part of a wider literature which is seeking pluralistic explanations for the colonial episode. While there is no shortage of work on medicine, works which seek this more subtle and complex level of understanding are restricted, and some of the best works have been conducted towards an understanding of religion and witchcraft, reflecting, in large part, the nature of the archival sources. Such works are certainly relevant to the study of medicine within the wider colonial context, yet it seems time that a similar approach be undertaken specific to medicine, given its centrality to both the Aztec and the Spanish at the time of contact. The continuing tendency to made statements claiming that "with the passage of time Spanish and American traditions syncretised to form a remarkably homogeneous folk medicine common to both Indian and mestizo populations'[81] are over-simplistic in light of the evidence emerging. Greater attention needs to be paid to the processes and attitudes underpinning contact in order to understand *which* elements survive and *how* they come to be integrated, and to understand that the result of such contact is more than simply the sum of its parts.[82]

Within this there are certain key gaps in the literature. Firstly, there is still a remarkable absence of study into the Black populations of Mexico, as briefly mentioned. Although there have been a few good general histories undertaken, the

[80] Hernández Sáenz and Foster, "Curers and their cures," 22.
[81] Hernández Sáenz and Foster, "Curers and their cures," 41-42.
[82] Burkhart, *Slippery earth,* 7.

notable studies such as Magnus Mörner's *Race mixture in the history of Latin America,* Aguirre Beltrán's *La población negra de México* and Colin Palmer's *Slaves of the White God: Blacks in Mexico, 1570-1650*, were all conducted around 30 years ago. Much more needs to be done, not least in elucidating the story of slave medicine, to which Aguirre Beltrán remains one of the only contributors. Laura Lewis' recent study of caste and witchcraft, within which medicine forms an obvious element, makes a valuable contribution to bringing the story of Africans, and, indeed, women in colonial Mexico back into the picture. Much more work is needed, however, since any true history of medicine in Mexico needs to incorporate the African dimension and to consider the degree to which African knowledge contributed to medical developments, alongside evaluating the processes underpinning the reception of Spanish and indigenous medicine by the Black slaves.[83]

There is also a shortage of study on the period of early colonisation, with most of the work concentrating on the seventeenth century and beyond, a criticism acknowledged by Serge Gruzinski.[84] Indeed, in Aguirre Beltrán's luminary study of medicine, only sixteen of the hundreds of Inquisition records considered emanated from the sixteenth century. Although this is in large part a reflection of source availability, it is only by studying the dynamics and mentalities at play from the very moment of contact that any real understanding of patterns emerging within subsequent colonial society can be achieved.

[83] Mörner, *Race mixture*; Gonzalo Aguirre Beltrán, *La población negra de México* (México: Fondo de Cultura Económica, 1972); and Colin Palmer, *Slaves of the white god: Blacks in Mexico, 1570-1650* (London: Harvard University Press, 1976); Lewis, *Hall of mirrors*. Another more recent study is Michael L. Conniff and Thomas Davis, *Africans in the Americas* (New York: San Martin's Press, 1994).
[84] Gruzinski, *Conquest of Mexico*, 2-3.

Perhaps the biggest problem comes, however, not in the fact that there is not a considerable body of literature available for the study of Mexican colonial medicine, but that most of the works tend to lack placement in a wider context or connection with other works, no doubt in part because many exist only in Spanish.[85] Therefore, in order to gain a comprehensive view of developments it is necessary to pool together fragments of evidence found in a wide variety of sources.

Research methods and organisation

The aim of the current study, therefore, is to recognise medical pluralism in early colonial Mexico, elucidating medicine and medical contact and interplay between the Spanish, Indian and Black populations in Mexico during the early colonial period. In this way it will build a fuller understanding of the degree to which and ways in which all parties were receptive or resistant to each others' medical ideas. Research will focus on the central Mexican region, including Mexico City. Although this will not generally allow for comparisons between events in the rural and urban spheres, the aim of this study is not comparative, rather it is to evaluate the plurality of medical interaction in Mexico, which can be best understood through observation of events in and around the capital city, which housed the largest and most diverse population – including the largest number of Blacks during the sixteenth and seventeenth centuries, and was the hub of commercial activity and intellectual innovation.

[85] A criticism raised by both De Vos, "Art of pharmacy," 7; and Linda Newson, "Medical practice in early colonial Spanish America: a prospectus," *Bulletin of Latin American Research* 25 (2006): 369.

It is worth noting here that the current study will employ the term Aztec for the indigenous populations prior to conquest and Indians after, reflecting the colonial terminology. Indeed, while there is much debate over the correct term to use – Aztec, Nahua or Mexica – this study will continue to employ the term Aztec according to precisely the rationale that James Lockhart presents against its use:

> These people I call the Nahuas, a name they sometimes used themselves and the one that has become current today in Mexico, in preference to Aztecs. The latter term has several decisive disadvantages: it implies a kind of quasi-national unity that did not exist, it directs attention to an ephemeral imperial agglomeration, it is attached specifically to the preconquest period, and by the standards of the time, its use for anyone other than the Mexica (the inhabitants of the imperial capital, Tenochtitlan) would have been improper, even if it had been the Mexica's primary designation, which it was not.[86]

The current study is concerned with the inhabitants of the imperial capital and its environs, as are most of the sources which elucidate their pre-conquest medicine. Furthermore, the Aztec habit of incorporating new information into their own systems, including medicine, makes it a useful term to cover an indigenous medicine that no doubt drew from various sources and cultures. The term Aztec medicine will, however, refer only to those elements isolated as pre-conquest practices.

Medicine will here be understood to incorporate both the therapeutic practices and the substances employed. Within this, according to pre-scientific medical understanding of the time, religion and magic will be understood as part of the equipment of healing. Although food and diet are an integral element of health and well-being, there is no space within this study to consider diet as medicine.[87]

[86] Lockhart, *Nahuas after conquest,* 1992, 1. Burkhart, *Slippery earth,* 4, also refers to Mexica as the correct terminology.

[87] Alberro, *Gachupín,* 90 notes that food is notoriously one of the greatest areas for acculturation resistance, and although there is no time in the current study to look at food, it is worth noting that

While empirical efficacy is undoubtedly a significant factor in the adoption or rejection of other medical systems, and would therefore have played a role in any exchange occurring in Mexico, many 'irrational' and empirically ineffective elements were also adopted and exchanged. Drawing conclusions about the efficacy or impotency of the individual systems will therefore only form a small element of this assessment of medical exchange.[88]

Since the possibility for quantitative evaluation does not exist for sixteenth century Mexican medicine, nor would it necessarily help to answer the types of questions being posed, the methodological approach will instead be interpretive. References to medicine drawn from a wide variety of sources, from court prosecutions of illegal practitioners to pharmacy inventories, histories told by the earliest *cronistas* and information from medical works of the time, will be extrapolated and combined in order to systematise meanings and build a fuller picture. Although unscientific this approach is, nevertheless, valid; as Laura Lewis comments,

> interpretation does not eschew the laudable goal of objectivity. It rather recognizes the complexities of knowing, and of what one desires to know. Its point is to capture the noise that the statistician tends to find irksome in order to probe the deeper and messier meanings of human beliefs and behaviours, and to uncover what is inherently ambiguous and fragmented.[89]

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she says that the Spanish in the New World were generally quick to accept the new fruits and vegetables. She suggests that the lack of Spanish women during the earliest years, which inevitably would have seen Indians in the kitchens for the first twenty years probably aided this process. The relevance of diet is also considered Fields, *Pestilence and headcolds, passim.*

[88] It is beyond the remit of the current study to assess the efficacy or impotency of European or indigenous medicines but the fact that various studies conclude that Aztec remedies were, indeed, empirically effective (as well as sometimes being able to achieve the results sought by the Aztec according to their own etiology) must be borne in mind. For the most comprehensive study, see Ortiz de Montellano, *Aztec Medicine,* particularly chapter 7. See also Davidson and Ortiz de Montellano, "Antibacterial properties,"149-161; and Ortiz de Montellano, "Empirical Aztec medicine," in *Culture, curers and contagion,* ed. N.Klein (California: Chandler and Sharp Publishers, 1979), 209-215.

[89] Lewis, *Hall Of mirrors,* 11.

Evidence and ideas scattered throughout the considerable secondary literature will be analysed and combined with evidence from printed primary sources and evidence collected in archives, predominantly in the *Archivo General de la Nación* (AGN) in Mexico City. The most significant and numerous sources applicable for the current study came from the *ramos* of *Inquisición* and *Bienes Nacionales*. *Inquisición* holds proceedings of the Holy Office of the Inquisition including detailed cases of the prosecution of illegal medical practitioners and *curanderos*. While the exclusion of Indians from prosecution by this religious authority by 1571 means that Indians rarely face trial themselves in such cases, they, nevertheless, often appear as figures in the depositions of others. *Bienes Nacionales,* which contains ecclesiastical records, within which the *Juzgado Ecclesiastico* (which heard Indian court cases as the equivalent of the Inquisition) was located. Alongside such information is more mundane information regarding the day to day life in convents, which often provides a rich source of information. Other relevant cases emerged from *Civil*, containing cases relating to civil disputes and *Criminal*, which holds texts pertaining to penal matters heard by the *audiencia.* Bureaucratic, financial and official paperwork was found in *Protomedicato, General de Parte, Archivo Histórico de Hacienda* and *Real Fisco de la Inquisición.* For Chapter 4 records from *Hospitales* were also consulted. Archival research in Mexico was complemented with research at the *Archivo General de Indias* in Seville.

The thesis is organised into five chapters. Chapter 2 will examine the medical backgrounds of each of the three cultures under consideration, Spanish, Indian and Black, on the eve of Spanish conquest. By surveying medical systems, popular and elite, it aims to highlight those areas of similarity and difference in

order to contextualise any understanding of medical assimilation or fusion that ensued.

Chapters 3 and 4 will examine the people involved in treatment and the places where such treatments took place. Chapter 3 will examine the practitioners, elite and popular, and their patients during the early colonial period. Chapter 4 will examine the environments these practitioners were working in and the types of treatments that occurred in any given place. While the main focus of this chapter will be on hospitals, some consideration will be given to other places, such as jails, convents and homes.

The final two chapters, 5 and 6, will deal with medical products and medical practices. Although it can be very difficult to separate these areas into distinct chapters, not least since the application of products could be considered one of the primary medical practices, it is felt that such separation allows greater clarity in assessing pluralism and exchange, particularly in light of the fact that the most commonly acknowledged elements of medical exchange were plants (products) from the Indians and humoralism (practices from the Spanish). Chapter 5 will explore the products used in medical treatment and their reception amongst different colonial groups. Chapter 6 seeks to evaluate the realm of medical practices, including humoralism, more standard therapies such as massage, and esoteric and superstitious practices and beliefs.

Chapter 2

MEDICAL BACKGROUNDS: SPAIN, MEXICO, AFRICA

Any attempt to understand medical pluralism and convergence in the New World and whether, why, how, and to what degree, Spanish, indigenous and African medical cultures assimilated each others' traditions and utilised each others' practitioners must necessarily first give an overview of each of these medical cultures on the eve of conquest. In the case of Spain, for which more evidence and discussion exists, it is further important to highlight changes occurring on the mainland during the first century of New World colony, which can elucidate and contextualise events in Mexico during the same period. Although this information exists in various studies, it has not been fully brought together for the purposes of comparison to date. Once each culture's medical background has been summarised it is then possible to highlight areas of difference and those similar enough for potential exchange and interchange of ideas, practices, products and people. [1]

Spanish medicine in the sixteenth century

Although the translation of a series of medical works from Arabic by Constantine the African during the eleventh century saw the introduction of some new Oriental drugs and a scientific renaissance begun in Italy during the thirteenth century had ushered in an age of greater medical regulation across Europe, the brand of 'academic' medicine learned and practised by elite physicians in sixteenth century Spain, did not differ fundamentally from that found across Europe throughout the

[1] For a brief overview of backgrounds see Newson, "Medical practice," 367-391.

Middle Ages. It was based on the classical Greek humoral pathology outlined in the Hippocratic corpus of the fifth century BC and systematised by Galen during the second century AD, which was further augmented and codified by a variety of Muslim scholars, not least Avicenna, between the sixth and eleventh centuries AD.

Diagnosis and treatment revolved around notions of the body comprising four free-flowing humoral liquids (blood, phlegm, choler/yellow bile and melancholy/black bile), each of which was assigned a pair of qualities characteristic of the qualities assigned to the primary elements of which the earth was thought to consist: fire, air, water and earth. This gave equivalence between the macrocosm of elements and the microcosm of humours (the body). In this way, blood was deemed hot and moist, phlegm cold and moist, yellow bile (choler) hot and dry, and black bile (melancholy) cold and dry. Health was achieved by maintaining a balance of these humours. Within this equilibrium model, treatment saw the prescription of certain foods and plants (all of which were assigned humoral values according to the same schema) or bleeding or purging to redress perceived humoral imbalances.[2]

Despite the longevity of such medical ideas, and their continued dominance during the sixteenth century, it is important to remember that Renaissance Europe was, in fact, teetering on the brink of a scientific revolution that was to culminate

[2] For general overviews of the evolution of medical thought and practice in Europe see Lawrence I. Conrad *et al.*, eds., *The western medical tradition 800BC to AD 1800* (Cambridge and New York: Cambridge University Press, 1995); Ole Peter Grell and Andrew Cunningham, eds., *Medicine and the Reformation* (London and New York: Routledge, 1993); Katharine Park, "Medicine in society and medieval Europe, 500-1500," in *Medicine in society: historical essays*, ed. Andrew Wear (Cambridge and New York: Cambridge University Press, 1992), 59-90; Siraisi, *Medieval and early Renaissance medicine;* Wear, French and Lonie, eds. *Medical renaissance.* For the history of surgery specifically see Owen Wangensteen and Sarah Wangensteen, *The rise of Surgery: from empiric craft to scientific discipline* (Folkstone, Kent: Dawson, 1978).

in a radical overhaul of medical thinking in the century that followed. Beginning in the early sixteenth century with Paracelsus' ideas that observation and experimentation could be used to tackle sickness, which was deemed to come from external factors, the validity of the prevalent humoral model was to be further challenged with the discoveries of Andreas Vesalius, William Harvey and Thomas Sydenham, and eventually undermined by the introduction of microscopy at the end of the seventeenth century, as humoral theory was finally rejected in favour of a biomedical paradigm that has persisted until the modern day.[3] While at the time of the conquest, the impact of such luminary studies was still a glimmer on the horizon, it is, nevertheless, important to bear in mind that the discovery and conquest of the Americas was occurring against this backdrop of great social, scientific and medical transition and change.[4]

The impact of these new medical ideas would have been impossible to control, even for the Spanish authorities who exerted, or attempted to exert, greater state control over the practice of medicine during the fifteenth and sixteenth centuries than any of their European counterparts. While there had been medical regulation across Europe as far back as Roman times and beyond, and university medical departments were established from as early as 1137 in Montpelier, 1280 in Salerno and 1300 in Lerida, it was the Catholic Kings' formal foundation of a medical regulatory board in 1477 – the *Tribunales del Protomedicato* – which

[3] *De humanis corpis fabrica*, published by Dr Andreas Vesalius in 1543, was the first complete textbook of human anatomy; William Harvey's *An anatomical exercise concerning the motion of the heart and blood in animals*, published in 1628 was to disprove Galen's theories regarding circulation by proving that that body did not generate new blood supplies as old ones were used up; Sydenham's publication entitled *Medical observation* (1661-1675) drew attention to the need for careful symptom observation and the keeping of case histories.

[4] See José María López Piñero, *Medicina, historia, sociedad: antología de clásicos médicos* (Barcelona: Ediciónes Ariel, 1969), 95.

drew up codified laws to regulate and license medicine, surgery and pharmacy, making the Spanish medical project unique in Europe at this time. [5]

While the significance of the *protomedicato* and associated claims of its regulatory rigour should not be overlooked, it is important to consider that the unique nature of this medical board and their stated mission has at times appropriated scholarly focus and encouraged the propagation of somewhat misleading histories. Although the establishment of the *protomedicato* certainly represents the most complete attempt made to unify Spanish medical law, acceptance of its role as a universal Spanish regulatory board overlooks, for example, the fact that regional differences continued to exist. Navarre and Aragon, for example, remained outside the *protomedicato*'s legal watch, with medical law enforcement falling instead to local bodies, such as guilds and town councils, who were bestowed with the same powers. Furthermore, these local councils might choose to ignore rules and regulations in favour of imperatives that suited their local circumstances.[6]

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[5] See De Vos, "Art of pharmacy," 6; Lanning, *Royal promtomedicato*; and John Jay TePaske, "Regulation of medical practitioners in the age of Francisco Hernández," in *Searching for the secrets of nature: the life and works of Doctor Francisco Hernández,* ed. Simon Varey, Rafael Chabrán and Dora B. Weiner (Stanford, California: University of Stanford Press, 2000), 55-64. For a summary of the establishment of faculties of medicine at European universities see Vivian Nutton, "Medicine in medieval western Europe 1000-1500," in *The western medical tradition 800BC to AD1800*, eds. Conrad *et al* (Cambridge and New York: Cambridge University Press, 1995): 153.

[6] See Etienne Lépicard, "Medical licensing and practice in medieval Spain: a model of interfaith relationships?," in *Medicine and medical ethics in medieval and early modern Spain*, eds. Samuel Kottek and Luis García-Ballester (The Magres Press: Jerusalem, 1996), 50-60; and José María López Piñero, "Medical profession," 86. Differences also existed in Valencia, see Miguel Eugenio Muñoz, ed. *Recopilación de las leyes, pragmáticas, reales decretos, y acuerdos del Real Proto-Medicato.* Valencia, 1751, http://books.google.co.uk/books?id=W714k4A48xoC&printsec=frontcover&dq=miguel+eugenio+munoz+recopilacion&hl=en&ei=J9PGTpmfIYLD8QOl591d&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDsQ6AEwAg#v=onepage&q=miguel%20eugenio%20munoz%20recopilacion&f=false (12 November 2011).

Certainly at the beginning, the activities and controls exerted by the *protomedicato*, far from being specific and prescriptive, were confusing and relatively limited. Although the Catholic Kings took an important first step in establishing the *protomedicato*, it was not until nearly a century later during the reign of Philip II that meaningful regulations were made.[7] Thus the initially limited *protomedicato* controls were further squeezed by a historical precedent of local decision-making which meant that, even areas that came under the *protomedicato*'s watch, were difficult to bring into line.

In the context of the discovery of the Americas, therefore, it is important to remember that for the first century following the conquest of Mexico, the *protomedicato* was still evolving on the mainland against the aforementioned backdrop of both historical local independence and profound social and scientific upheaval. It was only in 1563, nearly half a century after the conquest of Tenochtitlan and seven years before the official establishment of a royal *protomedicato* in Mexico, for example, that regulations outlining the specific requirements for qualification as a physician were finally agreed upon on the Peninsula.[8]

As previously mentioned, the significance afforded the *protomedicato* has nevertheless meant that discussions of Spanish medicine and of its transference from Spain to the New World have tended to focus heavily on the legitimate professional sector and humoral medicine, describing the medicine theorised and practised by elite doctors. Such narrow focus on certain elite medical

[7] Lanning, *Royal protomedicato*, 72, pinpoints the dates of 1563, 1588 and 1593 as key for legislation.
[8] For general information on the *protomedicato* see Lanning, *Royal protomedicato*, 14-23; 60-91. To see the original laws passed by the Crown see Muñoz, *Recopilación*, throughout.

professionals is problematic because it draws attention away from the existence of an abundance of other practitioners. Indeed, an extensive literature on medicine in Spain in the early modern period, referred to in Chapter 1, provides clear evidence for the fact that the majority of the Spanish population relied on popular healing, not the professional sector, for their healthcare needs.

Even works that seek solely to consider the legitimate sphere tend to gloss over messier details by focusing almost exclusively on the triumvirate of physician (*médico/físico*), apothecary (*boticario*) and surgeon (*cirujano*). It is certainly true that these categories sat at the top of what was a hugely hierarchical system in which, officially at least, only licensed practitioners could legally work. Such exclusive focus on them as representative of the legitimate medical domain, however, ignores the almost certainly numerically dominant scores of empiric specialists who worked alongside them.

While the criteria for acquiring a license and *protomédico* approval for practice depended from profession to profession, it was not a document exclusive to the university educated elites, but could also be obtained by many categories of empiric specialists, such as phlebotomists, algebrists and oculists, who were able to prove their ability (ostensibly under exam conditions). The failure to consider adequately the role, practices and status of these lower echelons of empiric specialists serves to further compound misunderstanding surrounding Spanish medicine, since it is precisely this group – some of whom were and some of

whom were not licensed – who were most likely to straddle the gulf between the elite and folk healers.[9]

Such oversight is particularly relevant in the context of the new scientific theories that were emerging during this period. While the power of the *protomedicato* coupled with the increasingly conservative climate of Counter-Reformation Spain may have served to retard scientific advances on the Spanish mainland at this time, [10] the authorities were not able to entirely restrict the dissemination of new scientific ideas, which may have held particular appeal for surgeons and empirics who already employed empiric methods of observation similar, for example, to those proposed by Paracelsus. Indeed, the restrictive atmosphere of Spain may well have provided an incentive for those practitioners seeking greater freedoms to flee to other parts of the world, not least the recently discovered Americas, where there were fewer controls. Although speculative, this raises the spectre of some of the medical emigrants to the New World comprising followers of this new Paracelsian theory. Furthermore, such practices would have been more readily accepted in the New World context where encounters with an entirely alien botany encouraged, if not necessitated, that even the orthodox medical elites adopt a botanical approach based on direct observation not learning. [11]

Although there are limitations to any category division, for the purposes of discussing Spanish medicine, some sort of division must be made between

[9] See De Vos, "Art of pharmacy*,"* 7.
[10] The Counter-Reformation saw the issuing of prohibited book lists and banning Spanish students from studying abroad, seen, for example, in the numbers of student at Montpelier. Luis Granjel states that between 1503-1558 there were around 300 students there but from 1559 onwards fewer than ten are recorded; see Granjel, *Medicina Española renacentista*,12-14. See also Newson, "Medical practice," 371-372.
[11] See López Piñero, *Ciencia y técnica*, 154-163; and López Piñero, *Medicina, historia, sociedad*, 279.

practitioner types. Most attempts to date have divided practitioners according to a series of nominal opposites – sanctioned versus unsanctioned, professional versus lay or legitimate versus illegal.[12] In truth these categories are not as meaningful as they might first appear. Rather the adoption of these stark opposites lends credibility to ideas promulgated by the Spanish crown regarding both the clarity of their project and their ability to implement this vision successfully. Because medical laws were neither clear nor stringently applied and because the situation was fluid such rigid boundaries are, therefore, misleading. In actual fact legitimacy was not confined to the university educated; even legitimate university educated doctors engaged in illegal activities; and "sanction" is too arbitrary to help define a meaningful category of practitioner – even if considered from the authorities' point of view – particularly since even kings were known to bend the rules, bestowing sanction on favoured practitioners who would have failed to achieve legitimacy through normal channels and according to standard rules.[13]

Because license was the single document by which the authorities differentiated between diverse categories of practitioners (who were often undertaking the same activities) this study will use licensed versus unlicensed to order its thoughts. Even this division is undertaken tentatively, aware both of the fact that such a distinction is made according to official criteria and would neither have mattered nor been meaningful to the vast majority of the population, and that even from an official gaze it is an artificial division because the line between different sorts of

[12] Lanning, *Royal protomedicato,* 135-152; Laura Lewis, *Hall of mirrors,* talks in terms of sanctioned behaviour vs unsanctioned, a stance echoed by Maher Memarzadeh, "Medical practitioners in early colonial Mexico," (PhD diss., University of California at Los Angeles, 2005).
[13]Etienne Lépicard gives an example of a Jewish woman practising without license whom the King defends because she is only administering to the Jewish population (unfortunately he provides neither the precise year nor the name of the King), see Lépicard, "Medical licensing," 59.

practitioners, even licensed professionals, was blurred.[14] Furthermore it is clear that the manner of achieving license varied according to practitioner type and, given that exceptions were made within the same professional category (such as in the example of the king above), although often linked, license and legitimacy were not synonymous. Bearing all of this in mind, however, by recognising license as the only tangible documentary distinction between practitioner types, this division more honestly reflects the parameters of the attempted Crown medical project, giving at least a sense of how the system was *supposed* to work.

The *protomedicato* and licensed medical practitioners

Despite the limitations of the *protomedicato* as previously outlined, the unification of Spain under Ferdinand and Isabella and their subsequent naming of the *protomedicato* in 1477 to help the age old problem of determining who was practising legally was nevertheless significant, marking a key moment in Spanish medical legislation. Although unable to stamp out illegal practice, the formal and well-documented establishment of this regulatory body provides an invaluable reference point for understanding which practitioners were to be subject to examination, along with the specific criteria by which they were to be evaluated. It enables historians to begin to understand which candidates the Spanish crown judged suitable for licensing, how this was to be established and thus, what the Spanish authorities deemed to be the components of their 'ideal' medical scenario. It is important to try and understand this at this stage in order to better understand how such ideas may have come to be modified in the New World and what impact, if any, this would have had on those practising there.

[14] See Fields, *Pestilence and headcolds,* chap. 2 para. 24.

The powers afforded the new authority are key to understanding this. In 1477 Ferdinand and Isabella decreed that *protomédicos* were to examine doctors, surgeons, bonesetters, apothecaries, herbalists and any other people working as such who were to be certified for free-practice if qualified. Thus, in the earliest days, while the intention to regulate was explicit, the terminology was fairly vague and open – although this was to become more prescriptive with the promulgation of more pragmatics by subsequent monarchs. Furthermore the qualification requirements for different professionals varied by category; while some required university education, the majority did not; although examination was standard practice to gain license, again exam specifics varied from profession to profession. [15]

The elite triumvirate: physicians, apothecaries, surgeons

The elite status of medical practitioners at this time was indicated according to their level of specialisation, although counter-intuitively the more generalised the practice, the more elite the practitioner; specialisation denoted lower status.[16] Indeed, laws dictated that doctors, surgeons and pharmacists not be given *licencias limitadas* (limited licenses) to treat only certain conditions, but only general licenses for their discipline. [17] Within this they were not to stray into the treatment domain of their colleagues, thus, for example, doctors could not perform surgery and pharmacists could conduct no medical examinations.[18]

[15] See Lanning, *Royal protomedicato*, 16-17, 76-77; and Muñoz, *Recopilación,* chap. II, sec. III, 39.
[16] Siraisi, *Medieval and early Renaissance medicine*, 38.
[17] Muñoz, *Recopilación,* chap. VIII sect VI, 113-114..
[18] See Muñoz, *Recopilación,* chapters X, XI, XII, specific to physicians, surgeons and apothecaries, and chapter XIII which concerns the prohibitions in place to prevent such practitioners straying into each others' disciplines

Physicians sat at the top of the hierarchy. The laws of 1563 clearly defined that it took ten years in total to qualify as a physician: four gaining a Bachelor of Arts degree, four at a faculty of medicine and a further two practising under the supervision of a qualified doctor.[19] In general physicians were expected to write prescriptions in Latin, although this was itself a subject of debate throughout the course of the sixteenth century.[20] University education was restricted to men who were able to prove *limpieza de sangre* (blood purity) which meant that women, Jews and *conversos,* and Muslims and *moriscos* could not, in principle, become licensed physicians.[21] In reality, there were ways around this stipulation which saw *conversos* (and to a lesser extent *moriscos*) continue to proliferate in the medical arena.

Boticarios were responsible for preparing the medicines prescribed by doctors. To this end, although apothecaries were not required to attend university as part of their training they were expected to be literate and know Latin, in order to read prescriptions and medical treatises. While they were initially prohibited from

[19] For training requirements for physicians see Lanning, *Royal protomedicato,* 72-77*;* and Muñoz, *Recopilación*, chap X, 137-149.

[20] Seen, for example, in Carlos V and Doña Juana's 1537 *ordenanza* stating that they should prescribe in romance language, an order repeated by the Seville *cabildo* in 1599; see Mercedes Fernández-Carrion and José Luis Valverde, *Farmacia y sociedad en Sevilla en el siglo XVI* (Sevilla: Servicio de Publicaciones de Ayuntamiento de Sevilla, 1985), 20.

[21] *Limpieza de sangre* refers to 'blood purity', a measure not of racial purity but of religious bloodline purity. In order to be deemed clean you were subjected to tests to prove you descended from pure Catholic stock. Muñoz quotes a pragmatic from the Catholic Kings issued on 10 September 1501 regarding blood purity and how it was to be judged: "los reconciliados por el delito de la heregía y apostasia, ni los hijos y nietos de quemados y condenados por el dicho delito, hasta la segunda generación por línea masculina y hasta la primera por línea femenina, no pueden ser...[long list of professions] ni fisico, ni cirujano, ni boticario, ni tener otro oficio público," see Muñoz, *Recopilación* , chap. VI section I, 71-73. It is worth noting that Lanning, *Royal protomedicato,* 179, on the subject of *limpieza de sangre* rules that "The Spaniards made a fetish of purity of blood...but we should make doubly sure that we follow their practice as well as their codes before we understand their real concern with racial "taint." In the eighteenth century when Miguel Eugenio Muñoz reviewed and compiled a Spanish medical law from the Middle Ages, he never once asked whether a man's skin was black, brown, or white. In metropolitan Spain, purity of blood meant exclusively freedom from the taint of heresy, the Moslem religion, or Judaism." See also John Tate Lanning, "Legitimacy and *limpieza de sangre* in the practice of medicine in the Spanish empire," *Jahrbruch für Geschichte von Stat, Wirtschaft und Gesell-schaft Lateinamerikas* 4 (1967): 46-52.

setting up practice without first submitting to a proficiency exam, in 1563 Philip II extended the laws specifying that before sitting the exam they must first have four years practical experience under an examined apothecary, adding an additional requirement in 1570 that they be no less than 25 years old. Despite a lack of university education, their extensive training coupled with knowledge of Latin and exclusive rights to prepare and sell medicines, meant that the status of apothecaries was above that of surgeons, bringing them closer to that of physicians. Indeed, pragmatics from 1588 and 1593 specified that a *boticario* be included on the board of *protomedicato* examiners and, furthermore that a joint commission of physicians and apothecaries be assembled to draw up a general pharmacopoeia.[22]

Alongside needing to prove their own personal qualifications their shops were subject to regular inspections, or *visitas,* by the *protomédico* to check that they were adequately stocked and that the medicines were of good quality. Once again apothecaries were subject to blood purity regulations and it was again a profession that excluded women. Indeed, women were not even allowed to own *boticas* (pharmacies); in 1593 Philip II passed a specific law prohibiting widows from inheriting them, although the evidence suggests not only that this was a law often

[22] López Piñero, "Medical profession," 90. Fernández-Carrion and Valverde, *Farmacia y sociedad,* 11-20, state that apprenticeships were often arranged with a father making a contract with an established *boticario* promising his son's services for a specified amount of time. Although they say that there was slight regional variation, and in Seville, for example, following negative information coming out of the *visitas,* 1591 saw a new *ordenanza* specifying that pharmacists undertake a longer apprenticeship of six years, that they be of good moral nature – "fiel, legal y de confianza, buena vida y fama" – whilst also stipulating that they be in possession of a minimum of 500 *ducados* in their bank in order to be able to adequately stock their new *botica*.

overlooked but that certain cases were legitimised with *cabildo* (town council) approval.[23]

Herbalists and *especieros* (spice merchants or 'spicers') are often mentioned in the same breath as *boticarios.* Indeed, this category is among the few specified in the list announcing who was to come under the *protomedicato*'s watch and they are differentiated in the list of the first medical emigrants to the New World.[24] The basic difference perceived between herbs and spices was that the former were domestic and the latter were considered exotic; often spices were considered stronger and, generally, more prestigious. Although one dealt with herbs and the other spices, it is not entirely clear what the status or precise requirements were to qualify. It seems, however, that although legitimate and not dissimilar to apothecaries in their role, they did not gain equal status, nor require any formal training or examination.[25]

Surgeons ostensibly dealt with external medicine. Recognised as technicians, not scientists, surgeons were prohibited from carrying out the internal duties of physicians and forbidden from prescribing, meaning they were not required to learn Latin. However, some universities did provide surgeons with theoretical learning and surgical training leading to the distinction between *cirujanos latinos* who had received university education and *cirujanos romancistas,* who had not. This difference was at times a source of contention between the different types of surgeon. Luis Granjel notes that Francisco de Arceo, alluding to the *romancistas*

[23] See Fernández-Carrion and Valverde, *Farmacia y sociedad,* 15-20. In terms of blood purity they comment that in Seville Blacks and Mulattoes were added to the list of prohibitions from 1591.
[24] Lanning, *Royal protomedicato,* 17, 21.
[25] Paul Freedman, *Out of the East: spices and the medieval imagination* (New Haven and London: Yale University Press, 2008), 60-71. Muñoz lists 'espicieros and drogueros' alongside bonesetters and midwives as practitioners not requiring examination. See Muñoz, *Recopilación,* chap.VIII sec. III, 109.

talks of "those ignorant of science."[26] While it seems that surgeons were subject to blood purity laws it is unclear exactly what qualifications were required to practise as a romance surgeon. While it is known that they were expected to undertake a four-year apprenticeship under a licensed surgeon followed by a competency exam in order to qualify, it seems that exam content was subject to regular updating: four different documents on the nature and content of these exams were issued by the Crown throughout the sixteenth century.[27]

The professional activities of these elite practitioners, and earning power, varied from case to case, with only the lucky few achieving the best-paid positions in services to the royal court.[28] Many physicians and surgeons would work in the service of a particular household as *médico* or *cirujano de cámara* (chamber physician/surgeon). Others would work, alongside apothecaries, on the payroll of the local authorities as a town medic, continuing the medieval tradition whereby towns and cities employed permanent medical staff to minister to the local residents – with a particular responsibility for times of pestilence. Here they were often required to provide free service to the poor. Records show that sixteenth century Spanish towns employed an average of four or five learned doctors per 10,000 residents in this capacity. In this guise they were expected to visit hospitals and jails, including apothecaries who were even expected to accompany

[26] Granjel, *Medicina española renacentista,* 134.
[27] These Crown regulations were issued in 1528, 1563, 1588 and 1593; see Price, "Medicina española," 4. See also Muñoz, *Recopilación,* chap XI, 150-155 (and XIII on the prohibitions for surgical practice).
[28] López Piñero, *Ciencia y técnica,* 81, gives salary breakdowns and asserts that ultimately *boticarios* earned more than their colleagues.

physicians on their twice-daily rounds in some hospitals providing consultative backup known as *farmacia clínica* (clinical pharmacy).[29]

Licensed empiric specialists

Despite regular complaints from the medical elite, and Spanish state attempts at stringent medical regulation there was no obvious relationship between university education and medical practice; there were many other methods of learning and qualifying available. The university educated few did not manage to achieve a monopoly on practice, not even on legitimate practice. Empiric specialists who could expect to practise legitimately without university education included, among others, barbers (and barber-surgeons), dentists, bonesetters, algebrists, *sacadores de piedras* (stone removers), *hernistas* (hernia operators), *batidores de catarata* (cataract operators), phlebotomists/bleeders, and midwives.[30] Furthermore, the distinction between surgeons and empirics was difficult to define. The category of surgeon was in fact fluid and many empirics were effectively minor and specialised surgeons. Indeed, while in the early decrees it was only doctors, surgeons and pharmacists who required examination by the *protomédico* this was changed to include barbers.[31]

Laws and pragmatics were constantly updated throughout the sixteenth century to include certain specialised empirics within medical regulation. The earliest laws

[29] See Fernández-Carrion and Valverde, *Farmacia y sociedad,* 39-40, with particular reference to the Hospital de Santa Ana de Granada. See also López Piñero "Medical profession," 85-88, 94-97; and Andrew Wear, "Medicine in early modern Europe, 1500-1700," in *The western medical tradition 800 BC to AD 1800,* ed. Conrad *et al.* (Cambridge: Cambridge University Press, 1995), 232.
[30] García-Ballester, "Minorities and medicine," 13; Granjel, *Medicina española renacentista,* 133; López Piñero, *Medicina, historia, sociedad,* 96.
[31] See Muñoz, *Recopilación,* chap. VIII section III, 110. On this point see also Fields, *Pestilence and headcolds,* chap. 2 para. 37.

seemed to favour allowing practise without examination, for example in 1500 the Catholic Kings issued a *reglamentación pragmática* conceding authorised practice by barbers and bleeders, even prior to eventual examination by *barberos mayores* ('senior barbers') and in the same year the Segovian authorities ruled in favour of allowing bloodletting and tooth-pulling without exam or even training beforehand. Over time more rules emerged making reference to the issuing of licenses; for example in 1570 and again in 1578 Philip II authorised special licensing of barbers, plasterers and urologists, and in 1588, ten years later, Philip II again provided for the award of a special *licencia particular* (private license) for urologists dealing with stricture and gallstones, those treating ringworm, *batadores de cataratas*, *hernistas* and *algebristas*. It was also specified that oculists, algebrists and hernia operators had to assist a licensed doctor or surgeon and could not work alone. Despite the proliferation of related laws, information regarding the specific criteria for licensing from profession to profession remains vague. [32]

Most is known about phlebotomists who were, it seems, subject to regulations similar to romance surgeons or barbers: they were expected to be able to prove blood purity and undertake an apprenticeship of four years before being considered for licensing via an examination. Exam questions put to them reveal that their expected knowledge was not restricted to bloodletting alone, but they were also expected to know how to treat ulcers, lance boils and extract teeth. A 1588 pragmatic informs that algebrists were also required to sit practical exams in which they were required to demonstrate knowledge of suitable fracture and

[32] See Granjel, *Medicina española renacentista*, 184-185; López Piñero, "Medical profession," 89-90; López Piñero, *Ciencia y técnica*, 51; Muñoz, *Recopilación*, chap. VIII section VI, 113-115; and Price, "Medicina española," 4.

dislocation treatments. Indeed, in 1599, by royal command, the *protomédico* Luis Mercado published a compendium teaching aid in Castillian for these algebrists. It seems likely that, over time, most empiric specialists seeking legitimisation through license were similarly expected to undertake some form of apprenticeship before submitting to a practical exam. [33]

Attitudes to these empiric specialists were mixed. This is possibly because it was the easiest category to intrude into (not least because of tardy licensing regulation) and almost certainly the one in which, although the opportunity for licensing existed, the greatest numbers of unlicensed members practised, put off by the bureaucracy and cost involved in obtaining a license. Although some did seek and gain license, research into hospital records payment of bleeders for their services suggests that, in many cases, the paltry wages earned per operation conducted meant that the costly business of submitting for and travelling to undertake examination would simply not have been a viable option.[34]

As was the case with the more elite medical professionals the career prospects for empirics varied dramatically, even when licensed. Some would work for town authorities, particularly phlebotomists who are often mentioned servicing prisoners. While some might own their own shops others would only aspire to work in the shops of others or in the market squares. Despite the fact that some of these empirics achieved fame and worked in the highest social circles, earning salaries equivalent to their more learned colleagues, the lack of required formal training for such positions meant that even when licensed they generally, held

[33] See Fields, *Pestilence and headcolds*, chap. 2 para. 38; Lanning, *Royal protomedicato*, 284-285; and López Piñero, "Medical profession," 90.
[34] See Lanning, *Royal protomedicato*, 282.

lower status than physicians, apothecaries and Latin surgeons. They were also often publically lambasted by their peers; alongside the *cirujanos romancistas* Francisco de Arceo derided barbers, bleeders and "itinerant empirics" ("*empíricos vagabundos*") for their charlatan approach to their art, stating that "no disease is incurable, they find everything easy and cures are promised but not attempted until the money has been taken from the miserable patients." [35]

Despite such complaints, however, it seems that the existence of such specialists willing to undertake the more basic procedures, such as bloodletting and urology, eventually led surgeons to resist undertaking these same duties, thus stimulating the need for such empiric specialists throughout the sixteenth century. As already examined, this, in turn, generated subsequent regulation by the authorities which had the inverse effect to that originally intended by the surgeons' complaints. Rather than provoking state sanction the increased need for the services of such specialists instead lead to concessions in their favour and a general softening of the laws. Although legal cases were often brought against them by doctors and particularly by surgeons who resented them muscling in on the lucrative medical scene, it was not uncommon for city authorities to even rule in favour of such empirics, although they might stipulate boundaries to their practice. Thus, although the introduction of the *protomedicato* began the process of medical stratification, at first the impact of the hierarchy was minimal, not least because of a shortage of personnel and a lack of clear legal definition. The early attacks against empirics by the medical elite, although abundant, were actually made from

[35] The original reads, "no hay enfermedad incurable, todo lo hallan fácil, prometan la curación, pero no la intentan hasta después de haber sacado el dinero a los infelices pacientes," in Granjel, *Medicina española renacentista*, 134-135. Here he also outlines the case of Francisco Semovilla who was employed in the royal court to cure stones, *roturas* (fractures/breaks) and hernias and of Rodrigo de Luna in the early sixteenth century who was Queen Isabel's bleeder earning a salary of 35,000 maravedís.

a weak position as local licensing did not provide much protection and the elite were definitely the minority.[36]

Over the course of the sixteenth century, as the links forged between the Spanish authorities and medicine – which served to boost the status and perceived value of learned physicians and surgeons – strengthened (most notably under Philip II whose medical bureaucracy grew in strength and consolidated its power), so too the hierarchy became more pronounced.[37] Increasingly elite practitioners vied to discredit their competitors, not only empirics and those working in the popular and illegal sectors, but amongst themselves in the elite sphere too, where they were similarly vying for status, position, recognition and wealth. Such squabbling was set to increase throughout the course of the sixteenth century and was to be another element of Spanish medicine to be exported to the New World. Often couched along ideological lines – quoting the presence of superstitious practice or the deficiency of learning displayed by competitors - such a line of complaint was, in fact, a thin disguise for a more straightforward territorialism.[38]

The blood purity stipulations also provided ripe grounds for elite practitioners to disclaim their competitors' activities. Prior to the Reconquest Jews and Muslims had dominated in the medical arena which meant that the medical professions were to remain under suspicion afterwards, with medics vulnerable to persecution

[36] Granjel, *Medicina española renacentista,* 135, outlines the case of Beltrán Casas who was given permission from the *provisor* (a type of ecclesiastical judge) of Segovia authorising him to "cure with wine and spells" ("curar con vino y palabras de ensalmo") and from a *corregidor* (magistrate) who similarly licensed him to do whatever he liked as long as he did not bleed or prescribe pharmacy medicines, against the complaints of doctors and surgeons that he was not licensed or trained. See also Wear *et al., Medical Renaissance,* xv.

[37] See García-Ballester, "Academicism versus empiricism," 250; and Wear, "Medicine in early modern Europe,"237.

[38] On physicians and apothecaries see Fernández-Carrion and Valverde, *Farmacia y sociedad,* 11-12.

by the Inquisition. It is, nevertheless, true that even after the expulsion of the Jews in 1492 the medical profession remained dominated by *conversos* and, to a far lesser extent, *moriscos*. Indeed, Luis García-Ballester comments that, ironically, it was the zeal of the Inquisition against *morisco*s and *conversos* which enabled historians to discover exactly how many *conversos* continued working, particularly as town physicians, across Spain. Soft application of blood purity laws, coupled with straightforward corruption left many loopholes for manipulating the system. Thus, despite supposed prohibition, some *converso* and a few *morisco* doctors rose up the ranks, even working as court physicians.[39]

Although it is certainly true that many *conversos* and *moriscos* survived to continue practising medicine in Spain, the general impact of the social changes in Spain was harsh, particularly on the *moriscos* who witnessed an almost absolute disappearance of their legitimate doctors within the space of two generations. Luis García-Ballester has most famously conducted extensive research on the plight of the *morisco* doctors in Spain following the Reconquest of 1492; a phenomenon that bears interesting comparison with what was to occur with the indigenous doctors in Mexico but which to date has not been used to shed light on those events.

[39] García-Ballester, "Inquisition and minority medical practitioners," 171-2, 156-166, outlines the case of a *morisco* healer, Jerónimo Jover, who, after being denied the possibility of a degree at Valencia in 1577 decides to go to Lérida instead, suggesting some institutions were easier to get into than others. López Piñero, *Ciencia y técnica*, 74-77, 165-167 examines the status of both following the Reconquest, concluding that despite legislation prohibiting their practice, *conversos* such as Andrés Laguna and Juan Luis Vives continued to dominate until the eighteenth century which he attributes to the relationship between judaeo*conversos* and medicine, as they were one of the most active nucleii of the middle classes – the classic demographic for scientific activity. López Piñero further describes the case of Alonso de Castillo, a university educated *morisco* who entered the service of Philip II, in López Piñero, "Medical profession," 94.

Regional and time variations notwithstanding, Table 1 is intended to provide a general summary of the licensing qualification requirements for various categories of practitioner (mostly fomented in 1563 and beyond).

Unlicensed Spanish medicine

As already mentioned, the elite professionals worked alongside an array of licensed empiric specialists. Alongside these licensed practitioners existed an even bigger assortment of unlicensed, unexamined or unapproved medical practitioners, not all of whom can straightforwardly be considered illegal. The first recourse for most patients would have been household medicine or *medicina casera* passed down normally through female lines, and by people who never attempted to go public with their skills or make a profession out of it. Such household medical expertise among the laity was part and parcel of the household economy of the period and saw good general levels of basic knowledge towards self-sufficiency in most areas. Acknowledgment of this fact led to the diffusion of works seeking to educate folk knowledge of healing medicines – such as Pedro Hispana's *Thesoro de los pobres,* which was regularly reprinted after initial publication in 1519. Boundaries between professional and lay medicine blurred as popular remedies were borrowed by professional doctors and elite medicine was simplified in books aimed at the layman.[40]

No doubt word spread of those household medics who proved particularly proficient and they would gradually be urged to administer to the needs of others.

[40] See, Granjel, *Medicina española renacentista,* 136; and Wear, "Medicine in Early Modern Europe," 238-9.

Practitioner category	Qualification requirement					
	Male only	**Limpieza**	**Apprenticeship**	**University**	**Latin/literacy**	**Other/exam reqs.**
Protomédico	As for physicians					Crown selected
Physician	Y	Y	2 years	8 years	Latin	Examined by *protomédico*
Apothecary	Y	Y	4-6 years	N/A	Latin	25 yrs old, 500 ducados, good moral character. Examined by *protomédico*
Latin surgeon	Y	Y	4 years	4 years	Latin	Examined by *protomédico*
Romance surgeon	Y	Y	4 years	N/A	N/A	Examined by *protomédico*
Barber	Y	Y	4 years	N/A	N/A	Examined by *protomédico* - eventually
Phlebotomist	Y	Y	3-4 years	N/A	N/A	Exam to display knowledge of bleeding, lancing, treat ulcers and extract teeth.
Algebrist	Y	N	4 years	N/A	Not needed but interesting to note teaching aid exists	Exam to display knowledge of fracture and dislocation
Oculists, *hernistas,* those treating ringworm, caruncles and stones	Not specified	Not specified	Not specified	N/A	N/A	Can gain a license for their speciality but must always be assisting licensed doctor or surgeon
Bonesetter, midwife, *especiero* and druggist	N	Not specified	Not specified	N/A	N/A	They should be examined. For midwives this was changed in 1740.

Table 1. Qualification requirements for Spanish medical practitioners [41]

[41] Information drawn from: Fernández-Carrion and Valverde, *Farmacia y sociedad;* Fields, *Pestilence and headcolds;* García-Ballester, "Minorities and medicine," 11-32; García-Ballester, "Inquisition and minority medical practitioners," 156-191; Granjel, *Medicina española renacentista;* Lanning, *Royal protomedicato;* López Piñero , "Medical profession," 85-98; López Piñero, *Ciencia y técnica;* López Piñero, *Medicina, historia, sociedad;* Muñoz, *Recopilación;* Newson, "Medical practice," 367-391; Price, "Medicina española," 3-12; Siraisi, *Medieval and early Renaissance medicine;* and Andrew Wear, "Medicine in Early Modern Europe," 215-362.

These unlicensed practitioners will be considered in three categories – priests, midwives and *curanderos* – although it should be noted that these are generalised categories covering a range of different activities and that furthermore there was distinct overlap in the latter two categories, as will be explored. In societies where most people are familiar with spells, cures and magic it is particularly difficult to define specialist categories, as the notions of neighbourly help, private care and public acclaim become confused.[42]

Priests

Although up until the Middle Ages the physical care of the sick in Christian countries had largely become the domain of the church, the professionalisation of medicine that continued apace after the inauguration of the *protomedicato*, coupled with thirteenth century papal decrees, discouraged the clergy from practising medicine because it detracted from higher spiritual goals. This did not deter large numbers of the clergy from administering medical care. The lamentable state of medicine in Spain and lack of qualified doctors encouraged priests, already committed to Christian charity, to continue providing medical care to the poor and sick whom they often came across in their daily duties. Any Church and State objections to such medical interference by the clergy were not convincing given that state ideologies were often couched in religious terms, within which the authorities supported ideas that God caused sickness.[43]

[42] Willem J.C. de Blécourt, "Witch doctors, soothsayers and priests: on cunning folk in European historiography and tradition' *Social History* 19 (1994): 296.
[43] Siraisi, *Medieval and early Renaissance medicine*, 9; Wear, "Medicine in early modern Europe," 240-241, where he further mentions the fact that wars were often fought in the name of religion and there were regular public responses to disease, such as plague processions.

A religious orthodoxy that saw illness as divine punishment coupled with a "poorly defined frontier between the physician of the soul and the physician of the body," meant that the focus of this charity was on care that harnessed the healing power of God and the saints through prayer, rather than direct curing with medical treatment.[44] When they did seek to cure it was largely based on humoral principles garnered from the approved medical tracts of the time. Their literacy compared to the majority of the population put them at an advantage for reading medical treatises and herbals. These charitable works were carried out by the religious orders in a range of hospices and hospitals across the mainland.

Indeed, Spain was precocious in its establishment of hospitals, with the first founded in Merida in 580 AD, 200 years before any were set up in England. The first field hospitals were organised by Isabella during the Reconquest with 400 ambulances (beds on wagons).[45] It was during the fourteenth and fifteenth centuries that hospital foundation reached its apogée across Europe. Fundamental to these hospitals and at the root of patron motivation during this period was the Christian idea of charity – the notion that social problems could be alleviated with charitable acts – brought to the fore by religious philosophers, most notably Thomas Aquinas, during the Middle Ages, and bolstered by the charitable activity of monastic orders such as the Franciscans.[46] The impact of the Black Death in the mid-fourteenth century would have had a tangible impact on perceived need for both charity and healthcare given estimates suggesting that 30-60% of Europe's

[44] García-Ballester, "Inquisition and minority medical practitioners," 169. The involvement of the church in medicine also posed restrictions for progress, for example, regarding dissections, see Aitken, J.T., Fuller, H.W.C, and Johnson, D., eds., *The influence of Christians in medicine* (London: Christian Medical Fellowship, 1984), 32.
[45] See Hume, "Spanish colonial medicine," 219; Newson, "Medical practice," 372; and Siraisi, *Medieval and early Renaissance medicine*, 7-9.
[46] See Josefina Muriel, *Hospitales de la Nueva España, Tomo I: fundaciones del siglo XVI* (México: UNAM, Cruz Roja, 1990), 33.

population was decimated. It took 150 years for Europe's population to recover from the Black Death and it was, indeed, at the end of the fifteenth century that previous vigour for hospital foundation began to wane across Europe.[47]

In Spain, however, the zeal for hospital foundation did not abate at the end of the fifteenth century, rather it boomed during the sixteenth. The famous Hospital de las Cinco Llagas was founded in Seville in 1500 and a year before, in 1499, Ferdinand and Isabella drew up a sophisticated and ambitious program of hospital building on the burial site of St James of Compostela.[48] No doubt events at this time, not least the societal chaos brought about by the Reconquest, maintained healthcare anxieties and the perceived importance of charity at the forefront in Spain. Indeed, the boom in hospital foundation at this time was particularly prevalent in Moorish conquered cities such as Granada and Valencia where such social problems were felt most acutely. It was precisely from bearing witness to the plight of the "frightened *morisco*" in Granada that Juan de Dios, the founder of Spain's greatest hospitalier movement, was inspired to found his first hospital there in 1539.[49]

[47] For a good general overview of the history of hospital foundation in Europe, including patron motivation see Josefina Muriel, *Hospitales de la Nueva España, 1-33;* See also Solange Alberro, *Apuntes para la historia de la orden hospitalaria de San Juan de Dios en la Nueva- España- México, 1604-2004* (México: Colegio de México; Orden Hospitalaria de San Juan de Dios, 2005), 1-65.

[48] This hospital was to include 80-100 beds to house around 200 patients and included chapels, latrines, pantries and gardens. See Grace Goldin, "Juan de Dios and the hospital of Christian charity," *Journal of the History of Medicine* 33 (1978): 7.

[49] Goldin, "Juan de Dios," 2; and Alberro, *Orden hospitalaria de San Juan de Dios,* 45-65. Juan de Dios was the patron saint of nurses and the sick and by 1715, only 150 years after his death there were 256 hospitals in his name across Europe and the New World with 7,692 beds serving 96,365 patients a year. For more information on Juan de Dios and to understand his life and charitable works in context see Fray Juan Santos, *Cronología hospitalaria y resumen historial de la sagrada religion del glorioso patriarca San Juan de Dios. Aprobada por san Pio quinto, y confirmada por Sisto quinto, Paulo quinto, y Urbano octavo, pontifices maximos ...* (Madrid : Impr. de F.A. de Villadiego, 1715-1716).

In Juan de Dios' hospitals, care of the soul took explicit precedence over care of the body; his opening words to the poor arrivals was said to have been, "Brethren, give your thanks to God, who has waited so long for your penance. Think on your offences, for I wish to bring you a spiritual physician, to minister to your souls. For afterwards a remedy of the body shall not fail."[50] Juan de Dios accepted all-comers – Christian, Jews and Moors alike – based on the idea that their conversion would be facilitated through charity, an idea that was to be further exploited in a New World context.

Female practitioners and midwives

Up until the early medieval period female medical practitioners existed and were respected across Europe. It is known, for example, that they were accepted in to the Florentine medical guild and that in Naples between 1273 and 1410 there were 23 licensed female surgeons. Even when working as midwives they could expect a degree of professional respect, with Galen apparently approving the testimony of experienced midwives and nurses. Nor were they restricted to the treatment of women alone. Indeed, in Spain in 1394 the King praised Bevenguda of Valencia for "treating and curing many men and children of both sexes of serious conditions and illnesses."[51]

It seems, however, that the case of Bevenguda was an anomalous residue of bygone times since in the century preceding her commendation by the King,

[50] Goldin, "Juan de Dios," 19.
[51] Nutton, "Medicine in medieval western Europe," 170; Vivian Nutton, "Roman medicine, 250 BC to AD 200," in *The western medical tradition 800BC to AD1800*, eds. Conrad *et al* (Cambridge and New York: Cambridge University Press, 1995), 49. See also Muñoz, *Recopilación*, chap XVI, section II, 310, who notes that testimony from midwives had been allowed in Spain.

European medicine had become established as a secular science and profession and had become actively engaged in the elimination of female healers, not least through its stipulation of university qualification, from which women were banned. The Spanish authorities began narrowing the field in 1299 with an order to restrict the practice to those who had "learned the science of medicine" (which saw indiscriminate banning of women, Christians, Jews and Muslims who could not prove such learning) before exacting a law 30 years later specifically aimed at restricting female practitioners' sphere by legally confining them to the treatment of women and children, using only certain prescribed treatments. Essentially their banishment to midwifery as the only legitimate medical practice had begun.[52]

The role and status of midwives, however, and their legal standing in Spain during the sixteenth century is unclear and complicated, making it difficult to place them either within the licensed or unlicensed sphere. Strictly speaking they formed part of the unlicensed domain: calls by the Royal Assembly in Toledo in 1538 and Valladolid in 1558 for them to be subjected to an exam in order to qualify were rejected by Philip II in 1576. Despite rejection of this call to legitimise them through exam they did sit on the fringes of officially sanctioned medicine since they came under the jurisdiction of the *protomedicato*.[53] It is not even clear whether they were subject to blood purity rules, although given that midwives were sometimes expected to conduct emergency baptisms and their morality was, therefore, of paramount importance, one can speculate that their religious credentials were put under scrutiny. Thus they were neither illegal nor regulated.

[52] See Nutton, "Medicine in medieval western Europe," 170. See also Barbara Ehrenreich and Deidre English, *Witches, midwives and nurses: a history of women healers.* (The Feminist Press at City University of New York: New York, 1976), 13-17, who claim "the real issue was control: male upper class healing under the auspices of the church was acceptable, female healing as part of a peasant subculture was not."

[53] Granjel, *Medicina española renacentista,* 146.

While, on the one hand, this granted them great freedoms in their practice, in reality it bestowed them with no real legitimacy and thus no protection, leaving them defenceless in the hands of potentially whimsical authority decisions on the nature of their practice, not the fact of it. [54]

This proved particularly difficult in a European climate in which women in general, but particularly female healers and midwives, had increasingly come under suspicion for witchcraft from the church, bolstered by the new professionalisation of medicine. A Papal bull of 1484 which heightened suspicion regarding midwives by drawing attention to the fact that witches were deemed to primarily attack reproduction (the domain of the midwife) was compounded with the publication in 1486 of the *Malleus Mallificarum* – a text produced by Jacob Sprenger and Heinrich Kraemer accusing midwives of a variety of crimes linked to witchcraft. The reported use of baby fats and placenta residues in superstitious practices put midwives – with easy access to such goods – under the spotlight of superstition.[55]

The lowly social position of many midwives means that suspicions of superstitious practice, as defined by the authorities, were perhaps not entirely

[54] See Fields, *Pestilence and headcolds,* chap. 2 para. 48; and Wear, "Medicine in early modern Europe," 232.

[55] For an overview of witchcraft in Spain see Caro Barojoa, *World of the witches.* For a general overview of witchcraft in Europe see Geoffrey Scarre and John Callow, *Witchcraft and magic in sixteenth- and seventeenth-century Europe,* 2nd ed. (London: Palgrave, 2001). See also Ehrenreich and English, *Witches, midwives and nurses,* 14; Thomas Forbes, "Midwifery and witchcraft," *Journal of the History of Medicine* 17 (1962): 267-268; and Richard A. Horsley, "Who were the witches? The social roles of the accused in the European witch trials," *Journal of Interdisciplinary History* 9 (1979): 689-715. Miriam Greilsammer blames the decline of midwives on deliberate actions of the church and state, in Miriam Greilsammer, "The midwife, the priest and the physician: the subjugation of midwives in the Low Countries at the end of the Middle Ages," *Journal of Medieval and Renaissance Studies* 21 (1991): 285-329. For an examination of the role of hallucinogenic drugs in European medicine see Michael J. Harner, "The role of hallucinogenic plants in European witchcraft," in *Hallucinogens and shamanism,* ed. Michael J. Harner (New York and Oxford: Oxford University Press, 1973), 127-150.

unfounded. Alongside aiding in childbirth, midwives' patients probably often called on them to perform a range of other duties, some of them straightforward and some, no doubt, more magical – ranging from treatment of cases of evil eye to more magical love sorcery. In such a situation, "ignorant, unskilled, poverty-stricken, and avoided as she often was, it is small wonder that the midwife could be tempted, in spite of the teachings of the Church, to indulge in superstitious practices and even in witchcraft."[56] If discovered or accused then such midwives could be labelled *hechiceras* (witches), for which the penalty was high but otherwise such activities could deliver augmented income and greater status.

Despite abounding cultural suspicions many midwives were able to gain legitimacy and great critical acclaim. Indeed, even witches were not always viewed in a bad light. Luis Granjel points towards a host of literary references from the time that positively revere the abilities of such women. He gives the example of La Celestina who was said to cure childhood and female complaints and to demonstrate the curative virtues of various plants with great skill.[57] The practical knowledge acquired by female healers, whether deemed witches or not, would have been considerable. When compared with contemporary elite medical learning, sometimes based on astrological prognoses, it is little wonder that even the great and renowned men of medicine of the day were known to consult them; in 1527 Paracelsus reportedly burned his text on pharmaceuticals, confessing that he "had learned from the Sorceress all that he knew."[58] It is finally worth noting

[56] Forbes, "Midwifery and witchcraft," 264-265.
[57] Granjel, *La medicina española renacentista,* 136-140.
[58] Ehrenreich and English, *Witches, midwives and nurses,* 17.

that there is reference among the compilation of laws from Spain that midwives were not always women, but that some *parteros* (male midwives) also existed.[59]

Popular healers and curanderos

Today the term *curandero*, literally meaning 'healer,' conjures up images of more supersticious practitioners. The focus has been on *curanderos* employing magical practices, astrology, charms and spells based on ancient folklore and customs such as belief in the evil eye (*aojamiento)* sometimes mixed with Christian prayer and the use of relics. In such cases *curanderos* were often referred to as witches, sorcerers or magicians and their practices were viewed as heretical as it was thought to be underpinned by devil worship.[60]

It is certain that the practices of many *curanderos* did sit outside the realm of sanctioned healing. Despite this fact, attitudes towards *curanderos* were ambiguous, and the response to such superstitious practices mixed. It seems that detractors often took umbrage not with the *curanderos'* beliefs or practices themselves, but with the people conducting the treatment or their specific methodologies. As with the elite in-fighting this once again seemed to constitute a territorial battle rather than an ideological one, which served to blur the boundaries of acceptable and unacceptable beliefs and practices.[61]

[59] Muñoz, *Recopilación,* chap XVI, sec. II, 308-312.
[60] Newson, "Medical practice," 373.
[61] Blécourt, "Witchdoctors, soothsayers and priests," 289, comments that it is little surprise that magical healers were often accused of witchcraft because they aroused hostility among powerful groups with monopolistic tendencies, particularly with doctors, lawyers and the church. See also Scarre and Callow, *Witchcraft and magic,* 3, 17; and Anastasio Rojo Vega, *Enfermos y sanadores en el Castilla del siglo XVI* (Valladolid: Universidad de Valladolid, 1993), 39-49, where he mentions that in 1550 a physician called Francisco López de Villalobos complained that often even in the royal court the services of empirics are sought over his.

In the case of both the evil eye and astrology, for example, it seems that many medics and anti-superstitious writers conceded the existence of the former and merits of the latter.[62] In the case of astrology there was a long history stretching back to the Hippocratic corpus of implicating weather conditions, seasons and the movement of planets and celestial bodies in illness outcomes, with certain events and planetary movements believed to be linked to specific illness episodes and critical illness days. Doctors often employed medical astrology in their practice and in his 1589 *Diálogos* Lorenzo Cozar deemed astrology as "a fundament of true medicine."[63]

Perhaps most clearly the ambiguity is seen through attitudes towards *curanderos'* treatment of the devil and demonic possession; indisputably a superstitious belief by humoral standards, though, nevertheless, a reality accepted by the majority. Indeed, the accepted link between illness and sin was hard to break. Respected literary works, in examining the phenomenon of the devil and witchcraft and their role in disease and cure, leant credibility to the idea. The church itself accepted the concept but believed that curing could only be done through divine intervention; the distinction was drawn between good exorcisms as conducted by priests and bad ones as carried out by superstitious necromancers. This simply served to bolster the idea of some forms of valid witchcraft, albethey religious.[64]

There seems little doubt that magical practices abounded in these early modern communities given the role that despair and frustration, particularly when derived

[62] Granjel, *Medicina española renacentista,* 142-143, discusses the role of 'the evil eye' in Spain and mentions the fact that there were physicians, such as Dr. Antonio de Cartagena in 1529 who believed in it as a possibility and included it in his book entitled, *Liber de Peste.*
[63] Nutton, "Medicine in medieval western Europe,' 158. Granjel, *Medicina española renacentista,* 143-146, says that some doctors attempted, unsuccessfully, to get astrology included in the official medical training via a 1571 petition.
[64] See Granjel, *Medicina española renacentista*, 146-149.

from extreme health dilemmas such as plague and warfare, are agreed to have on recourse to magic.[65] Indeed, magic would have abounded in all social classes, although the upper classes and elite medics, not subject to the same derision and persecution, knew it by other names such as alchemy and astrology.[66]

While it is certainly true that the label *curandero* was used to describe magical or superstitious practitioners, or as a derogatory phrase used by licensed doctors to describe their unlicensed competition, the connotations of the term were not necessarily always negative. Instead it seems that it was also often used as a non-judgmental generic shorthand to describe the multitude of lower- and un-ranked practitioners who could not be easily placed into any of the specific categories considered above. An interesting demonstration of the more benign application of the term *curandero* comes through consideration of notary cases from sixteenth century Valladolid, which refers to a variety of male and female empirics seeking license as *curanderos*. The services being offered are wide-ranging and diverse: Marcos de Castro is a *sacamuelas* (tooth puller)*;* Catalina de Castresana a specialist in women's sickness; Alonso de Argüello a possessor of secret powder to cure alcoholism; Aparicio de Zubío the inventor of a special medicinal oil, Beatríz de los Ríos is an oculist; there is a *morisco* who cures ringworm; and two women called María Hernández: one a bonesetter and one a midwife, bonesetter and applicator of *bízmas* (special dressings), among others. If one can assume that these *curanderos* were presenting for licensing on the basis that such an end was not considered a fantastical outcome, this list first provides a useful insight into the diverse range of medical services that empirics could hope to be licensed

[65] See Caro Baroja, *World of the witches*, xiv, 8.
[66] Horsley, "Who were the witches?" 700.

to provide. Crucially, however, while the documents do not reveal whether the candidates received license or not, it does evince that the term *curandero* was used to refer to pre-licensed empiric specialists (from which point perhaps they were referred to by the title of their chosen professional specialisation) and thus that it did not always carry negative or illicit connotations.[67]

The truth is that because of the diversity in patients' beliefs regarding sickness causation many patients would have employed more than one type of practitioner, even when treating only one complaint. Whether tacitly revered and approved or reviled and persecuted it seems clear that most would have relied on a combination of the succour offered by hospitals run by religious orders and popular healers. This can in part be attributed to pragmatic factors; popular healers counterbalanced the lack of medical services available to large sectors of the population and continued to thrive given "failures in academic medicine; the existence of chronic and incurable diseases, and the cultural vacuum following repressive measures."[68] However, to attribute the success of the popular sector solely to necessity is to ignore a host of other factors, not least cultural preferences for such curing methods.[69]

Aztec medicine

For the Aztec[70] instrumental scientific experimentation and practice were conducted within the context of religious and symbolic explanations that also

[67] Anastasio Rojo Vega, *Enfermos y sanadores,* 41-44, who has gone on to research the backgrounds of these characters where possible.
[68] García-Ballester, "Academicism versus empiricism," 249.
[69] See also Newson, "Medical practice," 369; and Wear, "Medicine in Early Modern Europe," 238.
[70] As outlined in Chapter 1, considerations of indigenous medicine prior to conquest will be termed 'Aztec medicine,' while those from the colonial period will refer to Indian medicine.

viewed the body as a mirror of the universe, in which the head was equated with the upper heavens, the heart with the lower heavens and the liver with the underworld, each with its own animistic force (*tonalli*). Thus the Aztecs adopted an holistic approach to medicine and healthcare combining and catering to all of these spheres with "an inextricable mixture of religion, magic and science."[71]

It is impossible to consider Aztec medicine without understanding that it sat within a worldview in which religion played a central role. It is here worth noting briefly that although religion held a similarly central role in the Spanish worldview the key difference between the two societies was that, at this time, the Spanish authorities were trying to professionalise and secularise science and medicine, and thus separate it from overriding religious beliefs. Therefore, although religion certainly informed the moral philosophy of the time and permeated medical beliefs and practices in Spain, there was a concerted push for scholarly learning to override religious explanation. Such a distinction or separation was not true in Aztec society, where religious and scientific explanations were not separated, rather religion was seen as a critical part of any understanding.

At the root of the Aztec medical system was a belief that illness was ultimately in the lap of the gods who had the power to both cause and cure sickness. Ironically the same god who was seen to mete out punishment via disease was also the patron of the physician and healer.[72] Any treatment had to take the relevant deity into account such that upon discovering illness, the reason for it needed to be

[71] Soustelle, *Daily life of the Aztec,* 191.
[72] Emmart, *Badianus manuscript*, 42.

established, which was often done by divination.[73] Alongside these religious bases, however, were the application of more recognizable therapeutic methods such as bleeding, massage and bathing. Indeed, the regular use of baths, notably in the field of obstetrics both before and after delivery meant that unlike in contemporary Europe, Aztec gynecologists and midwives attempted to maintain asepsia.[74] Aztecs also studied and knew well the properties of plants and minerals, and, often, achieved the results they required from their application.[75]

It has been suggested that such strong emphasis was placed on correct medical procedure by the Aztec emperors that all legitimate medical practitioners of various specialisations were affiliated members of a medical society.[76] Specialisation ranged from surgeons to internal physicians who cured with internally ingested medicines, herbalists to bleeders. Nahuatl vocabulary from the time bears further testimony to the range of their medical knowledge. Although it is not known whether the Aztec conducted strict dissections, Nahuatl physical anatomical vocabulary attests extensive knowledge of the different external and internal components of the body. They had words for internal and external body parts (from uterus – *cihuayotl*, to urinary canal – *axixpiaztli*) to bodily functions from breathing to radial pulse. Such in-depth knowledge was no doubt enhanced by their frequent disembowling sacrificial techniques which would have regularly

[73] Soustelle, *Daily life of the Aztec*, 194.
[74] See, for example, Schendel, *Aztec herbs to betatrons*, 53.
[75] See Davidson and Ortiz de Montellano, "Aztec wound remedy," 149-161; Ortiz de Montellano, *Aztec medicine*, 162-192; Ortiz de Montellano, "Empirical Aztec medicine, 209-215; Soustelle, *Daily life of the Aztec*, 192.
[76] González-Ulloa, *Medicina en México*, 12.

exposed members of Aztec society to the inner viscera and workings of the body.[77]

Medical knowledge and treatment was comparatively sophisticated, particularly in the field of surgery, in which the Aztec excelled. They had successfully mastered the art of trepanning, suturing of delicate facial wounds using human hair and ligatures to stem blood flow (which was only perfected in Europe in 1575 by Ambroise Paré). There was also an extensive vocabulary relating to surgical practice which differentiated between varying wound types.[78] Furthermore, it seems that Aztec doctors understood that external ailments (like sores and ulcers) could be the result of internal disturbances. As a result their treatments often involved purging and dressing wounds.[79] It has also been suggested that they used the equivalents of hospitals.[80]

[77] Sahagún, *Florentine Codex*, Book X, chap. XXVII, 96-138, "which telleth of the intestines, and of all the internal organs, and of all the external organs [and] of the joints pertaining to men and pertaining to women," shows Nahuatl words for different types of skin and skin-tone to different qualities of flesh, to different parts of the body; from vulva to trachea to soles of the feet and organs. There are also physiological words like digestion (tlatemoniliztli); breathing (neihiyotiliztli); circulation (tetecuicaliztli); radial pulse (tlalhuatl ytetecuicaca), and secretions like bile, semen, excrement and nasal mucus (chichicatl, tlacaxinachtli, cuitlatl and yacacuitlatl). See also Francisco Flores, *Historia de la medicina en México*, vol. I, 157-161. For specialisations see also Ocaranza, *Historia*, 48.

[78] Sahagún, *Florentine Codex*, Book X, chap. XXVIII, 139-163. See also González-Ulloa, *Medicina en México*, 16.

[79] Warwick Bray, *The everyday life of the Aztecs*, (London: Batsford, 1968), 184.

[80] There is a debate over whether or not Aztecs had hospitals prior to the arrival of the Spanish. Flores, *Historia de la medicina*, vol. I, 117, claims that the Aztec had hospitals for the military wounded and for contagious diseases. Carmen Venegas Ramírez, *Régimen hospitalario para indios en la Nueva España* (México: Instituto Nacional de Antropología y Historia, Departamento de Investigaciones Históricas, 1973), 9, supports this view. Miguel León Portilla, "Comunidades mesoamericanas ante la institución de los hospitales para Indios," in *Medicina novohispana siglo XVI: historia genera de la medicina en México: Tomo II*, coords. Gonzalo Aguirre Beltrán and Roberto Moreno de los Arcos (México: UNAM, 1990), 218-219, however, thoroughly analyses the possibility that hospitals existed prior to the conquest. Although he acknowledges that Alonso de Molina's *Vocabulario* uses the word 'cocoxcalli' as a 'casa de enfermos/enfermeria/hospital' he cannot find any other reference to it documented anywhere else. At a push he thinks they may have had places in Calpullis for the sick who could not stay with their relatives.

Studies of the *Florentine Codex* strongly suggest that before the arrival of the Spanish, the Aztec made distinctions, although blurred, between good and bad and official and unofficial health workers and health practices.[81] Such categorisations have certainly passed through a Spanish filter, which leads some scholars, not least Aguirre Beltrán to question their validity:

> The separation between good and bad medicine, made by the celebrated friar [Sahagún], do not correspond in any way to the value system of the Indians; in theirs, good medicine is that which provides group security and bad, that which augments anxiety.[82]

While such criticism that such views are tempered through a Spanish filter are certainly valid, these criticisms dispute the grounds on which indigenous value distinctions were made and not the *fact that* indigenous distinctions between ideas of 'good' and 'bad' existed.

Furthermore, it seems that medical specialisation existed amongst the Aztec practitioners, whose vocabulary distinguished between, for example, surgeon (*tetecqui*), phlebotomist (*tezoc*), midwife (*tlamatqui*) and apothecary (*papiani*).[83] Therefore, at the point of conquest, the indigenous populations were formally distinguishing between different types of practitioners and specialists and they certainly already had, if not strict notions of formal and informal, a sense of

[81] Sahagún's reports that, "The good physician [is] a curer of people, a restorer, a provider of health. The good physician [is] a diagnostician, experienced – a knower of herbs, of stones, of trees, of roots. He has [results of] examinations, experience, prudence. [he is] moderate in his acts. He provides health, restores people, provides splints, sets bones for them, purges them, gives them emetics, gives them potions; he lances, he makes incisions in them, stitches them, revives them...The bad physician [is] a fraud…a killer with his medicines, a giver of overdoses, an increaser [of sickness]; one who endangers others, who worsens sickness…He kills with his medicines…", in Sahagún, *Florentine Codex*, Book X, chap. VIII, 30. It is worth noting that the *Florentine Codex* lists the qualities and differences expected of male and female physicians.

[82] The original reads, "la separación entre medicina buena y mala, que hace el célebre fraile, no corresponde en modo alguno al sistema de valores indígenas. En él, medicina buena es la que da seguridad al grupo propio; mala, la que aumenta la ansiedad," in Aguirre Beltrán, *Medicina y magia,* 47.

[83] Guerra, "Aztec medicine," 321. Sahagún, *Florentine Codex*, Book X, chap.VIII, XIV, XXIV, clearly differentiates between, for example, midwives, physicians and 'the medicine seller/the man on the reed mat' who is "a knower of herbs, a knower of roots, a physician."

sanctioned and unsanctioned or good and bad medicine. Indeed, it is logical to assume that the true medical situation in any society as complex and regulated as the Aztec's on the eve of conquest would have incorporated more than one medical reality.

Of all their medical achievements it is perhaps in the field of herbalism that the Aztecs have received most critical acclaim. Indeed, such was their knowledge that their construction of herbal medicines was not just of simples but of complicated formulas and mixtures. Botanical research was considered such an integral and important part of medicine, that to this end Montezuma I established botanical gardens at Huaxtepec long before the first European examples emerged. Here at what was effectively a "governmental medical research laboratory" plants from all over the empire were grown and studied by government funded physicians.[84]

African medicine

Before giving a summary of African medicine on the eve of the Spanish conquest of the New World it is first important to highlight the limitations of any such overview. First and foremost is the fact that very little has been written about it. Most Africans passed on information via the oral tradition, leaving no written records. Furthermore, the nature of colonisation conducted in Africa generated less motivation to record and understand customs from the continent. This paucity of historical information impacted on subsequent scholarship and today there is still a noticeable dearth of historical information compared to other regions of the world. [85]

[84] Schendel, *Aztec herbs to betatrons,* 38. See also Emmart, *Badianus manuscript*, 71-81.
[85] See Aguirre Beltrán, *Medicina y magia,* 59.

Another complication is that the Black slave population brought into the New World came from diverse regions of Africa, each, no doubt, with their own specific medico-cultural practices.[86] To speak then of the import of African medicine is to blur any such regional distinctions that may have existed. Furthermore, historical observations of African medicine tend to base conclusions on modern findings, not least on evidence extant in the New World. There are inherent dangers in such backwards projection, of which the researcher should be aware. As Robert Voeks comments, such methods are fraught, not least because not only have these systems survived from disparate source regions but furthermore they have adapted over time according to the specific political, social and economic factors of the regions in which they found themselves.[87]

Given that this is effectively a preliminary study, it is simply not practical to undertake a thorough examination of region specific medical practices throughout Africa, however it is certainly an area of research that merits further consideration in the future. Mindful of the limitations outlined above, however, it does seem that certain key elements permeated African medical traditions, such that it can be claimed that "notwithstanding the diversity of source regions, certain fundamental features characterise most African-American healing traditions."[88] It is these key features – namely religion, magic, the use of charms and herbalism – that will be outlined for the purposes of the current research.[89]

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[86] See, George Eaton Simpson, *Black religions in the New World* (New York: Columbia University Press, 1978), 58-61.
[87] Robert Voeks, *Sacred leaves of Candomblé: African magic, medicine and religion in Brazil* (Austin, Texas: University of Texas Press, 1997), 2.
[88] Robert Voeks, "African medicine and magic in the Americas," *Geographical Review* 83 (1993): 69, comments that wherever Yoruba or Dahomey slaves were present (roughly the West African region from modern day Congo through to Nigeria and Benin), their traditions dominated.
[89] This is an incredibly simplified list. Simpson, *Black religions,* 61, for example, highlights key African religious and cultural elements to have been incorporated into the belief systems of the

Any summary of African medicine should draw attention from the outset to the fact that in African healing, magic and religion were intrinsic and inseparable elements and illness was believed to be a reaction to external, supernatural forces. Attempts to understand and outline African medicine, as with the other cultures under consideration must, therefore, understand the religious belief system within which it sat; that the fundamental features that characterise African healing traditions include "theories of causation related to the spirit realm."[90]

Gonzalo Aguirre Beltrán suggests that in African beliefs the personality divided into four parts, broadly consisting of: the physical body (that disappears after death); life force/vital energy (understood as breath and conscience by Africans); subconscious (the part that leaves the body when sleeping or fitting); and death spirit (the form the ego takes along with the other elements less the physical body after death). Although it seems that this division into four was not necessarily always the case, it certainly does appear that West Africans generally believed that the human personality divided into multiple 'souls,' incorporating a minimum of two; one that left the body when sleeping as protection, and one that functioned similarly to the Christian notion of a soul.[91]

Ancestral cults were particularly important as African families were (and often still are) believed to be comprised of the dead as well of the living. Indeed, the

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New World as including, the names and characteristics of African 'deities,' concepts of 'soul,' ritual objects, drum rhythms, dancing, spirit possession, the ritual use of herbs, stones and water, animal sacrifices, utilisation of spirits of the dead and the intervention of supernatural beings in human affairs.

[90] See Voeks, "African medicine and magic," 68-69; and Richard Onwuanibe, "The philosophy of African medical practice," *A Journal of Opinion* 9 (1979): 25-28.

[91] Evidence suggests that Africans did not have great anatomical knowledge although they certainly distinguished between the main organs and their functions, see Aguirre Beltrán, *Medicina y magia*, 61-62. Simpson, *Black religions*, 68, denotes this division into four as particularly indicative of the system applied to adult Dahomian males.

dead often gained greater powers than they had in life, including the ability to see and hear what their living relatives were experiencing. They further provided their living relatives with a pathway through which to contact the pantheon of deities. Importantly these dead ancestors were capricious. If the living adhered to traditions they would be blessed but if they strayed then plagues, disaster and illness would be sent upon them.[92]

Understanding such views is essential to understanding the African approach to medical treatment. Essentially behaviour lay at the root of illness and the transgression of social norms was key; illness was therefore considered a "breach of universal moral law by the victims."[93] Thus sin and religious and social transgressions were believed to play a key role in illness, and sickness was an indicator of guilt. In this way, the first step to take towards healing illness was an examination of your conscience; Who have I offended? Which god? What have I done wrong? Using divination healers looked at *why* a patient was suffering, gauged by spiritual offences or lack of respect for ancestors and not *how* as is common with modern scientific medicine.[94] Once this was done, specific remedies to placate the offended party could be applied.

The African doctor's job was to conduct such diagnosis in order to prescribe the correct remedy. But because of the religious backdrop it is almost impossible to separate the role of doctor in Africa from that of priest.[95] Alongside the more recognisable tasks of curing the sick and manufacturing medicines jobs falling to African doctors appear to have included tasks as diverse as mask manufacture,

[92] See Aguirre Beltrán, *Medicina y magia,* 61-62; and Simpson, *Black religions,* 95.
[93] Onwuanibe, "Philosophy of African Medical Practice," 25.
[94] Voeks, *Sacred leaves of Candomblé,* 3.
[95] See Simpson, *Black religions,* 70.

divination, direction of social ceremonies, dream and omen interpretation, consultation with ancestors and rain-making. Doctors were hence not simply concerned with an individual's well-being on a case-by-case basis but rather with the general welfare of the group. When any individual presented themselves as sick this represented a potential threat to the health of the entire group if the illness was deemed to stem from a deity's discontent.[96]

New doctor initiates were, in fact, drawn from the ranks of those who presented themselves as sick. If the sickness was deemed to be the result of possession by an ancestral god then it was generally accepted that that individual had been chosen by the god as an instrument through which to communicate with the world of the living; the patient could refuse to accept this calling at his own peril or accept the role bringing peace, health and a change in status to initiate (or Yawo in Yoruba). Training for initiates was a long disciplined procedure involving denial and restricted behaviour including food and sleep deprivation, alongside the application of purgatives, vomitants and cleansing baths as methods of deep cleansing. Importantly initiates were trained to correctly interpret their visions from trance states (induced with drums and dance, and sometimes drugs).[97] Spirit possessions by gods or dead ancestors, where messages were passed on, formed a central element of these practices, and appear to have been common across West Africa.[98]

In African practices the use of charms and amulets also appears to have been important. Ritual specialists sold charms and protective amulets (minski) to

[96] See Aguirre Beltrán, *Medicina y magia,* 63-64; and Onwuanibe, "Philosophy of African medical practice," 25-28.
[97] Aguirre Beltrán, *Medicina y magia,* 65-67.
[98] Simpson, *Black religions,* 17-18.

protect the wearer, and gri gri pouches in the Congo. In West Central Africa, pregnant women wore amulets filled with hair, claws and feathers to give their unborn children certain desirable traits.[99]

The role of plants in African medicine was central and again the herbal element of their medicine was inextricably linked with the spirit world, with each orisha (spirit) having their own medicinal healing domain and associated plant pharmacopoeia (such that those associated with Elegua/Echu who is renowned for being naughty and capricious are often spiky plants). Furthermore as mentioned earlier the essential first component of any healing was to placate the gods since it was not believed that the plants were innately capable of healing but that they were imbued with powers by deities, activated once correctly identified and placated. [100]

As in Europe and Asia, alongside looking to deities for guidance on plant use, Africans were directed to the potential therapeutic benefits of certain plant species according to the ancient Doctrine of Signatures whereby "species with morphological features similar to human body parts were believed to be effective agents in treating their ailments."[101]

[99] Jean Barbot, *Barbot on Guinea*, 2 vols, (London: Hakluyt Society, 1992), Vol. 1 85-95, cited in Joan Bristol, "From curing to witchcraft: Afro-Mexicans and the mediation of authority" in *Journal of Colonialism and Colonial History* vol. 7 no. 1 (2006): 5.
[100] See Aguirre Beltrán, *Medicina y magia*, 63-65; Luz Adriana Maya Restrepo, "Botánica y medicina: africanas en la Nueva Granada, siglo xvii" *Historia Crítica* 19 (2000): 28; and Voeks, "African medicine and magic," 71-72.
[101] Voeks, "African medicine and magic," 73, although he speculates that this was possibly an Old World import.

Looking to the New World

In examining the possibility of convergence between Aztec and Spanish medicine, Clara Kidwell talks of "communicable concepts" and of their significance for understanding the potential for fusion and exchange of information. Kidwell narrows such concepts down to just two – herbalism and pragmatism. This is a view that has largely been shared by scholars until the present day who see the formal manifestations of Aztec and Spanish medicine – with the Spanish firmly rooted in the humoral traditions of Greeks as opposed to the Aztec which was "deeply embedded in the matrix of a culture that was highly religious in nature" – as too disparate to provide space for much overlap.[102]

It is certainly true that there were obstacles present to assimilation or understanding of each other's medical systems. Forgetting for a moment the clear differences that each race presented to the other, the precise nature and structure of the religions and worldviews, which in turn informed disease explanations and approaches to healing, were also indisputably different. Furthermore, it should not be overlooked that the specific disease climates that the Spanish and Aztec were used to were different. Whether standards of cleanliness and asepsia were higher in Aztec society than European or not, more importantly, prior to the Conquest – which famously brought with it a host of Old World diseases that ravaged the local population – there were very few highly contagious diseases in the New World.[103] Reaction and resistance to such diseases would have informed opinions

[102] Kidwell, "Aztec and European medicine," 20-31. See also W.E. Court, "The doctrine of signatures or similitudes," *Trends in pharmacological sciences* 6 (1985): 225-227.
[103] The current study will not focus on the disease environment or epidemics of the New World. For a useful overview of research to date, see Brooks, "Impact of disease," 127-165. For information on specific disease histories see the relevant sections of Kenneth F. Kiple, ed.

from early on about the efficacy of each others' medical systems. The various differences and obstacles to assimilation will be considered later and throughout the current study. For the moment, however, it is useful to appreciate that alongside differences were some remarkable similarities which, when combined with the desperation generated by the contact situation, would have aided and informed inter-racial reception to the new medicines and medical systems.

As previously suggested, views limiting acknowledgment of the potential for exchange are largely a result of the fact that the type of Spanish medicine considered to have been taken to the New World has been understood as merely the sum of its formal licensed parts. As the first half of this chapter demonstrated the popular sector of medicine in Spain, which dominated, has been largely ignored. The notion of "communicable concepts" is useful, but only if the systems being compared are understood as nuanced totalities. When considered in this light it is apparent that there is crossover between all three medical cultures beyond mere herbalism and pragmatism, beginning even with the religious underpinnings of the belief systems of all three cultures which informed their entire worldview, including medicine. While the religions were, as mentioned above, indisputably different, as Voeks notes, there were comparable elements:

Cambridge world history of human disease (Cambridge: Cambridge University Press, 1993); For a more detailed analysis of disease and epidemics in the New World see David Noble Cook, *Born to die: disease and New World conquest, 1492-1650*, 2nd ed. (Cambridge, Cambridge University Press, 1998). For studies of the impact of disease and epidemics in Mexico see Jean-Pierre Berte, "Les epidemies au Méxique au XVIe siècle," in *Asclepio 35* (1983): 257-263; and Hanns J. Prem, "Disease outbreaks in central Mexico during the sixteenth-century," in *Secret judgments of god: Old World disease and colonial Spanish America,* eds. David Noble Cook and George W. Lovell, (Norman, University of Oklahoma Press, 1991), 20-48. For the indigenous view of and response to disease see Elsa Malvido, "Representaciones y textos de la primera pandemia de viruela en los códices mexicanos," in *Annuario Estudios Americanos* 64 (2007): 2-25; and Carlos Viesca Treviño, "Antecedentes para el estudio de la clasificación de las enfermedades en la medicina Náhuatl prehispánica," in *Estudios de Cultura Náhuatl* vol. 30 (1999): 183-201. For an overview of the origins of syphilis and smallpox see Sheldon Watts, *Epidemics and history: disease, power and imperialism* (New Haven and London: Yale University Press, 1997), 84-121.

> Roman Catholic liturgy had some structural similarities with African [and Aztec] religions: ancestor worship, elaborate ritual and offerings, and, most importantly, polytheism. For Roman Catholics polytheism meant devotion to the hagiology of saints; for Africans [and Aztecs], faith in the power of a pantheon of deities.[104]

Furthermore, ancestor worship, although strongest in African religion, was also present in all three. Indeed, even the trance state required by both Aztec and African doctors in order to communicate with their gods is not unknown in Catholicism where a similar state is referred to as mystic ecstasy.[105]

Though different, within the religious beliefs all three cultures, to varying degrees, was the belief in a causal link between illness and sin, or illness and the transgression of religious taboos or witchcraft from an enemy. Thus all three sought cures through appeasement of the gods or discovery of the witch. This was even the case in Spain where, although the State was beginning to seek division between scientific and religious explanations, and the Church had moved against hagiolatry[106] as its attitudes to sorcery had changed during the Middle Ages, the practice had merely been driven underground to join other magico-religious lore from a folk medicine which was particularly prevalent among the lower classes of society in Spain. Indeed, it was the exploitation of precisely such similarities which was to form part of the Spanish strategy for conversion of the Indians in the New World.

On top of these religious beliefs were the prevalent beliefs in witchcraft and magic displayed again in all three cultures. Comparisons between Aztec and African medicine are even more evident since in both divination was used by

[104] Voeks, "African medicine and magic," 67.
[105] Aguirre Beltrán, *Medicina y magia*, 63; Voeks, "African medicine and magic," 73.
[106] The invocation of saints to help a sick person and the associated use of votive offerings.

practitioners operating between the material and spiritual worlds, often with the use of hallucinogens enabling a trancelike state which facilitated communication with spirits to gain guidance on how best to cure. The deities worshipped were different and the methods also differed, with Africans putting more emphasis on the use of potions and wearing of amulets, however, in administering the cure both utilised fasting, massage, bathing, sucking and the use of birds and ritual plants, sometimes hallucinogens.[107] Indeed, George Eaton Simpson suggests that the simultaneous existence of similar magical elements across cultures, not least the use of charms, reinforced its use in the cultures once they came into contact.[108]

In the case of Spain, nor is it necessary to merely survey the popular medical domain when searching for supernatural beliefs and directly communicable practices and beliefs. In the same way that the Aztecs used the bones of prehistoric mammoths believed to be the remains of giants in their remedies, European doctors used dust from Egyptian mummies in their compounds.[109] Both Aztec and Spanish physicians used bezoar stones and other stones, such as emeralds, to heal, often in a sympathetic context, thus Nicolás Monardes incorporated the "stone of the blood," as employed in New Spain, in his listed therapies:

> The blood stone is a kinde of Jasper of divers coulleurs somewhat darke, full of sprinkles, like to blood…The use thereof, both here and there, is for all fluxe of blood, of what partes so ever it bee, of the Nose, or of the Menstrues, or of the Piles, and of Woundes. The stone must be weate in colde water, and the sicke manne muste take hym in

[107] Aguirre Beltrán, *Medicina y magia,* 36-65; Hernández-Sáenz and Foster, "Curers and their cures," 41-42; Maya Restrepo, "Botánica y medicina," 39-42; and Newson, "Medical practice," 373-374.
[108] Simpson, *Black religions,* 116.
[109] Schendel, *Aztec herbs to betatrons,* 64.

> his right hande, and from tyme to tyme weate hym in cold water…Of this stone we have seen greate effectes, in staunchying of blood.[110]

Furthermore, as the Aztecs believed the human body to mirror the universe, so too did the Spanish incorporate horoscopy within their formal medicine, relating zodiac signs to different parts of the body and maladies as the Aztecs associated celestial regions and *nahualli* animal totems with their own bodies. Although the concepts making up the universe were radically different, the organising principle of that universe as reflected in the corporeality of humans, with each part further associated with a cosmic force and symbol, was shared across Spanish and Aztec cultures (see figures 1 and 2).[111] Spanish folk medical practice and the incorporation of supernatural elements in both formal and informal medicine provided crucial overlap between Aztec and Spanish belief systems and, to a lesser degree, Spanish and African.

It is also worth considering the fact that the Aztecs belief in the duality of the universe, extended to their views on the human body, with health and happiness the result of balanced diets and behaviour, within which, achieving balance between diametrically opposed pairings like hot/cold, dark/light and

[110] Monardes, *Joyfull Newes*, part 1, 44. Sahagún, *Florentine Codex*, Book XI, chap. VIII, 228, also mentions this stone, the *eztetl* (from a combination of the word *eztli*, 'blood' and *tetl*, from 'stone) because it appears blood spattered, which reportedly "arrests the menses or perhaps quiets the pain of a blow when much blood comes out." Nicolás Monardes was a doctor and merchant whose book, *Historia medicinal de las cosas que se traen de nuestras Indias Occidentales*, published in 1565, was the first work devoted to study of the New World medicines. For a brief and thorough overview of Monardes' life and work see, Daniela Bleichmar, "Books, bodies and fields: sixteenth-century Transatlantic encounters with New World *materia medica*," in *Colonial Botany: science, commerce, and politics in the early modern world*, eds. Londa Schiebinger and Claudia Swan (Philadelphia: University of Pennsylvania Press, 2005), 84-9.

[111] See Emmart, *Badianus manuscript*, 45.

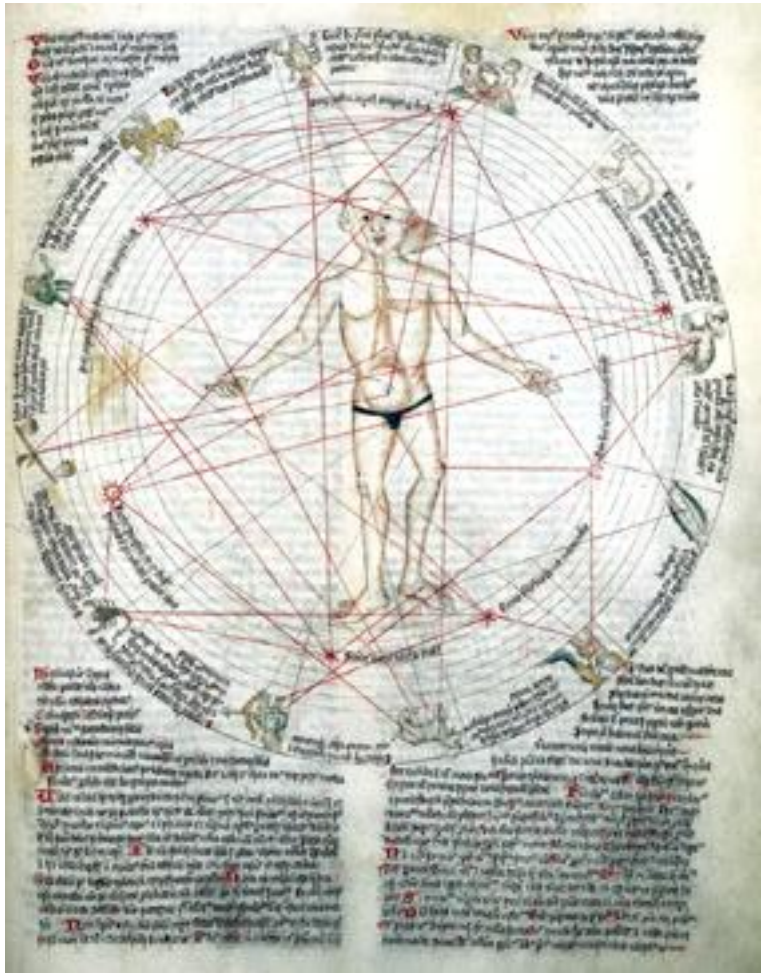

Figure 1 ‘Zodiac Man’, c.1420-1430

In ‘The Apocalypse manuscript’ Wellcome Institute, London

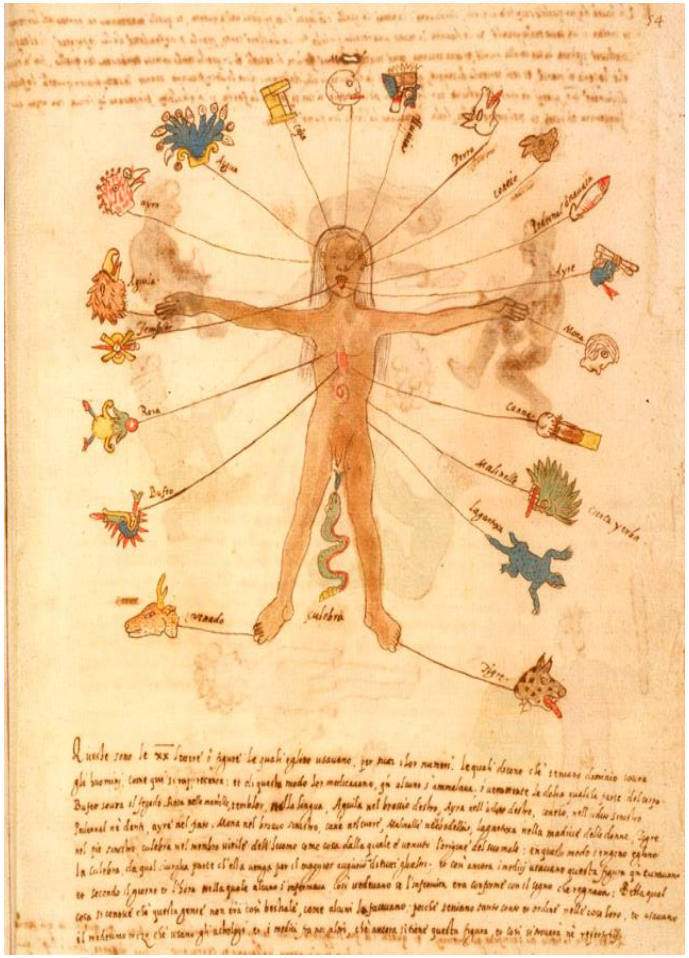

Figure 2 ‘Folio 54r’ from Codex Rios

In Matos Moctezuma and Olguin, *Aztecs*, 376.

humid/dry was essential.[112] This equilibrium model is not a million miles from the rationale underpinning European humoral theory; a point that will be discussed further in Chapter 6.

Even outside the sphere of the supernatural and divine, comparisons of formal medical practice and norms from Spain reveal more communicable practices than previously credited. Both Aztecs and Spaniards used similar medical instruments and equipment, both practised bleeding[113] and cauterisation,[114] both administered enemas, both may have developed hospitals (subject to debate), or at least centralised places for the care of others, and both systems saw specialisation categories develop. Indeed, both cultures acknowledged the difference between legitimate and illegitimate practitioners and charlatans, even if their ideas of exactly what constituted each of these categories differed.[115]

That all three cultures inflicted a training process on their medical practitioners is further evidence that all three believed that a certain degree of professionalism was associated with the role: skill and knowledge were deemed prerequisites to adequately fill the position. In prescribing such an initiation ceremony for their own doctors the Africans were, albeit within a less formalised setting, equally bestowing legitimacy on only a certain class of healer.

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[112] Ortiz de Montellano, *Aztec Medicine*, 37.
[113] Although there is some debate over this which will be returned to in Chapter 6.
[114] Indeed, there are many rather gruesome Spanish references to using the fat of fat Indians to perform this procedure in New Spain, see Wyndham B. Blanton, "Medical references in Bernal Díaz's account of the discovery and conquest of Mexico," *Annals of Medical History* 4 (1942): 400.
[115] Actually, comparing excerpts from the Hippocratic oath and from Sahagún's information regarding the duties of a 'good physician' reveals some surprising overlaps; alongside the fact that both are sworn to cure to the best of their abilities, it is interesting to note that both also mention sexual impropriety with patients as against the rules. See R. Porter, ed., *Cambridge Illustrated History of Medicine* (Cambridge: Cambridge University Press,1996), 59; and Sahagún, *Florentine Codex,* book X, chap. VIII, 30.

Indisputably, however, herbalism and the role of plants were key to all three. Once again, while the specific practices may have varied (as would the plants used on the eve of conquest, necessarily) all three relied heavily on plants for their medicines. Solid empirical application of proven remedies was a notable characteristic of both Aztec and, to a lesser degree, Spanish medicine. All three, however, also subscribed, to varying degrees, to the Doctrine of Signatures. Indeed, one particularly interesting collision of similarities and differences can be seen in examination of the plants adopted. While many of the same plants were adopted by the Spanish as were already used by the Indians, the rationale for their application and the diseases towards which they were directed, changed. As will be shown in Chapters 5 and 6, this lead to a situation where many of the same plants were ultimately being used for different purposes.[116]

That there were differences between the three medical cultures is undeniable. However, this section has sought to highlight the fact that there were also enough areas of shared or similar belief, to facilitate the process of assimilation and, furthermore, inform the direction such assimilation took. On the eve of conquest there were already some striking similarities between elements of Spanish and Aztec medicine; indeed, independently on two separate continents the same type of medicine developed in that in both places, subject to diagnosis, patients were treated similarly, with medicines, powders, ointments, poultices and surgery.

Furthermore, alongside the not inconsiderable number of "communicable concepts" which were to provide a crucial backdrop for willing exchange of ideas and interculturation, there were new and unprecedented pressures that might,

[116] Ortiz de Montellano, *Aztec Medicine*, 193-236.

similarly, have forced the cultures to look to each other for solutions; conceptual equivalents that would certainly have facilitated assimilation and fusion as elements of the worldview from all sides turned out not to be as opaque as might have initially seemed to be the case. Although there are exceptions from within the formal domain, this becomes particularly true when Spanish medicine is viewed as more than merely the sum of its formal parts. Indeed, it is important to remember that medical ideas, initially at least, would have come over from Spain via conquistadors and settlers, "with few exceptions of low social status in origin, [who] were the carriers of ideas and practices of popular Spanish medicine."[117]

[117] Hernández-Sáenz and Foster, "Curers and their cures," 23.

Chapter 3

PRACTITIONERS AND PATIENTS

As already discussed in Chapter 2, by the end of the fifteenth century the Spanish Crown had begun to regulate medicine more stringently in Spain, having established a regulatory body, the *protomedicato*, in 1477. While the reality was often more chaotic than this bureaucracy intended, they were, nevertheless, formulating clear ideas about what constituted legitimate practice on the eve of conquest and it was armed with these ideas of best practice and practitioner that they approached the New World. As in mainland Spain there were certain barriers to the successful implementation of their ideal medical design which would prove difficult to surmount; the same factors that had hindered the successful implementation of a wholly legitimate venture in Spain also worked against it in the New World, among them were insufficient numbers of approved practitioners, coupled with patient poverty and patient preference – themes that will be examined throughout. New factors were also present in the New World which would spur novel Spanish approaches and uniquely shape who, how, why and which people became, and employed, medical practitioners.

Beginning with the 'ideals' imported by the Spanish, this chapter aims to elucidate the specific evolution of medical practice in Mexico that incorporated a wide variety of legitimate and illegal practitioners. It will also examine who these practitioners were and who they were treating. Taking notions of the 'ideal' practitioner, as conceived in Spain on the eve of conquest, as a starting point, it hopes to trace the transition through to the chaotic reality that emerged; where

most medicine was conducted by people working outside the sanctioned framework.

To consider events simply in terms of ideal versus reality, however, is to understand the Spanish as being static, inflexible and unable to adapt to new circumstances. Rather than being viewed in two distinct stages, therefore, this move from ideal to reality will rather be viewed as a more nuanced transition, with specific focus on any modification of ideals resulting from the New World encounter, and what impact, if any, this had on the emerging reality. Nor is this to suggest that the Spanish were entirely capable of directing events in the new colony; factors that were clearly beyond their control have already been mentioned. It does, however, recognise that compromises and adaptations made by the Spanish authorities were implicated in the eventual outcome.

The 'ideal' medical practitioner in Mexico

Licensed practitioners were never going to be either numerically sufficient or capable of providing healthcare solutions that appealed to all, or even the majority, of the colonial populations (after all this had proved the case in Spain and seemed more likely in Mexico where alongside all of the factors that hindered its success in Spain, such as shortage, cost, distance were new elements that exacerbated the situation such as new diseases, new populations and higher levels of emotional stress induced by the contact situation). Forgetting for a moment that an abundance of illegal practitioners was an inevitable outcome in the New World, however, it is useful to try and understand the situation from the viewpoint of the new colonial authorities who were, nominally at least, intent on providing

legitimate healthcare for their populations. Before turning to Mexico it is useful to briefly consider the experience in the Caribbean in the period immediately preceding the conquest of Mexico as events there can help to shed light on what was to follow. [1]

Doctors were amongst the earliest voyagers to Hispaniola and the Crown was directly involved in their appointment; for example of Doctor Diego Álvarez Chanca and the Royal Surgeon Gonzalo Velloso. As more doctors and charlatans arrived on the island, the issue of regulation rose to the fore and mainland *protomédicos* stepped in and appointed Doctor Pedro López to examine medical candidates. However, in a move that was to shape medical denouement in the new colonies for the next century the Crown heeded a petition from the Governor of Santo Domingo that "great injury" would result from these appointments and nullified them. While the Crown was clearly piqued that their *protomédicos* had overstepped their commission without Crown consultation and wanted to intervene to ensure that the process of licensing remained firmly on the Peninsula, the actions of the Hispaniola authorities are less clear. In rejecting the appointment of a *protomedicato* it seems that the Santo Domingo authorities were not rejecting the significance of a license as a basis to legitimate practice, but to the application of rigid mainland mandates rather than a pragmatic application of law sympathetic to local concerns and new circumstances. With *cabildos* gaining greater control over the appointment of practitioners they would be able to encourage a subtle evolution of the role more sensitive to local needs.

[1] The information contained in this brief section on the Caribbean has been drawn from Lanning, *Royal protomedicato,* 14-23.

Both the local Santo Domingo authorities and the Crown rejected the naming of local *protomédico*s in a bid to maintain control over medicine in the new colony. It was to prove a pyrrhic victory for the Spanish Crown, however, as their attempt to maintain ultimate control instead saw them divest, in all but name, absolute control to the local authorities. In attempting to retain control on the Peninsula, the Crown inadvertently facilitated the ability of local authorities to make *ad hoc* decisions according to local needs; the absence of a regulatory board allowed the Santo Domingo authorities to minister to the situation with a more flexible interpretation of the law when needed. This was to provide a template for the regulation of medical professionals that was to endure for over a century in the New World, during which time local authorities took it upon themselves to appoint their own regulatory bodies – *protomedicato* equivalents that were able to act as they saw fit according to local requirements.

In the case of Mexico, although the Crown appointed Francisco Hernández the first official *protomédico* of New Spain in 1570 [2] in actual fact an unofficial *protomédico* had been appointed over forty years previously; in an unprecedented extension of the move begun by the Hispaniola authorities to maintain local control over medical regulation, the Mexican *cabildo* had named Pedro López *protomédico* in 1527. While there seems to have been some confusion at the beginning over precise terminology applied to the position, by the time Cristóbal Méndez (who will be considered in greater detail later on) was appointed alongside Pedro López in 1536, the *Actas de Cabildo* (minutes of the town

[2] AGN Protomedicato vol. 2 exp. 10 fols. 2-10 'Informe del Virrey Don Manuel Antonio Flores, enviado al Rey, en cumplimiento de una Real Orden de 20 octubre de 1788; sobre sueldos en la universidad de los dependientes del protomedicato,' México, 1788. Despite the late date this document compiles information from earlier royal *cédulas* (decrees) including those issued in 1570 regarding the appointment of the *protomédico* Francisco Hernández. This document also outlines the duties expected of the *protomédico*.

councils) clearly outline the duties of the *protomédico* as "like those in Spain," thus inspecting *boticarios* and medicines and examining physicians, surgeons and all those wanting to practise medicine. If there were any doubt over the guilt of the *cabildo* in knowingly acting against Crown desires it was confirmed when, upon the appearance of Hernández in 1570 the title of *protomédico* was changed to "medical inspector" only to be changed back immediately once he left.[3]

The appointment of Pedro López as *protomédico* is not only significant as it represents a tangible move by colonial authorities to independently respond to local medical imperatives, but, furthermore, he was the same Pedro López whose position as *protomédico* for Hispaniola had been revoked by the Crown ten years earlier. The poignant irony of López's appointment lies in the fact that it demonstrates simultaneously the Mexican *cabildo*'s desire to follow the norms of mainland legislation, while also revealing their flexibility and lack of stringency in so doing; in a bid to regulate medicine in Mexico they appointed a doctor to the role who had already been rejected for the position by the Crown. Furthermore, Cristóbal Méndez, who joined Pedro López as *protomédico* in 1536, was himself subject to trial by the Inquisition only two years later for superstitious practices before he became *protomédico*.[4] While such substandard license (and character) checking, driven certainly by the lack of alternatives, is perhaps better understood as calculated oversight rather than express policy, it was to usher in a period

[3] Lanning, *Royal protomedicato*, 25-26.
[4] Cristóbal Méndez commissioned astrological medallions he believed to promote happiness, health and wellbeing. He wrote the *Book of Bodily Exercise* in the mid-sixteenth century. See AGN Inquisición vol. 40 exp. 3 fols. 15-19 'Proceso contra el Dr Cristóbal Méndez...por haber mandado hacer unas medallas o sigilos de oro...,' México, 1538. For more information on Dr Méndez, see Vera Cecília Machline, "Cristóbal Méndez medical ideas about the influence of joy and pleasure (rather than humour) upon health," in *Revista de Humanidades: Tecnológico de Monterrey*, 17 (2004):115-128, http://redalyc.uaemex.mx/pdf/384/38401706.pdf (12 November 2011); and Juan Somolinos Palencia, "Cristóbal Méndez: médico y científico del siglo XVI," in *Boletín de la sociedad mexicana de historia y filosofía de la medicina* vol 6 no. 39 (1982): 43-47.

during which there seems to have been a more pragmatic, or relaxed, appraisal of the circumstances under which licenses were issued and reviewed which impacted on the quality of doctors being appointed and the standards of their practice. This would have done little to bolster patient confidence.

The Mexican *cabildo* had to contend with a severe lack of qualified professionals in the new colony; if employing suitable numbers of physicians had been difficult on the mainland, it was to prove entirely impossible in Mexico. This situation was exacerbated by the fact that, despite the establishment of a regulatory body, there was a distinct lack of facilities available to locally train physicians, until the establishment of the first university medical faculty in 1578, 25 years after the university was first inaugurated. This made Mexico dependent on an influx of legitimate physicians that simply did not transpire.[5]

Given its distance from the mainland, Mexico already risked becoming a haven for deregulated activity. The Mexican authorities' lack of stringent checks further aided chancers such as López to rise to positions within the medical hierarchy that they could not have hoped to achieve elsewhere. Indeed, research suggests that practitioners going out to the New World were drawn from a variety of social backgrounds, as on the mainland – from the ruling classes (mainly becoming physicians) to those from more humble backgrounds (more likely to be found working as barbers, romance surgeons or empiric specialists) – and were able to compete for positions that they almost certainly would not have been considered

[5] It is not clear when the first degree was granted, however Lanning demonstrates that from 1607-1738 the university of Mexico conferred an average of only 3.35 medical degrees a year. He further suggests that in 1545 there was only one fully active and licensed physician, Juan de Alcázar, to serve the city who himself threatened to leave as he was overworked. See, Lanning, *Royal protomedicato,* 32, 139-140.

for on the mainland. Thus a humble Basque barber-surgeon such as Andrés Aguiñago Zumaia and a regular Castilian surgeon such as Andrés Manzano were able to become the official Mexican Inquisition barber-surgeon (1572) and the official Mexican Inquisition surgeon (1607) respectively.[6] The promise of such career progression amidst a limited pool of legitimate contenders saw fierce competition and rivalry emerge in Mexico between practitioners, which will be considered later.

In 1567 the surgeon Pedro Arias de Benavides[7] again hinted at such concerns over the quality of practitioners entering Mexico, particularly the fact that many appear to have been young men with less experience. He noted that,

> Wise colonists of the Indies (meaning the older ones) are accustomed to not using any doctor to cure them until the said doctors have spent two years there; they want first that these recently arrived doctors, who are mainly young men, gain experience of medicines on others and not on them.[8]

In maintaining the licensing structure but altering the stringency with which licenses, characters and abilities were checked, it seems that the Mexican colonial authorities were hoping to alleviate shortages but uphold mainland standards of

[6] AGN Inquisición vol. 466 exp. 8 (Manzaro) and AGN Inquisición vol. 62 exp. 4 and AGN Inquisición vol. 66 exp. 8 (Aguiñaga), in Memarzadeh, "Medical practitioners," 76-77. The origins of other medical practitioners entering Mexico are also discussed in this work. Germán Somolinos d'Ardois also makes the point that the doctors going out to the New World in the early period (with a few exceptions such as Doctor Chanca), certainly until the arrival of Hernández, tended to be of middle to lower status, see Germán Somolinos d'Ardois, "Los médicos y los cirujanos," in *Medicina novohispana siglo XVI: historia genera de la medicina en México: Tomo II*, coords. Gonzalo Aguirre Beltrán and Roberto Moreno de los Arcos (México: UNAM, 1990), 280.

[7] Pedro Arias de Benavides was a surgeon who came to the Americas in the mid-sixteenth century and spent over ten years working in various hospitals in Mexico. His book, the *Secretos de cirugía* was published on his return to Spain in 1567. For more information about the life of Arias de Benavides see Juan Somolinos Palencia, "Suma medica de dos mundos," in Pedro Arias de Benavides, *Secretos de cirugía* [1567] (México: Academia Nacional de Medicina, 1992), 1-17.

[8] The original reads, "los indianos vaquianos en la tierra (que quiere decir viejos) en las Indias, tienen por estilo de no curarse con médico ninguno, hasta que hayan pasado dos años por ellos que quieren primero que estos tales médicos recién idos, que por la mayor parte son mozos hagan experiencia de las cosas tocantes a las medicinas en otros y no en ellos," in Arias de Benavides, *Secretos de cirugía*, chap. 17, 53.

quality control, nominally at least. Within such an atmosphere, however, it seems that appointed doctors, even *protomédico*s, relaxed their approach to their duties. This is seen in Pedro López's frequent applications to be released from formal obligations, which were more often than not granted and in the 1592 reprimand of the *protomédico* Doctor Bravo for "not attending to his office as he should do and is obliged to do."[9] The fact that there was no financial recompense for the position of *protomédico* may well have affected how conscientiously the appointed physicians worked towards the role.

These already more relaxed efforts to regulate and legislate were, in fact, only part of the story. The power of the *protomedicato* – either municipally appointed in the early days or from the mainland later on – was incredibly limited during the early colonial period, reflecting and amplifying the situation on the mainland, and this appears to have been tacitly acknowledged. At times this manifested along ethnic lines. By 1652, for example, when Philip IV was informed that lots of people were practising medicine without the necessary examinations and approvals, he ordered Viceroy Enríquez de Guzmán to root them out in Spanish towns, thus implicitly acknowledging that the practice would continue unchecked in Indian towns.[10] Indeed, in 1799, the Justice of Teocaltiche in Nueva Galicia, reporting on a lawsuit fought to limit *protomédico*s extending their powers into the region, commented that *protomédico* laws had always been "for places where Spanish people live, not for Indian places."[11] Thus the ongoing struggle to enforce medical laws was to be fought more vigorously in places where there were whites.

[9] Lanning, *Royal protmedicato,* 26.
[10] Lanning, *Royal protomedicato,* 136.
[11] AGN Protomedicato vol. 3 exp. 8 fol. 156r, cited in Paula De Vos, "Art of pharmacy," 49-50.

Even in Spanish towns there was a measured response and empirics working in places where no other medical practitioner could be found were allowed to continue unchecked. There was an implicit understanding that it was better to be treated by somebody than nobody, as noted by the same Teocaltiche Justice:

> Necessity dictates that it is more valuable to humanity to have some recourse to quick relief and resources to aid in the illness of its individuals...to have someone who has modest experience or knowledge to attend to such things, than to have an absolute lack of recourse and to be required to put oneself in the hands of people who have no understanding and lack entirely any practical knowledge.[12]

Until they could attract enough licensed physicians, town councils either licensed *curandero*s, or neglected to ask for their papers.[13]

Perhaps the most surprising and significant concession made in order to minister to the needs of the population was that the authorities took the unprecedented step of allowing certain indigenous doctors to practise. These approved indigenous doctors were not silently and secretly accepted but, it appears, were authorised to promote medicine. Doctors such as Martín de la Cruz and Antón Hernández were free to practise medicine anywhere but could only cure Indians.[14] Two and a half years later Martín de la Cruz is mentioned as the examiner of Indian doctors with Antón Martín and Graviel Santiago appointed to join him in October 1553. Furthermore, in the early sixteenth century these Indian doctors were encouraged to continue training, with indigenous medicine included on the curriculum at the college for indigenous children at the Real Colegio de Santa Cruz de Tlatelolco, long before an equivalent teaching facility was established for their Spanish

[12] AGN Protomedicato vol. 3 exp. 8 fol. 156v (the same Teocaltiche judge), cited in De Vos, "Art of pharmacy," 50.
[13] See, Quezada, *Enfermedad y maleficio,* 12.
[14] Although Carlos Viesca Treviño does report that during the later colonial period indigenous doctors were also allowed to treat "blacks, mulatos and other races," see Viesca Treviño, "*Curanderismo*," 55-56.

medical counterparts.[15] Nor were these indigenous physicians simply labelled *curandero*, but their professional standing and expertise was appreciated and recognised and earned them the title of physician. This is confirmed by the original title of the *Libellus de Medicinalibus Indorum Herbis* (better known as the *Codex Badianus*) "a little book of Indian medicinal herbs composed by a certain Indian, physician of the college of Santa Cruz, who has no theoretical learning, but is well taught by experience alone, in the year of our Lord Saviour 1552."[16]

The professional dignity associated with being allowed to rise to the highest rank in Spain's medical hierarchy and acquire the title of physician is significant indeed. The same honour had been expressly denied all *moriscos* and *conversos* after the Reconquest upon the fierce application of the *limpieza de sangre* laws, despite the fact that during the century preceding the Reconquest both ethnic categories had dominated in the medical field. While they certainly continued to practise after the Reconquest they were never again allowed to do so legally. In thus enabling legitimate entitlement for certain indigenous practitioners, the Spanish had effectively introduced an entirely new category of practitioner into the New World that had never legally existed before. Furthermore, although these doctors appear to have been prohibited from treating other races, such stringency did not apply to their interaction with Spanish doctors, many of whom worked with them in hospitals and sought, and were encouraged to learn from them. In

[15] Viesca Treviño, "*Curanderismo*," 47-65. Although regarding the licensing of Indian physicians Viesca Treviño comments that "authorizations have been found that were signed by the Viceroy" he provides no reference. In the cases of doctors Antón Martín and Graviel Santiago, Viesca Treviño notes that they are referred to as *amantecas* (artisans/practitioners of a manual art) making them closer to the status of surgeons than physicians.

[16] Emmart, *Badianus manuscript*, 205. It is worth noting that William Gates' version excludes the word 'physician' from his translation, see William Gates, ed., *An Aztec Herbal: The classic Codex of 1552,* Reprint 1939 (New York: Dover Publications, Inc., 2000).

this way a legitimate space was opened up for the sharing of indigenous knowledge and practice.

Even with such concessions, there were too many issues in Mexico for the Spanish medical project to work and from early on in the colonial period there was a proliferation of unlicensed or downright illegal medical activity. Even if the colonial patients had been entirely willing and able to follow the rules (which they were not, as will be examined shortly) explicit and implicit Spanish policy meant it was never quite clear what the rules were. Confusion mounted as, despite seeming adherence to medical guidelines from the mainland, the colonial authorities' responses proved inconsistent; arbitrary approaches to prosecution coupled with law relaxation and pragmatic blindness obscured any clear notion of those practitioners who were and those who were not legitimate.

Thus the medical landscape in early colonial Mexico was diverse, dynamic and chaotic. The authorities fell far short of achieving a situation in which Spanish, indigenous and slave populations were treated by licensed practitioners alone – Spanish or indigenous – or, indeed, even by those illegal and unregulated elements to which they had been willing to turn a blind eye. This is attested by the proliferation of court cases that continued to abound against superstitious practitioners throughout the sixteenth century and particularly in the early seventeenth century, once the colonial bureaucracy was more defined.

Patients and their practitioners

In the case of colonial Mexico, it is perhaps more pertinent to talk of patients and their practitioners than vice versa since it was the varied demands of patients in

the colonial context which drove medical diversity; here people were driven to seek and thus others to provide a variety of healthcare solutions that the authorities were unable to control. Mexican colonial populations quickly demonstrated that they were neither financially able nor, perhaps more importantly, willing, to abide by the rules (even if they had understood them) as the healthcare categories and solutions prescribed and approved by Spanish officials did not adequately meet their needs. This had been true in Spain and across Europe and was further compounded in a colonial context in which different cultural groups collided with differing medical visions. There were also a host of new sicknesses to contend with; not only the often discussed diseases such as syphilils and smallpox, but new complaints such as *mal de ojo* (the evil eye), the belief in which spread quickly throughout colonial populations.[17]

What factors, then, drove colonial patients' medical preferences and how did this impact on the reception of licensed Spanish practitioners? One consideration would, of course, have been the scarcity of physicians (and other specialists) across the colony, previously alluded to. Alongside calculations undertaken by scholars such as Lanning which reveal the paucity of physicians available, even to the population of Mexico City, during the early colonial period, evidence from *cronistas* and from the archival sources paints a picture in which contact with physicians was a luxury denied most colonial residents. In the account of Fray Alonso Ponce's journeys across Mexico in the late sixteenth century, there are

[17] Indeed, one case even gives the *curandera*'s own description of what the evil eye meant to her, see AGN Inquisición vol. 38 exp. 11 fols. 238-268 'Proceso contra Barbola de Zamora, por hechicera' Zacatecas, 1565. Although modern and discussing *susto* and not *mal de ojo*, Arthur J. Rubel, "The epidemiology of a folk illness: *susto* in Hispanic America," in *Culture, disease and healing: studies in medical anthropology*, ed. David Landy (New York and London: Macmillan, 1977), 119-128 presents a useful discussion on the perceptions and treatments of folk illnesses and the role that confession could play in such treatments.

constant and vivid descriptions of the regular bouts of illness that befell the poor friar and subsequent treatments he received, but it is not until the 18th February 1586, a year and a half after Ponce's travels began, that he was first seen by a doctor.[18] Pedro Arias de Benavides also noted that the Dominicans used balsam of the Indies (which he himself considers a substandard remedy) because "they are without doctors and so far from where doctors are that they use it as a cure."[19] In 1576 Sahagún lamented the fact that "there are now neither educated Indians nor Spanish doctors to aid the sick and the dying."[20]

There is also the interesting Inquisition case of Isabel Vera, *morisca*,[21] for witchcraft, dating from 1562, which perhaps most clearly shows how the shortage of doctors and subsequent distances required to get to them may have affected colonials' choice of a healthcare provider. In her deposition against Isabel, Beatriz de Vera, reveals that her ulcerated foot got so bad that, having asked around for a 'maestro' who could cure it, it was eventually decided she would make the journey to Mexico City to have it cured. She was persuaded against making the journey by the *curandera* Isabel Vera who promised she could make it better. This case is interesting, not only because Beatriz de Vera eventually opts for treatment at the hands of a local *curandera* rather than making the journey to the city, but also because of the implication that when things did get serious some Spaniards were willing to make precisely this journey for treatment (which one can assume

[18] Antonio de Ciudad Real, *Tratado curioso y docto de las grandezas de la Nueva España: relación breve y verdadera de algunas cosas de las muchas que sucedieron al padre fray Alonso Ponce en las provincias de la Nueva España: siendo comisario general de aquellas partes; escrito por dos religiosos, sus compañeros* (Madrid, Imprenta de la Viuda Calero, 1873), 241-242.
[19] Arias de Benavides, *Secretos de cirugía*, chap. 12, 45.
[20] Emmart, *Badianus manuscript*, 27.
[21] As Isabel Vera is also later described as being 'de color morena' and other archival records often seem to use the terms *morisca*, *morilla* and *mulata* interchangeably, it will here be understood to mean of colour rather than Muslim.

probably meant at the hands of a legitimate doctor, particularly in this case where in the first instance she has been looking for a "*maestro*" to cure her).[22] Indeed, this is precisely the case with the sick slave, Miguel, of the Sanctuary of Guadalupe who, Jerónimo de Valladolid, *mayordomo* (foreman or supervisor) of the sanctuary, reports was moved to Mexico City in order to receive extensive treatment at the hands of doctors and surgeons.[23]

Doctors did, of course, make house visits, as is the case in 1572 when Doctor Contreras goes to treat Don Antonio de Velázquez in San Juan Teotihuacan, six leagues from Mexico City. As can be seen from this case, however – which ends up in wrangles between patient and doctor over costs – the price of such treatment was high. Indeed, Doctor Contreras initially wants to charge Don Antonio thirty pesos a day for the treatment in lost earnings from those patients he would normally have been treating in the city. Eventually other doctors, namely Doctor Francisco de Sande and Doctor Valpuesto, are called to put a fair price on the daily cost of a doctor on call which, – despite suggestions from both doctors that "twenty, thirty or forty pesos a day have often been paid to other doctors who incur great losses in leaving the city" – is set at ten pesos a day.[24]

[22] AGN Inquisición vol. 38 exp.10 fols. 212-237 'Proceso contra Isabel Vera por haber curado en Guayangareo con cabezas de carnero y otros hechizos,' Michoacán, 1562.
[23]AGN Bienes Nacionales vol. 457 exp. 5 'El Br. Jerónimo de Valladolid, mayordomo de Nuestra Señora de Guadalupe solicita que se concedan médico y medicinas a un esclavo suyo,' México, 1679 which states, "necesitaba de curarse [esclavo Miguel] y para este efecto vino a México a los últimos días de el mes de septiembre de este año y se estuvo curando algunos días en casa del bachiller Francisco Pérez de Villanueva, cura, a quien pagué treinta y tres pesos y dos tomines por otros tantos que gastó con dicho esclavo en el dicho cirujano, botica y alimento. Y por haber sido preciso mudarlo a parte más conveniente lo visita el doctor Anzures, médico, que no llevó paga, y el médico de cirujano Manuel de Ortega a quien pagué ocho pesos de su asistencia."
[24] The original reads "a veinte y a treinta y a cuarenta pesos de oro común en cada un día...se les han dado muchas veces a otros médicos por que pierden mucho los médicos que salen de la ciudad," in AGN Civil vol. 985 exp. 8 'Proceso del licenciado Contreras contra don Antonio Velázquez sobre pesos de su curación,' Teotihuacan, 1572.

While clearly the cost of such home visits was particularly high, treatment by licensed practitioners was generally costly. Noemí Quezada reports on a *curandera* called Dominga who offers in defence of her illegal healing activities that she, and many others like her, cured so that poor people would not have to pay the inflated prices charged by doctors.[25]

Alongside cost, scarcity and distance it is important to remember patient preferences and the fact that colonial patients each carried their own ideas of sickness and treatment, which would have informed where and how they sought treatment. Since many of these beliefs would have been related to the religious or supernatural domain, licensed practitioners alone were unable to tackle them.

Nor were Blacks excluded from this process. While it is true that slaves arrived in the New World stripped of their worldly possessions, one should not doubt that they nevertheless retained, if nothing else, elements, of their own culture in their head. This is an area that is rarely visible through the archival record, but which must have informed how Blacks perceived illness and thus how they sought to treat it. The existence of such residual medical memories is indicated in the case of Juliana, a *negra* slave belonging to Doña Mencia de Ulloa, who is treated for, among other conditions, dropsy and dysentery. During the course of her treatment Juliana reveals to the doctor that hers is a pre-existing condition that was diagnosed by doctors in her native Angola as being the result of "hot bones."[26] As the colonial landscape and demographic changed, so too would the demands made

[25] Quezada, *Enfermedad y maleficio,* 30.
[26] The original reads, "que el doctor de su tierra le había dicho muchas veces que no se le quitaba calentura que la tenía en los huesos,' and the slave's ailments are described as 'hidropsía anasarca' and 'disentria,' see AGN Bienes Nacionales vol. 79 exp. 18 'Doña Mencia de Ulloa viuda de esta ciudad contra el Bachiller Joseph Bustron de Chavarría, presbítero, vecino de las minas de Pachuca, sobre redhibitoria de una esclava' México, 1664.

on practitioners, not least as racial mixing increased and the *mestizo* populations blossomed.

Ultimately it seems that the vast majority of patients were prepared to do whatever they could to find a suitable and effective cure, taking into consideration cost, distance and their own diagnoses. While some patients may have consistently sought help from the same types of practitioners, it seems more likely that for the majority, the practitioner chosen may have varied from complaint to complaint, or as often attested in the archival record, that several types of practitioner would be called on to treat one complaint until a remedy was found (or they died!), not least since no single group of practitioners provided better cures than any other at this time.[27] As will be examined in greater depth, in the case of Spanish patients, for many, although not all, this seems often to have begun with treatment at the hands of licensed physicians and ended with treatments (or prayers or witchcraft) conducted by *curandero*s. For the Indians treatment was predominantly sought from other Indians. Blacks and Mulattoes, while often subjected to treatments decided upon by their masters, often sought alternative treatments and medicines from *curandero*s, Black and Indian. There was quickly an incredible array of practitioners available to cope with the diverse beliefs that abounded in the population about illness origin; Hippocratic healers treated according to substances' natural properties, while those with knowledge of the divine tapped into the supernatural, and amongst the other empirics, witches and healers, many no doubt catered to both, depending on the specific complaint or what diagnosis revealed to be the cause.

[27] Fields, *Pestilence and headcolds,* chap.2 para. 5.

Licensed medical practitioners in Mexico

This section will look at those categories of practitioner authorised by the Spanish authorities and the patients they were treating, where such information is available. The aim here is not to provide details about the specific regulations these categories were subject to, not least since, in principle the same rules applied as on the Peninsula. Nor is it possible to provide exhaustive lists of who these early practitioners were, however, information has been selected which seeks to demonstrate both the types of patients consulting such practitioners and any evidence which would be pertinent to better understanding the process of medical pluralism and exchange.[28]

Although this section will be ordered according to the same categories applied in the previous chapter, namely physicians, apothecaries, surgeons and empirics, it is worth noting that it was not uncommon for such practitioners to stray into the practice domain of their colleagues, although, as mentioned, this was forbidden under Spanish law.[29] In the aforementioned case of Licenciado Contreras from 1572, for example, he clearly states that he has been acting as a doctor, surgeon and pharmacist, in the absence of anyone else qualified.[30] Even in the case of a famous physician such as Agustín Farfán, the introductory notes to his *Tractado Breve* note that he has "proven sufficiency in medicine and surgery."[31]

[28] For fuller summaries of the practitioners in early colonial Mexico, Lanning, *Royal protomedicato, passim;* Memarzadeh, "Medical practitioners," throughout; and Risse, "Medicine in New Spain," 12-63.
[29] Muñoz, *Recopilación,* chapter XIII, which concerns the prohibitions in place to prevent such practitioners straying into each others' disciplines.
[30] The original reads, "no solamente use del dicho officio de médico pero de barbero y boticario por falta de quien lo hiciese," in AGN Civil vol. 985 exp. 8 'Proceso del licenciado Contreras contra don Antonio Velázquez sobre pesos de su curación,' Teotihuacan, 1572.
[31] The original reads, "en todas ocasiones ha mostrado su sufficiencia en medicina y cirugía," in Farfán, *Tractado breve,* unnumbered introductory pages. Saul Jarcho, "Medicine in sixteenth

Perhaps most vivid is the case brought by the apothecary Hernán de Gómez Rubio against the Inquisition's own surgeon, Gaspar de los Reyes Plata, in 1592, in which the surgeon slashes the apothecary across the face with a knife. It later transpires that Hernán de Gómez Rubio is frustrated because the surgeon Gaspar de los Reyes Plata is also running a *botica*.[32] Although it did not often come to such violent blows, such professional in-fighting was not uncommon. The same territorialism and snobberies that existed on the mainland persisted, as seen for example in Doctor Farfán's insult to the Inquisition barber Alonso de Salas when he calls him a "barbedillo de mierda" (shitty little barber) in 1576.[33]

Alongside such competitiveness and territorialism there was also professional friendship and collaboration. This is seen when doctors call on each other to be witnesses, such as in the aforementioned case of Contreras. Pedro Arias de Benavides also tells us that in dealing with the removal of *landres* (a morbid swelling of the glands), which he has never seen before, his job of removal was made easier by the fact that Doctor Francisco de Toro had it well prepared with previous faulty treatments rectified before his arrival.[34] It is also noted in the professional commendations provided, for example, by doctors Agustín Farfán

century Spain," 431 also notes that the first edition of his book similarly notes his work as a doctor and surgeon for over 27 years.

[32] AGN Inquisición vol. 214 exp. 5 fols. 49-75, 'Proceso criminal contra Gaspar de los Reyes Plata cirujano familiar del Santo Oficio a pedimiento de Hernán de Gómez Rubio, boticario, por riña,' México, 1592. See also Memarzadeh, "Medical practitioners," 157-238, for further information on both protagonists.

[33] AGN Inquisición vol. 79 exp. 1, Mexico, 1576, cited in Memarzadeh, "Medical practitioners," 106.

[34] The original reads, "En las Indias nunca se habían visto landres, si no fue una que yo saque a una hija de un caballero que se llamaba Mota, natural de Burgos, túvose por cosa extraña y jamás vista; saquela con mucha facilidad, porque el Doctor Francisco de Toro la tenía preparada y corregidos los accidentes cuando me llamaron," see Arias de Benavides, *Secretos de cirugía*, chap. 11, 44.

and Francisco Bravo, at the beginning of Alonso López de Hinojosos' *Suma y recopilación de cirugía*.[35]

Physicians

Despite the aforementioned drawbacks associated with the employment of physicians and the fact that there was a clear cynicism about them amongst colonial populations, as observed in the poem by Juan del Valle y Caviedes –

> And wherever the book says
> *Doctor,* be aware,
> Because there you should read *executioner,*
> although the latter is a little weaker...
> and where it says *remedy,*
> you should read *certain death.*[36]

physicians were not without clients. In 1535, Fernández de Oviedo y Valdés comments that "although doctors and surgeons kill lots of people, they feel no shame, nor do people stop paying them." [37] Alongside their work in a public capacity for jails or hospitals, and the charity work they were supposed to carry

[35] Alonso López de Hinojosos, *Suma y recopilación de cirugía: con un arte para sangrar muy útil y provechosa.* [1578] (México: Academia Nacional de Medicina, 1977), 72, in which, for example, Farfán declares the book "very necessary and of great use to this land." Alonso López de Hinojosos was a surgeon in Mexico who produced the first surgical tract published in the New World, 1578. Alonso López de Hinojosos, *Suma y recopilación de cirugía,* is a simple surgical text written largely in the vernacular and aimed predominantly as a guide for those without access to professional medical care. In his own words he wrote it "as a little service to the poor of the land, especially the Indians such as those under my watch that they might be cured of their illnesses through the art of surgery, as to date they have been at my hand, which is of great public servce" ("mi pequeño servicio es para que las pobres personas y en especial los indios naturales que tengo a mi cargo de sus enfermedades tocantes al arte de cirugía sean curados como hasta aquí lo han sido por mi, lo cual es pública utilidad,") in López de Hinojosos, *Suma y recopilción,* 75. For more information on López de Hinojosos see Germán Somolinos d'Ardois, *El cirujano López de Hinojosos, su obra quirurgica y la Compañia de Jesus* (México: Editorial Sur, 1975), 525-576.

[36] The original reads, "En cuantas partes dijere/ *doctor,* el libro está atento;/por alli has de leer *verdugo*/ aunque éste es un poco menos.../y donde *remedio* dice/ leerás *muerte sin remedio,*" from Juan del Valle y Caviedes (A Peruvian poet, 1645-1697) , *Obras completas,* ed. Daniel R. Reedy (Caracas: Biblioteca Ayacucho, 1984), 6-7, poem entitled 'Printing error' ('Fe de erratas'), http://books.google.co.uk/books?id=5XY_Lej48OwC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false, (12 November 2011).

[37] The original reads, "un médico o cirujano, aunque mate a muchos, no tienen pena ni les dejan de dar dineros," from Gonzalo Fernández de Oviedo y Valdés (Oviedo), *Historia general y natural de las Indias* [1535], part I, book X, chap. III, http://www.ems.kcl.ac.uk/content/etext/e026-copyright.html, (12 November 2011).

out (and, indeed, many did[38]) physicians appear to have earned a very decent living from a host of private clients. Indeed, for some clients, no doubt the richer Spanish elements of society, physicians appear to have remained the first port of call.

Time and again cases can be found in the archives where a *curandero* is sought only after legitimate avenues have been exhausted. There is, of course, the famous early case of Viceroy Antonio de Mendoza whom Pedro Arias de Benavides, amongst others, mentioned was cured where other doctors had failed. [39] Again in 1647, in the town of Quexotzingo, Puebla, the gravely sick María Sambrano called on the services of the Mulatta Ana de Vega only after doctors Joseph de Valencia and Bartolomé Paresio have taken their leave of her having diagnosed her illness as incurable.[40]

Alongside these Spanish clients, Black slaves also appear in the archival record, regularly treated by Spanish physicians, among other legitimate practitioners. In 1596 Alonso Gaspar de Contreras asked Marco Matías to return the medical costs for treating his slave Ana for a pre-existing condition that was not declared at the point of sale.[41] Again in 1635 Juan de Torrijos wanted compensation from

[38] Doctor Anzures is said to have charged no fee in AGN Bienes Nacionales vol. 457 exp. 5 'El Br. Jerónimo de Valladolid, mayordomo de Nuestra Señora de Guadalupe solicita que se concedan médico y medicinas a un esclavo suyo,' México, 1679. The idea that doctors were expected to perform charitable works for free among the poor and needy had its roots in medieval times and despite attempts to professionalise it in the fifteenth- and sixteenth-century, was included among the legislative requirements once the medical laws began to be written down from 1477. See Muñoz, ed. *Recopilación*, Chap XIII section I, 107.
[39] Arias de Benavides, *Secretos de cirugía*, chap. 28, 68.
[40] The original reads, "de grave enfermedad de que fue curada, por los doctores, Joseph de Valencia y Bartolomé paresio y despedidos los dichos médicos de la dicha enferma por reconocer su enferemedad por incurable, fue llamada para curarla Ana de Vega, mulata," in AGN Inquisición vol. 429 exp. 4 fols. 209-283, 'Proceso contra Ana de Vega mulata *curandera* por hechicerías,' Puebla, 1647.
[41] AGN Civil vol. 730 exp. 2 'Alonso Gaspar de Contreras, presbítero, contra Marcos Matías sobre que anule la venta de una negra llamada Ana, que se le vendió por 630 pesos,' México, 1596.

Agustín de Mendícula for the costs of surgeons, doctors and medicines that have been used to treat his slave. His case is supported by a testimony from the surgeon Juan Gutiérez.[42] Similarly, in the previously mentioned cases of Doña Mencia de Ulloa and of the Sanctuary of Guadalupe both are seeking recompense for extensive and costly treatments for their slaves, Juliana and Miguel respectively.[43] It is important to remember in the cases of these Black slaves that, while the fact that they received treatment at the hands of Spanish physicians is significant regarding the exposure of different races to each others' medicine, as cases of patient preferences they reflect those of the Spanish slave owners, and not the slaves themselves.

Arias de Benavides asserts that the Indians were "huge enemies of doctors and surgeons if not forced [to use them] by necessity,"[44] and, indeed, examples of Indian treatments at the hands of Spanish physicians are not forthcoming. Even in hospitals, many of which were designed specifically with Indian patients in mind, as will be explored in the coming chapters, they proved reluctant patients. It seems likely that some of the same reasons – such as cost and availability – that deterred Spanish patients from employing Spanish physicians would also have applied to the Indian patients. More relevant, perhaps, was the fact that the methodologies and beliefs of Spanish physicians were somewhat alien to them and they preferred to continue being treated according to methods they

[42] AGN Bienes Nacionales vol. 326 exp. 20 'El Br. Juan de Torrijos presbítero contra el doctor don Agustín de Mendícula presbítero sobre la venta de un esclavo, por decir que tenía enfermedad,' México, 1635.
[43] AGN Bienes Nacionales vol. 79 exp. 18 'Doña Mencia de Ulloa viuda de esta ciudad contra el Bachiller Joseph Bustron de Chavarría, presbítero, vecino de las minas de Pachuca, sobre redhibitoria de una esclava' México, 1664; and AGN Bienes Nacionales vol. 457 exp. 5 'El Br. Jerónimo de Valladolid, mayordomo de Nuestra Señora de Guadalupe solicita que se concedan médico y medicinas a un esclavo suyo,' México, 1679.
[44] The original reads, "enegmísima de médicos y de cirujanos si la necesidad no les constriñe mucho," from Arias de Benavides, *Secretos de cirugía,* chap. 5, 37.

understood, although as demonstrated in Chapter 6, the colonial circumstances meant that change was sometimes forced upon them.

Such reasons would only have been compounded by the likelihood that, certainly in the very early days, Spanish physicians may have been reluctant to experiment with local medicines. Oviedo, talking about the *manzanillos de las avellanas* (Indian nut – a type of purgative), comments that in the early days Spaniards experimented with the plant's effects themselves since the Spanish doctors "neither knew of them or of how to apply them."[45] Pedro Arias de Benavides notes thirty years later that "in order to protect their own interests" there is reluctance among the Spanish physicians to use, for example, the maguey plant, despite its obvious merits. Indeed, he notes that physicians "often ask him why he uses it so frequently given the risks involved in doing so; that if a cure were to go wrong there is nothing written about how to rectify the damage as it is an unknown plant."[46]

Despite the enthusiasm abounding about the local remedies and the fact that experimentation was even officially encouraged, seen for example in the *Recopilación de las leyes de las Indias* which clearly asks doctors to "gain experience and experiment as much as possible" doctors continued to be somewhat reticent.[47] This was no doubt in light of views expressed in the early laws of practice that doctors were culpable if injury or death resulted from the

[45] Oviedo y Valdés, *Historia General*, part I, book X, chap IV.
[46]The original reads, "los médicos de aquella tierra no están bien con él, a causa de sus intereses y provechos, que tratando yo algunos veces con ellos de este maguey, me decían que para que me aprovechara tanto de este maguey, que si alguna vez me acaeciese mal alguna cura, que no tenía cosa escrita por donde me salvar del hierbo, por ser cosa incógnita. Por Dios bendito, a mi siempre me fue bien con él," in Arias de Benavides, *Secretos de cirugía*, chap. 16, 50
[47] *Recopilación de leyes de los reynos de las Indias*...3 vols (Madrid, 1681), book V, titulo VI, http://www.congreso.gob.pe/ntley/LeyIndiaP.htm. (12 November 2011).

application of remedies that they did not know how best to apply.[48] This view is echoed later in colonial works such as the Fray Juan Bautista's 1599 *Confessario* in which he asked for doctors to be questioned on whether "they have given medicines that are not previously known to work and with which the patient got worse."[49] Such reluctance to experiment under new circumstances and to encourage the use of local medicines that were, no doubt, cheaper than imports may well have also deterred Spanish patients from employing Spanish physicians, or encouraged them to look elsewhere. Indeed, in 1618 a Dr Cisneros - doctor of the Viceroy Marquis of Guadalcazar – complained that the herbalists of Mexico City had more clients, Spanish and Indian, than any accredited doctors or pharmacists.[50]

Alongside the Spanish physicians worked the Indian physicians, in some cases literally, as in the Hospital de los Indios (Royal Indian Hospital). Here they were exposed to the practices of Spanish humoral medicine, which began to be reflected early on as seen in works such as the *Codex Badianus*. Although, as previously discussed, a legitimate space was made for these Indian doctors to treat other Indians, particularly within the early colonial structure, relatively little is known about them and references to them are scarce in contemporary sources. They are perhaps most famous in their role as informants to figures such as Hernández and Sahagún. In the case of Hernández, furthermore, such information

[48] See, for example, Muñoz, *Recopilación*, chap. XIII sec. VII, 164.
[49] Fray Juan Bautista, *Confessario en lengua mexicana y castellana* (México: Melchior Ochoarte, 1599), 26-27, http://www.primeroslibros.org/page_view.php?id=pl_blac_046&lang=en&page=1, (12 November 2011).
[50] Viesca Treviño, "*Curanderismo*," 55.

was not being given in an anthropological study but in a professional capacity – doctor to doctor.[51]

While it seems eminently possible that the same factors that recommended Indian physicians to the Spanish authorities, as both legitimate practitioners and vital informants, alongside factors considered above such as the Spanish physicians' ignorance of local plants and reluctance to experiment with them, would have recommended them as practitioners to members of Spanish society, and there are hints that this was indeed the case, such as the previously mentioned case of Don Antonio de Mendoza, the historical record is sparse and any such notions remain speculative.

Confusion may well have also arisen from the fact that while, on the one hand, these physicians were expected to act as informants to the Spanish and to work alongside them in hospitals, they were not allowed to actually treat Spanish patients. Furthermore, even those who were allowed to practise could easily face retribution if their practices strayed into domains considered heretical by the Spanish authorities. The acceptance of a degree of indigenous legitimacy probably served to further blur the boundaries between which practitioners were or were not approved of and the criteria by which such decisions were made.

It is finally worth considering that some Spaniards would *not* have sought the services of Indian doctors. In much the same way that many of the doctors took a

[51] Viesca Treviño, "*Curanderismo*," 55 and Emmart, *Badianus manuscript*, 24, cite the names of the indigenous doctors who were informants for Sahagún as: Gaspar Matías, Pedro de Santiago, Francisco Simón, Miguel Damián, Felipe Hernández, Pedro de Requena, Miguel García and Miguel Motolinia. In the Sahagún, *Florentine Codex*, Book X, 163, different names are given for doctors who consulted on the compiling of lists of vocabularly relating to anatomy of physiological processes: Juan Pérez (of San Pablo), Pedro Pérez (of San Juan), Pedro Hernández (of San Juan), José Hernández (of San Juan), Miguel García (of San Sebastián), Francisco de la Cruz (of Xiuitonco), Baltasar Juárez (of San Sebastián) and Antonio Martínez (of San Juan) .

more conservative approach to the new medicines, so too may have been the preference of some Spanish patients. Furthermore attitudes to indigenous physicians appear to have changed with time. Despite seemingly auspicious beginnings, their shaky position within the colonial structure appears to have been eroded throughout the course of the sixteenth century, not least in the wake of austere reforms occurring on the Peninsula following the Counter-Reformation, which created a colonial landscape in which the use of indigenous informants was increasingly suppressed and the Colegio de Santa Cruz de Tlatelolco was shut down. Thus the professional standing of indigenous physicians, even those sanctioned by the Spanish authorities was cast into doubt. They were discredited by increasing numbers of Spanish doctors arriving in Mexico, or qualifying in the university towards the latter part of the sixteenth century. Thus, while their herbal knowledge was held in high regard, there were multitude references to the deficiencies of their medical techniques and ignorance of humoralism, not least by Hernández, which are discussed in later chapters. While this was almost certainly driven, in part, by professional territorialism, nevertheless such views probably informed the opinions of more conservative Spanish patients. [52]

It is important to note that although they were being discredited with increasing frequency, evidence does exist that legitimate Indian doctors continued to practise later into the sixteenth century and even beyond. In 1618 Diego Cisneros chastises Indian doctors' prescription of hot maize drinks (atole) for breaking dietary rules, and even in 1689 Fray Agustín de Vetancurt spoke of "herbalists and native

[52] This is the point at which Viesca Treviño believes that many of indigenous doctors began to effectively function as *curandero*s, see Viesca Trevino, '*Curanderismo*,' 54.

doctors" practising publicly with some official recognition; indeed, he consulted some regarding the properties of certain plants for his *Teatro Mexicano.* [53]

Apothecaries

As with other medical practitioners, license stipulations for *boticarios* in Mexico were the same as they had been on the Peninsula. And, indeed, in much the same way previously noted, the Mexican *cabildos* appear to have relaxed their standards and checks for pragmatic reasons. Again, in the case of apothecaries there was a blurring of the lines and, in much the same way that some surgeons owned pharmacies, so too did some pharmacists behave more like doctors or surgeons, examining patients and writing prescriptions.[54] Indeed, in 1527 the *cabildo* of Mexico City authorised Cristóbal de Ojeda to visit the pharmacies of the city and license individual practitioners to treat patients with surgery, not least towards the treatment of *bubas* (buboes).[55]

In view of the drastic shortage of apothecaries the *cabildos* allowed them to practise without a license for two years before presenting a certificate.[56] A degree of pragmatic oversight had been present in mainland Spain, but never to this degree; rather the Crown had, on occasion, stepped in to foil attempts by the *protomedicato* to pragmatically bow to the circumstances.[57] Indeed, even the two year waiting rule appears to have often been waived, with pharmacists themselves

[53] Viesca Treviño, "*Curanderismo*," 55.
[54] See De Vos, "Art of pharmacy," 16; and Quezada, *Enfermedad y maleficio,* 22.
[55] Ida Altman, "Spanish society in Mexico City after the conquest," in *Hispanic American Historical Review* 71 (1991): 433.
[56] Memarzadeh, "Medical practitioners," 341; and Lanning, *Royal protomedicato,* 45.
[57] Lanning, *Royal protomedicato,* 26, gives an example of the Crown ruling against the *protomédico* issuing a license without presentation of the full paperwork.

able to justify continued practise in view of the lack of trained professionals; a reason that appears to have been accepted by the authorities.

Inspections of the *boticas* that were supposed to ensure the quality and prices of the medicines on sale, along with imposing restrictions on the sale of certain purgatives, narcotics and abortives, also appear to have been irregular. And while women were officially banned from owning or running *boticas*, this is also a law that seems to have been frequently overlooked or flouted, particularly following complaints from widows who had inherited them. Indeed, while on paper it was more difficult for shoddy or illegal apothecaries to hide from the authorities as they worked from fixed locations, the reality was that the authorities granted them considerable leaway to practise with substandard paperwork and qualifications in any respect.[58]

Although *boticarios* are certainly a category of practitioner, they will be dealt with in greater depth in the following chapter since, although there were exceptions as noted above, pharmacists were not supposed to administer treatments, but provide drugs and medicines from fixed locations. As such, for the purposes of the current study, they are better studied as places for the exchange of goods and services.

Surgeons

José María López Piñero asserts that one major impact that the New World discovery had on doctors was that medicine quickly became based on observation

[58] See, De Vos, "Art of pharmacy," 47-49; and Quezada, *Enfermedad y maleficio, 2*2.

and not direct learning.[59] While this certainly began to occur later, with physicians such as Hernández who, from 1570 onwards, responded to the invigorated demand for investigation set out by the Crown, in the earliest days, physicians were somewhat constrained by their theoretical training. The opposite was true of surgeons, who, by virtue of being practically trained, were better placed to respond to the new practical demands on the ground in the New World. This was certainly the case of those surgons accompanying conquistadores during the earliest days in the New World – an adaptability reflected in Captain Bernardo de Vargas Machuca's work.[60]

It is clear, for example, from the early works of surgeons such as Alonso López de Hinojosos and Pedro Arias de Benavides that surgeons were expected and able to adapt quickly to the New World circumstances, with both incorporating several New World remedies into their works. Indeed, the simple fact that it was a surgeon, López de Hinojosos, and not a doctor who produced the first medical text in the New World is itself indicative. López de Hinojosos himself comments that while an ideal surgeon needs theory and good hands, it is ultimately in working with their hands, and not with medical rules that they provide good service; as artists more than scientists.[61] Pedro Arias de Benavides' work is peppered with references and observations about new plants and remedies, according to the outcome of his own experiments. Indeed, he regularly displays confidence enough in his own observations and experiments to disagree with

[59] López Piñero, *Ciencia y técnica*, 279.
[60] Vargas Machuca was involved in the Spanish campaigns in the New World, although he never gained the fame of some of his compatriots. Written in 1599, this book, colloquially known as the 'conquistador's handbook' is a guide to military strategy and includes a section on battlefield medicine and surgery, incorporating some New World remedies, see Captain Bernardo de Vargas Machuca, *The Indian Milicia and description of the Indie,* ed. And introduced by Kris lane and trans. Timothy F. Johnson. (Durham and London: Duke University Press. 2008).
[61] López de Hinojosos, *Suma y recopilación de cirugía,* 80.

physicians' opinions. For example in his dislike of *palo santo* water he notes that, despite the bad qualities that he outlines, it is, nevertheless, used by some doctors who have had good outcomes with it.[62]

Arias de Benavides' observations about *palo santo* are interesting for various reasons. Firstly because they demonstrate that, while perhaps not as much as surgeons, doctors were experimenting, albeit a little, even at this early stage. Furthermore, coupled with some other remarks in his book, these comments suggest that professional discussions were occurring between medical practitioners, sharing the experiences and outcomes of their experiments. Perhaps most relevant for the study at hand, and implicit in Arias de Benavides' commentary, is the notion that, different practitioners favoured different treatments according to the outcomes of their own experiments. This is a key point for understanding the medical pluralism that would have resulted from the New World circumstances, even amongst the licensed few, as each medic responded to the situation in their own way.

While again in the case of Indians it seems that contact with surgeons was reluctant and limited to hospital encounters, among the Spanish population it seems likely that surgeons would have been a more popular choice than physicians. Examples of their early, and exclusive, use by Spaniards can be found, such as Juan Franco's reference to the penile ulcer that he had removed by surgeons, without physicians present, on Hispaniola as early as 1511.[63]

[62] Arias de Benavides, *Secretos de cirugía*, chap. 45, 84.
[63] AGN Inquisición vol. 38 exp. 1 fols. 1-45 'Proceso contra Juan Franco, lapidario, por hechicerias: porque hazia una india suya que echaze suertes para saber cosas del futuro,' Mexico, 1536.

Blacks again appear to have regularly been subjected to treatment by surgeons, alongside and exclusive of physicians, at the behest of their masters. Thus, although considered below physicians within the elite medical hierarchy, the role that surgeons played in the new colony was arguably greater. Furthermore, the acute lack of physicians meant that the Spanish authorities sometimes authorised surgeons to treat "medically" too.[64] López de Hinojosos was himself said to work as a *médico* and an *enfermero* alongside his recognised position as a surgeon.[65] As briefly examined, the popularity of surgeons was perhaps even in part because the nature of their profession meant that they were more adaptable to the new World circumstances; a trait which, when combined with other factors, not least cost and availability, almost certainly saw them recommend themselves to a greater number of patients.

The important role surgeons played in the colony was not overlooked by the authorities. In Mexico City in 1531 Diego de Pedraza, a surgeon, was charged with finding out by what right "physicians, surgeons, and those who cure by charms and all those who treat sickness and apply ointments" were practising.[66] In 1541 the same Diego de Pedraza was granted a familial coat of arms by Charles V in recognition of the services that he gave during the conquest, not least as a campaign surgeon.[67]

[64] Quezada, *Enfermedad y maleficio,* 18. based on examples from Xalapa, Perote, Córdoba and Orizaba where they used regimental surgeons.
[65] Somolinos d'Ardois, *El cirujano López de Hinojosos,* 532-533, apparently corroborated by information from the Viceroy and doctor Bravo in their licensing documents.
[66] Lanning, *Royal protomedicato,* 48.
[67] María Luisa Rodríguez-Sala, *Los cirujanos de hospitales de la Nueva España (siglos XVI y XVII): miembros de un estamento profesional o de una comunidad científica?* (México: UNAM, Instituto de Investigaciónes Sociales, 2005), 261-2.

It is finally worth making reference to the intriguing figure of Guillermo Cornielles (or Guillermo Ricart or John Martin) who is the first surgeon of non-Hispanic origin recorded in Mexico. This Irishman, native of Cork, ended up in Mexico City, by way of Europe and the high seas on the pirate ships of John Hawkins, where he befriended Viceroy Luis de Velasco and, no doubt as a result of this friendship, ending up working at the Hospital de Nuestra Señora de la Concepción. This was followed by further stints working with the surgeon Domingo Juárez, the barber Rodrigo de Figueroa and the barber-surgeon Diego Bernal. Although no precise date is known the death of Luis de Velasco in 1564 puts these events within the first 50 years of the Conquest. [68]

Barber-surgeons and other empirics

It is worth first briefly noting that while barber-surgeons and empirics are being categorised separately, in order to reflect Spanish categories, any distinction made between surgeons (particularly romance surgeons) and barber-surgeons and specialised empirics is almost imagined. In reality, the practices of these men were often barely distinguishable, as previously discussed. Indeed, there was a fluidity that saw figures such as López de Hinojosos able to work his way up from humble beginnings as a barber to possibly the most famous surgeon in Mexico of his time.[69]

The first known licensed surgical practitioner practising in Mexico was in fact a barber-surgeon; Francisco de Soto is noted in the *cabildo* records earning a salary

[68] Rodríguez-Sala, *Los cirujanos*, 264-265.
[69] Somolinos d'Ardois, *El cirujano López de Hinojosos,* 537.

of 50 pesos a year working as the city barber-surgeon in 1525.[70] It seems that the Mexican authorities attempted to compensate for the inevitable shortage of physicians and Latin surgeons by adopting strategies aimed at increasing the number of barber-surgeons and empirics from an early date. Once again, however, this ambition appears to have been approached by relaxing the standards for licensing and approval. In 1531, for example, Alonso Guisado contested an order from the *cabildo* that he not be allowed to practise without license, presenting in his own defence a record of successful treatments and cures, and evidence of his free treatment of the poor. The *cabildo* relented to grant license with caveats that saw Guisado restricted to treating only genital sores and ulcers. This does not mean that the Mexican authorities were recklessly abandoning all quality checks, and that anybody could gain license; only a year before Guisado's case, Bartolomé Catalan was refused license to treat people of *bubas*, despite an acute shortage of practitioners in this field.[71] Nevertheless, it seems that unlicensed empirics, such as Guisado with a proven ability and successful track record were able to gain license without examination, and thus be regarded as licensed, and ideal, practitioners. Where before the criteria had been based around tangible proofs such as certificates and formal examinations it was now centred on less solid evidence, such as reputation. While this had often been the case on the mainland, in Mexico it became openly sanctioned by the local authorities.

Adding to the confusion was the fact that, of all of the medical professions, these empirics were the hardest to track down as they were mobile. Furthermore, for

[70] Rodríguez-Sala, *Los cirujanos*, 258.
[71] For both examples, see Lanning, *Royal protomedicato*, 32.

bloodletters (and midwives) *limpieza de sangre* was not a requirement.[72] Perhaps as a result of this it seems that other colonial races managed to intrude into these specialties during the early colonial period. While Maher Memarzadeh's research indicates that it was only after the mid-seventeenth century that Indian and *mestizo* surgeons begin to appear in the archival record and as late as the eighteenth century that cases of Black surgeons can be found, he nevertheless relays two early cases; one of an *indio barbero* practising in Mexico City in 1600 called Jusepe Juarez who speaks fluent Spanish, and in 1641 mention of Anton de la Cruz, a *chino barbero* practising in Calle Santo Domingo in Mexico City. [73]

Priests

Priests and friars were certainly among the most significant healthcare providers in New Spain, not only in hospitals, where their presence was a legal requirement, but across the colony. As in Spain, as part of the literate minority with certainly a degree of exposure to the theories of medicine they were to play a key role in the dissemination of medical care. In Mexico this was a key role particularly in remote areas and within indigenous communities. Although, as in Spain, they were forbidden from such practices, their charitable calling meant that they would rarely have ignored the needs of the people and the tradition of *medicina clericalis* continued. Ministering to all three races, it appears that the biggest impact that such priests were to have was on the poor and indigenous members of society. This was not exclusively the case, as seen by Fray Lucas de Almodóvar's

[72] Quezada, *Enfermedad y maleficio,* 16.
[73] AGN Bienes Nacionales vol. 810 fol. 1, México, 1600 and AGN General de parte vol. 8 exp. 66 fols. 46-47, cited in Memarzadeh, "Medical practitioners," 135.

treatment of Viceroy Antonio de Mendoza in Mexico City, who was said to be "fed up with doctors."[74]

Although it is important to briefly note here the role played by priests in the New World as medical practitioners, they will be considered in greater depth in Chapter 4 particularly in the context of hospitals, and in Chapter 6 where their role in the spread of humoral medicine will be considered.

Popular healers and *curanderos*

The term *curandero* in the context of colonial Mexico, as in Spain, has tended to become almost synonymous with witchcraft and superstition. This reflects in large part the nature of the historical sources. *Curandero*s often appear accused of indulging in superstitious and magical practices, divining, curing the evil eye or conducting love spells using a heady mix of unnamed powders, mumbled incantations and spells. For example, the *mulata curandera* Barbola de Zamora, was accused of witchcraft in 1565, not least for curing cases of the evil eye using "words forbidden by the church," amongst other things.[75] During her cross examination, however, Barbola reveals that she has also cured "broken and dislocated arms and legs" by "straightening bones" or "in cases of rugged breaks binding the bones together with an *escopolo* on top to hold them and pitch and mastic and incense." Alongside her use of incantation, Barbola's case reveals a

[74] Fields, *Pestilence and headcolds,* chap. 2 para. 71-74.
[75] AGN Inquisición vol. 38 exp. 11 fols. 238-268 'Proceso contra Barbola de Zamora, por hechicera' Zacatecas, 1565.

clear, even advanced, understanding of medical techniques and therapies which are being applied to tangible physical complaints.[76]

Barbola is not alone. While it is certainly true that *curandero*s are often revealed in contexts which show them indulging in magical or superstitious practices, the archives reveal that such methods were often conducted in conjunction with more standard medical practices. This is seen, for example, from the early case of the *morilla partera* in 1536 who, alongside the use of religious incantation, also employs oils to treat pregnant women, cuts a *lepra* (leprous growth) from one of her patients and treats Alonso Ortiz of a dog bite.[77] There is also the 1562 witchcraft case against Isabel Vera who, applies unguents that she mixes herself to an ulcerated foot,[78] and the 1664 case against the *mulata partera* Estefanía de las Reyes who, distributes love potions but also aids 'women's troubles' ('mal de madre') in her role as *partera* (midwife).[79]

Many of these *curandero*s had ample knowledge of the Spanish and indigenous pharmacopoeia. Indeed, in the case of Barbola de Zamora, the products she uses to treat her patients come exclusively from Europe and are all provided by the local pharmacies. Ruiz de Alarcón also showed that, amongst the indigenous

[76] The original reads, "Preguntada que de que otras enfermedades a curado dixo que de brazos y piernas quebrados o desconectados. Preguntada como los cura dixo que cuando es desconectado que estando hablando con la persona que esta con el mal le iguala los huesos y cuando es quebrado los junta y les pone encima un escoplos [defined by RAE www.rae.es as an instrument for cutting bones or a chisel] y pez [tar] y almáciga [mastic] y incienso y que desta manera a curado muchas personas y las a sanado sin ensalmos ni santiguando ni diciendo palabras ni otra cosa," in AGN Inquisición vol. 38 exp. 11 fols. 238-268 'Proceso contra Barbola de Zamora, por hechicera' Zacatecas, 1565.

[77] AGN Inquisición vol. 38 exp. 2 fols. 50-112 'Proceso contra Marta, esclava de Pedro Pérez, y contra la morilla, partera, y María de Espinosa, esclava de Maestre Diego, e Margarita Pérez, y Anton Indio, por hechicerías' México, 1536.

[78] AGN Inquisición vol. 38 exp.10 fols. 212-237 'Proceso contra Isabel Vera por haber curado en Guayangareo con cabezas de carnero y otros hechizos,' Michoacán, 1562.

[79] AGN Inquisición vol. 599 exp. 15 fols. 538-546 'Estefanía de los Reyes, mulata libre de oficio de partera y *curandera*, por superstición' México, 1664.

*curandero*s many empirical methods were being used, including massage.[80] The use of such products and practices will be considered in greater depth in the following chapters but is worth noting here as a counterbalance to the notion that colonial *curandero*s only dabbled in magic. Certainly magic would have formed an integral part of the healing and curing process, particularly in the unlicensed domain where many practitioners would have been providing the kinds of services that legitimate doctors could not. This was not, however, always the case.

Indeed, while some *curandero*s mixed magic and superstition with more rational elements into their treatments, depending on what problem or sickness they were dealing with, others appear to have treated in much the same way as licensed empirics would have done. This appears to be the case, for example, with Tomás Mandinga, a Black *curandero* accused of witchcraft by Melchor Pérez Murillo, a surgeon, in 1584. Juan Albehar Osorio, Tomás' master, stands in his defence claiming that the accusations of witchcraft were in fact perpetrated by Melchor Pérez Murillo, a "simple surgeon" (*mero cirujano*) and other medical practitioners jealous of Mandinga's ability:

> I, Juan Albehar Osorio, *vecino* of this port say that it has recently come to my attention that because a bozal negro of mine, called Tomás Mandinga, apparently cures other negroes with roots and herbs, other curers, out of envy and fear that my negro will take away their business, have argued that he is a witch. [81]

Osorio flatly denies any accusations of witchcraft (although it is worth noting that he may well have been nervous that his slave would otherwise be confiscated),

[80] See for example, Coe and Whittaker, *Aztec sorcerers,* 39. See also Fields, *Pestilence and headcolds,* chap. 2 para.68.

[81] The original reads, "Juan Albehar Osorio vecino de este puerto digo que de pocos días a esta parte ha venido a mi noticia que a causa de que un negro mio, bozal, llamado Tomás Mandinga, dicen que cura con raíces y hierbas a otros negros y otras personas interesadas que asimismo curan, de envidia y pesar de que les parece que el dicho mi negro les quita algunos provechos, la han argüido que es hechicero, "in AGN Inquisición vol. 213 exp.7 fol.39, quoted in Memarzadeh, "Medical practitioners," 139-157.

proudly claiming that this bozal slave has cured his own wife, an Indian, of gastro-intestinal problems with a Guinean root called guayacán. Tomás confirms that he has been curing for years and using this Guinean root called guayacán. This is in fact an American plant so it would seem that he is adopting it for properties that were similar to plants that he had used in Africa. In fact he claims that the surgeon Murillo asked him to share his knowledge on the application of various roots and herbs. As in the earlier case of the slave Juliana remembering diagnoses from home, the case of Tomás highlights the possibility that Blacks curing in Mexico did so based on previous roles and knowledge from Africa.[82]

Although in this case it is a Creole seeking to learn from a Black *curandero*, Solange Alberro shares another case of such instruction of Spaniards by *curandero*s, this time of an Indian teaching magical medicine to Francisco Castillo Maldonado, the *corregidor* (magistrate) of the wealthy town of Atlixco, in 1660. Maldonado has apparently been "studying" with this Indian for five months to better understand his practices.[83]

While cases of instruction at the hands of *curandero*s are rare, it is clear that, alongside Blacks and Indians, Spaniards were more than willing to submit to treatment as patients at the hands of *curandero*s of all colours, despite notions of

[82] This possibility is briefly mentioned in Herbert Klein, "Blacks," in *The countryside in colonial Latin America,* eds. Louisa Schell Hoberman and Susan Migden Socolow (Albuquerque: University of New Mexico Press, 1996), 180, where he proposes that many African healthworkers continued in the role in Latin American settings. Although not specific to Mexico but to Colombia, see also Kathryn Joy McKnight, '"En su tierra lo aprendió:" An African *curandero*'s defence before the Cartagena Inquisition," in *Colonial Latin American Review* vol. 12 no. 1(2003): 63-84; and Maya Restrepo, "Botánica y medicina," 27-47 where she argues that not only did these Africans bring their knowledge over with them, which they openly acknowledge, but they passed it on to their children.

[83] AGN Inqusición 342, exp 3 'Información contra Francisco del Castillo Maldonado, corregiror de Atlixco...por ser brujo y blasfemo,' Atlixco, 1622, cited in Alberro, *Gachupín,* 130.

calidad (or 'worth' based on racial hierarchies).[84] From as early as 1536 we see Spaniards amongst the patients of the *morilla partera* and again in 1562 at the hands of Isabel Vera. Indeed, all of the patients cited in the case of the *negro mulato* Francisco de Puntilla in 1614 are Spaniards, seeking cures for conditions ranging from sciatica, to stomach aches and head pains, alongside the retrieval of lost goods.[85] Spanish priests and nuns are included on the patient lists, as in the case of the Ursula de San Miguel of the Monasterio de la Concepción in 1600 [86] and Hernán Sanchez Ordiales, the curate (beneficiado) of Cuacoman in 1624.[87] In this latter case the priest in question was further seeking remedy against witchcraft manifesting in an ulcerated leg. Indeed, in 1664 one of the patients that the *mulata curandera* Estefania de las Reyes is called to treat is one Doña Tello de Sandoval, the wife of Lázaro López de Guevara, a physician.[88]

During the early colonial period, while willing patients and participants, there are fewer cases of Spaniards acting as *curandero*s themselves. Exceptions do exist, such as the case of Cristóbal Pérez in Xochimilco said to have cured Indians of *viruela* (smallpox).[89] Generally, however, certainly during the early colonial

[84] Joan Bristol, "Curing to witchcraft," *2*, notes that "despite differences in calidad between clients and curers, consultations with indigenous and Afro-Mexican curers were routine events for colonial people of every caste" going on to suggest that notions of calidad might even have increased the demand for non-Spanish practitioners as Spaniards defined Africans and native Americans as unrefined and closer to nature, thus in possession of special mystical abilities.
[85] AGN Inquisición vol. 278 exp. 5 'Testificaciónes contra Francisco de Puntilla, negro, por embustero,' Michoachan, 1614.
[86] AGN Bienes Nacionales vol. 78 exp. 36 'Antonio de la Cadena solicita licencia para que un Indio *curandero* que entre en el Monasterio de la Concepción a visitar a la madre Ursula de San Miguel, su hermana, de una grave enfermedad que tiene,' Mexico, 1600.
[87] AGN Inquisición vol. 348 exp. 4 fols. 101-166 'Proceso contra Hernán Sanchez Ordiales beneficiado de Cuacoman en Michoacán, por haberse curado con una índia' Michoacán, 1624. Indeed, this priest confesses to having used several Indians before and the practices they are doing are not standard practices but involve, for example, sucking a wound on his leg which is the result of witchcraft.
[88] AGN Inquisición vol. 599 exp. 15 fols. 538-546 'Estefanía de los Reyes, mulata libre de oficio de partera y *curandera*, por superstición' México, 1664.
[89] AGN Criminal vol. 49 exp. 19 fols. 232-280 'Vejaciónes y mal comportamiento. Acusado: Cristóbal Pérez. Afectados: los naturales de Xochimilco' Xochimilco, 1649.

period *curanderismo* appears to have been dominated by Indians and Blacks. Often the Indians who appear are providing herbs and unnamed powders, with Blacks and Mulattoes acting as intermediaries between the Spaniards and Indians.[90] It is important to remember that Indians were excluded from the Inquisition process, which would have affected how frequently, and in what capacity, they appear in prosecutions. This is exemplified in the 1627 Inquisition case where, despite the fact that Ana an India *curandera* is said to have "infected" the city with herbs and powders, she is not being prosecuted.[91] Sherry Fields notes an increase in the number of *mestizos* and *castizos* in the field as the colony progresses (both as practitioners and patients) and while later deveopments are beyond the scope of this thesis, it would make sense, if for no other reason than that these groups came to dominate numerically in the colony.[92]

The important role played by women as both patients and practitioners of *curanderismo* has also been noted. Certainly, as these examples have shown, midwives are frequently amongst those accused of superstitious practices. As was the case in Spain, the role of midwife was a fragile one, sitting on the peripheries

[90] Examples of such cases include AGN Inquisición vol. 38 exp. 3 'Proceso contra María de Armenta por hechicerías' México, 1536, where the Spaniard is doing love spells with an *india* that a *negra* introduced her to; and AGN Inquisición vol. 38 exp. 5 fols. 143-147 'Proceso contra María de Barçena, por hechicerias,' Mexico, 1537, where María de Barzena does not conduct witchcraft herself but uses a *morisca* and an *india* with a *negra* as the go-between. For further discussion on racial power-play amongst subaltern groups, the assimilation of information by *castas* and blacks, and their role as intermediaries, see Aguirre Beltrán, *Medicina y magia;* Solange Alberro, "Negros y mulatos en los documentos inquisitoriales: rechazo e integración," in *El trabajo y los trabajadores en la historia de México,* ed. Elsa Frost (México: Colegio de México, 1979); Bristol, "Curing to witchcraft,"; and Laura Lewis, *Hall of mirrors.*

[91] AGN Inquisición vol. 360 exp. 12 fol. 31 'Testificación contra Ana, India, por hechicerías,' Zacatecas, 1627. For further discussion on the role of Indians, their appearance in Inquisition trials, and lack of punishment meted out to them, see Lewis, *Hall of mirrors,* 38-39. She says that Indians were "at the centre of the social forces that developed around witchcraft and were continuously implicated in the witchcraft of the non-Indians," although they were not punished as the point of the inquisition was to 'correct' those employing witches; "second order" acts of witchcraft committed by those receiving goods, powders, herbs, spells and services, which is precisely the kind of activity that the archives enable people to explore.

[92] Fields, *Pestilence and headcolds,* chap. 2 para. 71.

between legitimate and illicit medicine, and constantly subject to suspicion. In many of the cases examined here regarding treatment by women referred to as midwives, however, their patients were also said to include men and children, alongside women, which would suggest that for many the role was broadened to that of *curandera*. That many of the midwives in early colonial Mexico were drawn from Indian, Black and Mulatto populations is perhaps little surprise given the lack of Spanish women in the early colonial period. Indeed, if women, Blacks, Indians and later *mulatos*, *mestizos* and *castas* did dominate in the illicit medical domain this is understood not only because these races were numerically dominant in the colony, but all of the groups, with the exception of some Indians, were precisely those people forbidden from participating in any legally recognised form of medicine or healing.[93]

Who then were the Mexican *curandero*s? Great debate has surrounded this category of practitioner with scholars divided as to how best to categorise them. While John Tate Lanning defines them as people working in the peripherals of medicine, or coming into Mexico with incorrect paperwork, and continuing to practise, Carlos Viesca Treviño views them as degraded indigenous doctors, stripped of their professional status.[94] Sherry Fields further suggests that "the *curandero* was a specialist who claimed to have a unique intimacy with the supernatural elements of reality, a domain that was accorded an essential function

[93] For discussions of witchcraft particular to Mexico see Aguirre Beltrán, *Medicina y magia;* Solange Alberro, "Herejes, brujas y beatas: mujeres ante el tribunal del Santo Oficio de la Inquisición en la Nueva España," in *Presencia y transparencia: la mujer en la historia de México,* ed. Carmen Ramos Escandon *et al.* (México: El Colegio de México, 1987); Ruth Behar, "The visions of a Guachichil witch in 1599: a window on the subjugation of Mexico's hunter-gatherers," in *Ethnohistory* vol. 34 no. 2 (1987): 115-138; and Lewis, *Hall of mirrors.* Also relevant, although specific to Guatemala is Martha Few, *Women who live evil lives: gender, religion and the politics of power in colonial Guatemala* (Austin: University of Texas Press, 2002).

[94] See, Lanning, *Royal protomedicato,* 143-144; and Viesca Treviño, "*Curanderismo*," 47-65.

by all cultures in New Spain, although to varying degrees."[95] While scholars such as Gonzalo Aguirre Beltrán feel that the domain of the *curandero* was that of the mixed races, Noemí Quezada and Viesca Treviño see it as predominantly the domain of Indians.[96] Such bias informs scholarly notions of how *curandero*s entered the 'field', such as Sherry Fields' descriptions of how some were called in dreams and others were alerted by virtue of being born with physical defects. [97] The current study believes all of the above suggestions to be true; that as was the case for Spain on the eve of conquest, the term *curandero* is best understood to describe all "popular, technically illegal curers," working without a license.[98] Although it is briefly worth noting that it is not even entirely clear if the term always applied to unlicensed practitioners, but sometimes simply to lower ranking healers; for example in 1640 a doctor Manuel de Sosa is charged with checking the "titles" and "licenses" of all "apothecaries...doctors, barbers, surgeons and *curanderos.*"[99]

Clearly some *curandero*s had previously been Indian and African doctors, now of degraded status by the colonial circumstances. Some were purely magicians and enchanters, while others were Spaniards who never gained professional qualifications. While some *curandero*s learnt their trade via apprenticeship, others believed themselves gifted and others still were qualified physicians who "lapsed into the unofficial sphere by either making the transatlantic journey surreptitiously

[95] Fields, *Pestilence and headcolds,* chap. 2 para. 61.
[96] See, Aguirre Beltrán, *Medician y magia;* Quezada, *Enfermedad y maleficio;* and Viesca Treviño, "Curanderismo."
[97] Fields, *Pestilence and Headcolds,* chap.2 para. 63.
[98] Hernández-Sáenz and Foster, "Curers and their cures," 40.
[99] AGN General de Parte vol. 8 exp. 32 fol. 15 'Nombra al Dr Manuel de Sosa...para que visite por una vez por su persona donde pudiere y donde no por las que nombrare, que sean de entera satisfacción las *botica*s de esta ciudad y demas partes de esta Nueva España, excepto la de Los Angeles, Tlaxcala y Cholula y los titulos y licencia de los medicos barberos, cirujanos y curanderos, en la forma que aqui se refiere,' Mexico, 1640.

or by having legal problems in the Americas."[100] It is important to reiterate that, while the term carries connotations for the reader, often of those practitioners working in more supernatural arts, in actual fact it is simply a catch-all phrase to describe unlicensed practitioners. As was seen in the case of Spain, the term *curandero* was used to describe both witches and pre-licensed empirics. In Mexico too, while *curandero*s often appear in superstitious circumstances, the term itself is benign. In fact, the situation is often rendered even more confusing by the fact that there is a tendency to refer to all Indian healers as *curanderos* in the historical sources. In the archival case listed as an application for a *curandera* to attend a sick sister in a convent, the letter itself asks instead for "un indio que cura" and in another document where judges are discussing the suitability of candidates for the role of nurse to the Inquisition prisoners where one judge describes one candidate as a *curandera*, another describes the same candidate as an *enfermera* (nurse).[101] That is not to negate the importance of studies that have sought to elucidate race and gender patterns that emerge in this domain, but serves as a reminder that definitions that rely on these patterns overlook the fact that, in itself, the term *curandero* need not be considered meaningful or indicative of any such patterns.

Thus the skills and practices of *curandero*s would have been wide and varied, and in the context of colonial Mexico, this category saw Black, Indian and some Spanish healers, of various types, ministering to the diverse health needs of a vast and mixed colonial population. This same diversity would no doubt have been

[100] Memarzadeh, "Medical practitioners," 270-278. He cites AGN Inquisición vol.307 exp. 5 of an illegal Portuguese practitioner captured and the fact that amongst his sequestered goods are 36 medical texts showing that they were clearly not all charlatans. Indeed, in this case it seems likely that the question of legality came down to nationality and not training.

[101] AGN Inquisición vol. 573 exp.3 fols. 22-35 'Petición de Maríana de Tobar persona señalada para que entre en las carceles a la curación de los enfermos' México, 1656.

reflected in the multitudinous reasons why patients opted for certain treatments by certain *curandero*s. It seems likely that for some patients, the lower cost of these *curandero*s would have been a factor recommending them.[102] For other patients, however, the primary reason to employ *curandero*s would have been the fact that they related to elements of their own cosmovision that conventional medicine failed to address. As already demonstrated, in other examples it was the simple lack of alternatives that drove such decisions.

Furthermore, there was confusion over whether, or what, elements of the services offered by certain *curandero*s was subject to disapproval. The simple fact of acting as a *curandero* was not, in itself, considered a crime. It was elements of their practice, rather than the simple lack of a license that came under scrutiny. *Curandero*s themselves understood these risks, thus when denounced for witchcraft in 1678 for treating a child with a poultice and divination with eggs Ines, a *mulata partera*, is quick to try and legitimise her treatments claiming she's learned them from Spanish physicians, recognising that it was important for her practice to be recognised as curing, and not witchcraft.[103] But the boundaries were never clear, and the grounds on which judgements were made against *curandero*s appeared inconsistent and somewhat arbitrary. In the case from 1614 of the *morisca* midwife Anna María, for example, who is called to cure the sick Spanish child Gabriel de la Concepción of *mal de ojo,* the case seeks to prosecute those who conducted the *enhechizamiento* (bewitching) of the boy and not Anna María, despite the fact that she "helped him purge a ball of small snakes as thin as

[102] Quezada, *Enfermedad y maleficio,* 30, reports that fray Juan de Torquemada, the famous New World missionary and historian said curanderos did not draw out treatments irrespective of what they were paid ("no sabían alargar la cura para más ni menos paga") and the previously mentioned case of a *curandera* called Dominga who told the Inquisition that she cured sickenesses, like many other women, so that poor people did not have to pay the heavy prices charged by official doctors.
[103] AGN Inquisición 520:30 16-17, 1678, cited in Bristol, "Curing to witchcraft," 7.

bristles rolled like a ball of wool" which lead her to the conclusion that witchcraft was involved. Anna is not punished as a *curandera* in this case.[104]

[104] The original reads, "le hizo hechar por cámara con una purga una bola de culebrillas delgadas como cerdas rebueltas a manera de ovilla y la vio esta declarant el día que se purgó y la Anna María le dixo que tambien le avían enhechizados las dichas mugeres," AGN Inquisición vol. 278 exp. 2 'Testificaciónes contra Marco Ramírez e Isabel Aguilar por hechiceros' Michoacán, 1614.

Chapter 4

PLACES

This chapter aims to examine the various places where medical practitioners were working in early colonial Mexico. In this way the aim is to better understand the types of treatments available at different locations and, where possible, the types of patients attending in order to examine the possibility for, or evidence of, exchange. The focus here will primarily be on hospitals, drawing elements significant to the current study from the extensive archival research conducted and published by both Francisco Guerra and Josefina Muriel.[1] Hospitals were the formal manifestation of Spain's medical project and will therefore be assessed in order to evaluate the successful, or otherwise, implementation of the Crown's medical design in Mexico. The aim will be to try and evaluate what role hospitals played in early colonial Mexico. Some space will be dedicated at the end to consider other places, such as jails and convents, which were hosting medical practitioners and what was happening in them.

Mexican hospitals

As previously mentioned in Chapter 2, hospitals were a central element in Spain's medical project. In them care of the soul took precedence over care of the body and all-comers were accepted, not least Jews and Moors, whose conversion, it was hoped, would be made easier in such a charitable context. This was an idea that would prove particularly resonant in the New World, and one that was expressed in 1532 in a letter to Charles V from Fray Pedro de Gante, a Franciscan friar in

[1] Francisco Guerra, *El Hospital en Hispanoamerica y Filipinas, 1492-1898* (Madrid: Ministerio de Sanidad y Consumo, 1994); Muriel, *Hospitales de la Nueva España.*

Mexico, who confided his feeling that medical care in New Spain could be used as a conversion tool, "because thus they will know Christian charity, and be invited to join the faith and love us."[2]

With such a backdrop and confronted by similar circumstances in the New World it is little wonder that, from the earliest establishment founded by Fray Nicolás de Ovando in 1503 at San Nicolás de Bari on Hispaniola, hospitals were quickly founded across the new colonies in all of the guises in which they had existed on the Spanish mainland – from humble convent *enfermerías* maintained by a small group of people taking charge of duties from cleaning, feeding and caring, to great hospital centres with complex personnel structures similar to modern institutions. Josefina Muriel remarks that the importance attached to hospitals at this time is attested to by Bernal Díaz's idea that a "just and good" division of the wealth of New Spain would see one-fifth go to the King, three-fifths to Hernán Cortés, himself and the other conquistadors and "the remaining fifth towards the rent of churches, hospitals and monasteries."[3] In Mexico the first hospital, the Hospital de Nuestra Señora de la Concepción, was founded by Hernán Cortés in the capital, Tenochtitlan, within two years of the conquest, with estimates suggesting

[2] 'Letter VIII: letter from Fray Pedro de Gante to Emperor Charles, describing his evangelical work and teaching among the Indians; Mexico, 31 October, 1532,' in *Cartas de Indias* (Madrid: Ministerio de Fomento, 1877), 51-53, http://www.archive.org/details/cartasdeindias00fomegoog, (12 November 2011).

[3] Bernal Díaz del Castillo, *Historia verdadero de la conquista de la Nueva España*, vol. II (Mexico: Editorial Pedro Robnedo, 1939), 402, quoted in Muriel, *Hospitales de la Nueva España*, *35*. It is worth noting that in other versions of this text there is no mention of hospitals, see, for example, Bernal Díaz del Castillo, *The memoirs of the conquistador Bernal Díaz del Castillo,* trans. John Ingram Lockhart, vol. II (London: J.Hatchard and son, 1844), 396, where it states one-fifth for Cortés, one fifth and a half for churches and cloisters, and two fifths and a half to be shared among the conquistadors in perpetuity.

over one hundred hospitals had been built across Mexico by the end of the sixteenth century. [4]

As in Spain, the vast majority of early Mexican hospitals were the result of private or collective patronage or charity. While a few were founded by the Crown, by conquistadors, or by secular priests, it was most notably the religious orders who established them. Orders such as the Franciscans and Dominicans were amongst those establishing hospitals in the earliest days, but by the end of the sixteenth century other religious orders, such as *Juan de Dios* and the *Orden de los Hermanos de la Caridad de San Hipólito* had begun to specialise in the administration and care of the sick and taken over many of the old foundations. Nowhere was the hand of religion to be felt more powerfully than in the domain of hospitals; a position ensured by the Council of Trent (1545-1564)[5] declaration that all hospitals were to be dependent on the church, rendering them all religious institutions even if founded by the laity.[6]

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[4] Estimates vary slightly for the foundation year of the Hospital de Nuestra Señora de la Concepción although it is understood to fall between 1521-1524. Josefina Muriel suggests it might not have been the very first but that there were a couple of temporary precursors. See Muriel, *Hospitales de la Nueva España, 38.* Estimates for the number of hospitals in Mexico by the end of the sixteenth century range from 150 (Francisco Guerra) to 128 (Guenter Risse) to 120 (John Leiby) and as low as 33 (Rodríguez-Sala); See Guerra, *Hospital en Hispanoamerica*; John S. Leiby, "The Royal Indian Hospital of Mexico City, 1553-1680," *The Historian* 57 (1995): 573 ; Risse, "Medicine in New Spain," 41; María Luisa Rodríguez-Sala, *El Hospital Real de Los Naturales, sus administradores y sus cirujanos. ¿Miembros de un estamento ocupaciónal o de una comunidad científica?* (Mexico: UNAM, Instituto de Investigaciónes Sociales, 2005), 29.

[5] The Council of Trent was a 16th century ecumenical council of the Roman Catholic Church that met between 1545 and 1563 to pronounce on Protestant heresies and to define Church policy, issuing various reform decress. It was one of the most impressive manifestations of the ideals of the Counter-Reformation.

[6] The Council of Trent decree regarding hospitals came during the 25th (and last) session held under Pope Pius IV in 1563. See http://www.ewtn.com/library/councils/trent25.htm#4 'Decree concerning reform' chapter VIII 'Duty of the administrator of hospitals' (18 May 2012). In 1521 the conquistador Hernán Cortés founded the Hospital de Nuestra Señora de la Concepción in Tenochtitlan (following the example of Nicolás de Ovando in Santo Domingo in 1503, and subsequently Jorge de Alvarado in Guatemala in 1527); in 1539 Fray Juan de Zumárraga founded the hospital del Amor de Dios in Mexico City; and the Hospital Real de los Naturales was founded in Mexico City by the Crown in 1553. See Guerra, *Hospital en Hispanoamerica*, 44; and Josefina Muriel, "Los hospitales de la Nueva España en el siglo XVI," in *Medicina novohispana siglo XVI: historia general de la medicina en México, Tomo II,* coord. Gonzalo Aguirre Beltrán and Roberto

That the religious orders wielded so much power in the New World was a source of constant anxiety for the Spanish Crown, and thus hospitals were equally a source of anxiety.[7] Evidence of the Crown's attempts to maintain control over hospitals comes through the myriad laws promulgated to regulate hospital foundations in the New World during the first century of colony. The Crown quickly set about intervening in the funding and running of hospitals in the New World, beginning as early as 1509 when the Catholic Kings instructed Diego Colon to make provisions for the hospitals of La Buenaventura and La Concepción. Another *cédula* (bill) appeared in 1511 ordering every town to assign one hundred Indians to build hospitals. More fundamental was Charles V's *cédula* in 1541 ordering viceroys, audiencias and governors to found hospitals to cure the poor and exercise Christian charity. This was to be followed by another from Philip II in July 1573 recommending where hospitals be built (specifying that those for non-contagious diseases be built next to chapels and churches and those for contagious diseases outside the city walls and away from dangerous winds). Final control over the power to establish hospitals passed to the Crown with the *cédula* of 1574 specifying that no hospital, church or convent be built without royal consent. Fundamentally, however, such shows of authority by the Crown served little real purpose since the hospitals programme in the New World was entirely dependent on the participation of the secular and religious orders who

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Moreno de los Arcos (Mexico: UNAM, Academia Nacional de Medicina, 1990), 228. For more information on patron motivation see Muriel, *Hospitales de la Nueva España*. Rodriguez-Sala, *Hospital Real de los Naturales*, 26, gives a list depicting which sixteenth century hospitals resulted from collective or individual foundation.

[7] Conflict arose from clashing colonial intentions of evangelisation and commercial gain which effectively saw the emergence of two churches in the New World – one associated with colonial power and the other the missionary chuarch, see Juan Carlos Aquado Vázquez and Xóchitl Martínez Barbosa, "El concepto de caridad como fundamento de la atención médica en la Nueva España," in *Medicina novohispana siglo XVI: historia general de la medicina en México, Tomo II,* coord. Gonzalo Aguirre Beltrán and Roberto Moreno de los Arcos (Mexico: UNAM, Academia Nacional de Medicina, 1990), 272-273.

were "the most powerful social force and the only properly organised group to carry out medical care on a continental scale."[8]

How each hospital fulfilled its duty of care and what services were provided were at the mercy of several factors, not least founding vision, regional variability, and, most significantly, financing. Anybody wishing to better understand the varied funding models and support offered to specific hospitals would be best referred to the works on hospitals of Francisco Guerra, Carmen Venegas Ramírez and Josefina Muriel, among others. For the purposes of the current study, however, it is important to examine, albeit briefly, the various sources of funding available and to acknowledge the importance that funding, or lack of it, would have had on the structure and development of any given institution and thus the medical experience to be had there by a patient. [9]

Hospitals relied on external funding for their maintenance since the principles of charity which they embodied demanded that they provide their services to the poor, for free. Indeed, this became law when in 1585 the Third Mexican Provincial Council (*Concilio III provincial mexicano*) specified that "only the poor shall be treated in hospitals," thus prohibiting that any hospital receive payment for medical, hospital or food services from the patients.[10] Hospital

[8] Francisco Guerra, "Role of religion," 180. For another overview of the issuing of royal *cédulas* see also Roberto Campos-Navarro and Adriana Ruiz-Llanos, "Adecuaciones interculturales en los hospitales para Indios en Nueva España," *Gaceta Médica de México* 137(2001), 598.
[9] See Guerra, *Hospital en Hispanoamerica*, 45-46; and Muriel, *Hospitales de la Nueva España*. For a brief overview see Campos-Navarro and Ruiz-Llanos, "Adecuaciones interculturales," 59.
[10] *Concilio III provincial mexicano: celebrado en México en el año 1585, confirmado en Roma por el Papa Sixto V, y mandado observar por el gobierno español en diversas reales órdenes / ilustrado con muchas notas de Basilio Arrillaga ; y un apéndice con los decretos de la Silla apostólica relativos a esta Santa Iglesia* , coord. Maríano Galván Rivera. (Barcelona : Imprenta de Manuel Miró y D. Marsá, 1870), 303-304. The *concilio* document further states "not to receive or apply medicines in hospitals to any sick person who could cover the costs of such treatments themselves. If for any reason they have to enter the hospital then it must be on the clear condition that they must reimburse the hospital for the costs of their treatment and must further give alms,"

funding came instead from a variety of sources: town councils, wealthy donors (including some Indians), patient inheritances, papal grants, the collecting of *limosnas* (alms), and from the Crown.[11]

The Hospital Real de los Naturales, was exceptional in being the first hospital subject to *patronato real* (royal patronage). Alongside royal support, revenue was generated from a variety of alternative sources including a 1577 grant from Viceroy Martín Enríquez of "seven *caballerías* of land in Tepayaca," the notorious 1587 medio real, Luis de Velasco's 1595 donation of "a quarry in the jurisdiction of Ixtapalapa," and even from the building of a theatre.[12] Similarly, the Hospital de Nuestra Señora de la Concepción had its own unique mix of financial support. Supplementing the eternal financial assurance made by Cortés in his will was papal support – ranging from the *diezmos* (compulsory ecclesiastical tithes) granted by Clemente VII to Paulo III, Gregorio XIII and Julio III's pleas to the faithful to give to the sick – grants from Fray Zumárraga to pay the surgeon, rents from the shops that flanked the hospitals and alms collected by the associated *cofradía* (confraternity or brotherhood).[13]

Most hospitals, rich or poor, grand or humble tended to have an associated *cofradía* to help them. On the whole larger and wealthier hospitals, namely those in the capital city, did not depend entirely on the help from their *cofradías*. In

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("no reciba en los hospitales ningun enfermo á quien se apliquen medicinas, pudiendo cubrir su importe á su propia costa. Si debe entrar a ellos por alguna causa justa que hubiere para su admision, póngasele la condición de que ha de restituir al hospital los gastos que se erogaren en su enfermedad, y que ha de dar tambien alguna limosna, á no ser que otra cosa estuviere dispuesta segun la voluntad del fundador").

[11] Although Muriel, "Los hospitales," 229, states that such use of Crown money was unusual.

[12] One *caballería* was equivalent to about one and a third acres. The medio real was a levy put on Indian communities in 1587 by the Viceroy based on maize production consisting of a measure of maize per hundred collected by Indians on communal lands in New Spain, see Venegas Ramírez, *Régimen hospitalario*, 57, 175-179. See also Guerra, *Hospital en Hispanoamerica*, 247.

[13] Muriel, "Los hospitales," 230-231.

some cases the *cofradía* effectively sponsored a few beds within a hospital, as was the case of the *cofradía* de San Homobono de los Sastres who had two beds in the Hospital de San Juan de Dios. In the case of smaller and poorer hospitals, who were often overlooked for the generous stipends, grants and donations bestowed on the more celebrated institutions, however, the assistance provided by the *cofradías* was invaluable, not simply by way of donations gathered but through a system of voluntary help, which saw *cofrades* (brothers/members) rotate care of the sick on a weekly basis (for this reason they came to be known as *semaneros*[14]). Without such help it would have been very difficult for most of the Indian hospitals to survive, despite Motolinía's assertion that that even the poorest Indian hospitals were able to garner enough funds by collecting lots of small amounts from so many poor Indians.[15]

Such reliance on *cofradías* was certainly the norm for the majority of Indian hospitals outside the capital where, furthermore, the *cofradías* were often entirely subordinate to the local religious authorities. Once again this augmented the power wielded by the clergy over local communities not least since the *cofradías* provided strict instructions for Christian living within and beyond the hospital. Thus these confraternities were one of the religious orders' most effective tools both for consolidating communities and imparting and reinforcing Catholic values amongst the Indians.[16]

[14] From the Spanish word *semana* meaning week.
[15] The original reads, "Han hechos los Indios muchos hospitales adonde curan los enfermos y pobres, y de su pobreza los proveen abundantemente, porque como los Indios son muchos, aunque dan poco, de muchos pocos se hace un mucho," Motolinía, *Historia de los Indios,* 131. For a history of *cofradias* see Alícia Bazarte Martínez, *Las Cofradías de Españoles en la Ciudad de México (1526-1860)* (Mexico: Universidad Autónoma Metropolitana, Unidad Azcapotzalco, División de Ciencias Sociales y Humanidades, 1989).
[16] See Bazarte Martinez, *Cofradías,* 29-33.

It is briefly worth noting that access to money did not always improve the lot of a hospital. For example, while those in receipt of adequate funding often chose to employ a *mayordomo* (supervisor) to oversee the running of the hospital, the success of such postings depended entirely on the character and skills of those employed. Indeed, lots of hospitals were brought to ruin by bad administration and mismanagement.[17] A mandate from 1648 saw the Obispo of Puebla threaten to strip the *mayordomo* of the Hospital of Loreto of his office if, as had come to his attention, he continued to ignore the hospital remit and neglect his duty to care for all the poor who approached the hospital.[18] Neither could money always overcome the general shortage of medical personnel suffered across the colony. Even wealthy urban hospitals like the Hospital del Amor de Dios in Mexico City were at the mercy of staff shortages, seen when their *mayordomo,* Jerónimo de Moron, is urged to write in 1600 asking to be sent replacement staff to cure the sick since Andrés Manzano, their surgeon, has left the country.[19]

Generally, however, access to better funding enabled hospitals to secure, alongside better provision of food and medicines, the services of more licensed medical professionals. Such grand institutions in receipt of high levels of funding tended to be the numerical exception, however, and were almost exclusively found in the urban context; a situation that exacerbated problems encountered by

[17] An extreme example of this is the case of the Hospital de San Lázaro, founded in 1523, and knocked down by the *mayordomo* Nuño Beltrán de Guzman in 1529 to build a residence while Cortés was out of the country. Although he was put into jail for his actions in 1538 and there were instructions issued to rebuild the hospital, it never was; see Guerra, *Hospital Hispanoamerica*, 216.

[18] AGN Hospitales vol.3 exp 16 foj.255-258 'Testimonio del despacho del obispo de puebla para que el hermano mayor del hospital de loreto reciba y cure en el a todo los pobres sin excepción,' Veracruz, 1648.

[19] AGN Bienes Nacionales vol 78 exp 82' Jerónimo de Moron mayordomo del Hospital del Amor de Dios pide que se provea persona que convenga para la cura de enfermos porque Andrés Manzano, que habia estado sirviendo de cirujano se he despedido de Mexico,' México, 1600.

more remote communities who already bore the brunt of the general shortage of medical professionals to be found in the new colony.

Hospital provision in Mexico City

In 1624, almost exactly one hundred years after the fall of Tenochtitlan, Antonio Vázquez de Espinosa stated that "in this great city there are nine famous hospitals in which they care for the indigent sick of various nationalities, and with different diseases."[20] However, having cross-referenced several primary and secondary sources, and consulted many others, the conclusion of the current study is that in the hundred years following the fall of Tenochtitlan seven hospitals that can be considered principal hospitals in the capital city were founded: the Hospital de Nuestra Señora de la Concepción; Hospital del Amor de Dios; Hospital Real de San José de Los Naturales; Hospital de San Hipólito; Hospital de San Lázaro; Hospital de la Epifanía; and the Hospital del Espíritu Santo.[21]

[20] Antonio Vázquez de Espinosa, *Compendium and Description of the West Indies, In Smithsonian Miscellaneous Collection Vol 102,* trans. Charles Upson Clark (Washington: Smithsonian Institution, 1942), 161 (section 453), http://www.archive.org/stream/smithsonianmisce1021942smit/, (12 November, 2011).

[21] To reach this conclusion several sources, primary and secondary, containing the names of hospitals in sixteenth century Mexico have been consulted. Only those hospitals named by the majority are listed amongst the seven. Some of the lists, such as Guerra's, include hospitals that did not survive or were replaced. Other minor hospitals are mentioned, for example by Vázquez de Espinosa as "others of lesser reputation." While over half of the sources also mention the Santa Fe hospital during this time frame, since it sat outside of the city limits it will be considered in a different section. The current research was unable to trace alternative names for the Hospital de Jesus María de los Indios or the Hospital de la Misericordia, mentioned among the nine hospitals listed by Vázquez de Espinosa and it was therefore deemed impossible to include them on the list of principal hospitals; this decision to exclude these two hospitals from list of the principal seven is vindicated by the fact that Alonso Ponce states that, "there are six principal hospitals in this city, four of which cure Spaniards, one Indians and the other Blacks and Mulattoes," writing prior to the foundation of the Hospital del Espíritu Santo which was the last of the principal seven. See Ciudad Real, *Tratado curioso,* 176; Guerra, *Hospital en Hispanoamerica;* Juan López de Velasco, *Geografía y descripción Universal de las Indias, recopilada por el cosmógrafo-cronista, Juan López de Velasco, desde el año 1571-1617, publicada por D. Justo Zaragoza* (Madrid, 1894); Muriel, *Hospitales de la Nueva España;* Rodríguez-Sala, *Hospital Real de los Naturales*; Vázquez de Espinosa, *Compendium; and* AGI Patronato 183, N1, R8 'Relación de los hospitales que hay en la ciudad y arzobispado de Mexico,' Mexico, 1583.

As already mentioned, the first hospital in Mexico City, indeed, in Mexico was built by Hernán Cortés in 1522 near the *zócalo* (main plaza) on the site where he and Moctezuma first met, both to celebrate his victory and, perhaps, to alleviate his conscience regarding conquest horrors, through charitable works. [22] The Hospital de La Inmaculada Concepción de Nuestra Señora,[23] housed in a building described in 1583 as "very sumptious"[24] was exceptionally well provisioned; Cervantes de Salazar famously said of the hospital that "the rich are no better looked after in their houses than the poor in this hospital."[25] Medical staff on the payroll included a doctor, surgeon, bleeder, male and female nurses and eleven slaves (three Indian and eight Black). Indeed, most of the famous early colonial doctors would have passed through the doors of this hospital at some point, including Pedro López and the surgeon Diego de Pedraza.[26] Initially the hospital had eighty beds for men and eighty beds for women and was said to be treating four hundred patients a year in the first decade. Although designed for Spanish patients it appears that Indians were also accepted here before they had their own hospital, although there is disagreement over this point.[27] Indeed, there is even a

[22] It is generally agreed that this was the first hospital, although Guerra mentions that the Hospicio de la Caridad, a fortress treating Cortés and his soldiers was built in Tepeaca in 1520 and Muriel takes evidence from Bernal Díaz to suggest the likelihood that smaller hospitals may have been built prior to the founding of the Hospital de Nuestra Señora de la Concepción. See Guerra, *Hospital Hispanoamerica,* 212; and Muriel, *Hospitales de la Nueva España,* 38.

[23] Alternatively known as the Hospital de Nuestra Señora in historical documents, it went on to be known as the Hospital de la Marques and then the Hospital de Jesus.

[24] AGI Patronato 183, N1, R8 'Relación de los hospitales que hay en la ciudad y arzobispado de Mexico,' Mexico, 1583.

[25] Guerra, *Hospital en Hispanoamerica,* 216. Cervantes de Salazar (c.1514-1575) was a 'man of letters' who was born in Spain and went to live in Mexico City during the mid-sixteenth century where he was twice appointed rector of the University there.

[26] Muriel, "Los hospitales," 232, who also says that in the earliest days even Bartolomé de Olmedo, chaplain of the conquest army served the sick there in 1523

[27] Guillermo Fajardo Ortiz says that it only admitted Spanish patients except those with chronic illnesses, while Guerra says that it admitted Spanish and Indians not suffering from *bubas.* See Guillermo Fajardo Ortiz, *Breve historia de los hospitales de la ciudad de México* (Mexico City: Asociación Mexicana de Hospitales; Sociedad Mexicana de Historia y Filosofía de la Medicina, 1980), 18; and Guerra, *Hospital Hispanoamerica, 213*. AGI Patronato 183, N1, R8 'Relación de

suggestion from Josefina Muriel that the hospital admitted native *curanderos* on the proviso that they were Christians and that they conducted no witchcraft.[28]

The Hospital del Amor de Dios, founded by Fray Juan de Zumárraga in 1539, was commonly known as the hospital de las *bubas* (buboes) as it was here that "with much care they cure and sustain the poor sufferers of the French disease [syphilis] and nobody else because it is the most noxious and contagious disease that there is in these parts."[29] Generously maintained with royal patronage according to a royal *cédula* issued by Charles V in 1541 in which *novenos* and *diezmos* (both types of tythe) were set aside for its upkeep, it is clear from sources at the time of the esteem in which this "splendid and wealthy"[30] hospital was held as "the best served hospital that there is in the Indies, providing doctors, medicines, surgeons, food, bed and punctual and clean service."[31] Medical staff on the books included a salaried doctor, surgeon, apothecary and barber, and according to some reports two mercury anointers and a *jarabero* to prepare sarsaparilla syrups normal in the treatment of syphilis.[32]

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los hospitales que hay en la ciudad y arzobispado de Mexico,' Mexico, 1583, states that "all sick poor suffering from all diseases except *bubas* and leprosy were cured here" ("donde de ordinario sean curado y curan todos los pobres enfermos que a el ocurren de todas enfermedades ecepto de bubas y mal de San Lazaro").

[28] Muriel, "Los hospitales," 233.

[29] The original reads; "con mucho cuidado se curan y sustentan los enfermos pobres de Morbo Galico y no otra alguna por ser la mas nocíba y contagiosa de las que ay en estas partes," in AGI Patronato 183, N1, R8 'Relación de los hospitales que hay en la ciudad y arzobispado de Mexico,' Mexico, 1583.

[30] Vázquez de Espinosa, *Compendium,* 163.

[31] The original reads, "el ospital mas bien servido que ay en las indias, daselo a los enfermos medico, medicinas, cirujano, comida, cama y servicio con mucha limpieza y punctualidad," in AGI Patronato 183, N1, R8 'Relación de los hospitales que hay en la ciudad y arzobispado de Mexico,' Mexico, 1583.

[32] AGI Patronato 183, N1, R8 'Relación de los hospitales que hay en la ciudad y arzobispado de Mexico,' Mexico, 1583; Guerra mentions the anointers and syrup preparers although he gives no reference, see Guerra, *Hospital en Hispanoamerica,* 229.

The Hospital Real de San José de los Naturales, "in which are cured all sick Indians who arrive from whatever part of New Spain," was founded in 1553, although most of the information known about the hospital comes from the eighteenth century.[33] Well endowed with "large revenues and charitable contributions," this was the first hospital to be actually established by the Crown, and, indeed, was one of the first royal projects in the national interest. [34] Again famous early colonial doctors were in attendance at this hospital, including Agustín Farfán, and the first autopsy was conducted here by Juan de la Fuente in 1576.[35] Although located in the capital the idea of the hospital was that it would attend to Indians from all over the colony in their own language.' Indeed, in the statutes written in the eighteenth century it is specified that the doctors who work there "should be selected as those who best know the nature of the Indians who they will be attending to," which Carlos Viesca Treviño speculates could be evidence of a remnant of older statutes in which the necessity of indigenous doctors is more openly considered.[36]

The Hospital de San Hipólito, known commonly as the Hospital de los Convalecientes, founded by Bernardino Alvarez in 1566 was, according to Vázquez de Espinosa "one of the finest and wealthiest in the Indies."[37] Although

[33] AGI Patronato 183, N1, R8 'Relación de los hospitales que hay en la ciudad y arzobispado de Mexico,' Mexico, 1583. Most of what is known about this hospital comes from the the constitution and mandates published in 1778. See Hospital Real de Indios, *Constituciones y ordenanzas para el régimen y govierno del hospital real y general de los Yndios de esta Nueva España, 1778,* Facsimile reprint (Mexico : Rolston-Bain, 1983).
[34] Vázquez de Espinosa, *Compendium,* 161.
[35] Muriel, *Hospitales de la Nueva España,* 127-142.
[36] Viesca Treviño, "Los médicos indígenas frente a la medicina europea," in *Medicina novohispana siglo XVI: historia genera de la medicina en México: Tomo II*, coords. Gonzalo Aguirre Beltrán and Roberto Moreno de los Arcos (México: UNAM, 1990) 140.
[37] Vázquez de Espinosa, *Compendium,* 162. Alvarez was a natural of Mexico City, see José Guijarro Oliveras, "Historia de los hospitales coloniales españoles en América durante los siglos XVI, XVII y XVIII," in *Archivos Iberoamericanos de historia,* Vol II (Mexico: Archivos Iberoamericanos de Historia de la Medicina, 1950), 532.

after 1777 it functioned only as an insane asylum in its earlier incarnation it served as a hospice for recovery after the founder saw that the ill were normally discharged from hospitals when they were healthy but not fully convalesced; he wanted to found a hospital where the sick poor discharged from other hospitals could go to regain strength.[38] Again it accepted all races and genders.

In 1571 Dr Pedro López founded the Hospital de San Lázaro at his own cost, finally replacing the one destroyed in 1523. The hospital statutes specify that he was finally granted a license because it was felt that "all over the land there are those sick from San Lázaro (leprosy) who, for want for a house or hospital which can take them in and cure them suffer greatly, and die without being cured of their illness."[39] Although in reality it seems unlikely that there was much leprosy in the colony and it was instead Indians suffering from yaws.[40] The hospital statutes further specify that everybody, rich, poor, men, women, Spanish, *mestizo, negro* or *mulato* were welcome in any condition. They were first examined by two doctors to establish that they were, indeed, suffering from leprosy, at which point those who were unwilling to enter would be forcibly detained. The San Lázaro Hospital was noticeably poorer than others in the capital as attested to references in its statutes that the *mayordomo* (steward) had no salary and undertook the work

[38] AGI Patronato 183, N1, R8 'Relación de los hospitales que hay en la ciudad y arzobispado de Mexico,' Mexico, 1583.
[39] The original reads, "en ella y en otras partes de esa tierra hay de ordinario muchos enfermos del mal de San Lázaro, y que por no haber casa y hospital particular donde se puedan recoger y curar, padecen mucha necesidad y trabajo y se mueren sin poder ser curados de sus enfermedades," from AGI Audiencia de Mexico, legajo 1090 libro c6 in Hospital de San Lázaro, *Ordenanzas del Hospital de San Lázaro de Mexico, año de 1582* (Mexico: J, Porruá, 1956), 8.
[40] For the debate over the presence of leprosy, see Guerra, *Hospital en Hispanoamerica*, 216. Even a document from 1583 agrees that there were not many leprosy sufferers "curanse en el [Hospital de San Lazaro] solamente los enfermos del mal de San Lazaro que por la misericordia de dios son pocos en esa tierra," ("only those suffering from leprosy are cured at the Hospital de San Lázaro, of which, thanks to God's mercy, there are few in this land," in AGI Patronato 183, N1, R8 'Relación de los hospitales que hay en la ciudad y arzobispado de Mexico,' Mexico, 1583.

"purely for God." Sufferers themselves were expected to collect alms in the city to avoid having to pay fees to healthy collectors.[41]

Ten years later, in 1582, the Hospital de la Epifanía was founded, again by Doctor Pedro López, this time to cure poor, free Blacks, Mulattoes and *mestizos* with nowhere else to turn "of which there are many in this land, who fall ill and die for lack of those to cure them."[42] This hospital came to be known as the Hospital de Los Desamparados after the *cofradía* by this name also established in conjunction with the hospital by the founder. This was the first hospital in Mexico to be taken over by the order of Juan de Dios. While Vázquez de Espinosa describes it as "rich and sumptuous" this is no doubt in its later incarnation after the Juan de Dios brethren were running it as before that it was struggling to manage on rents and Philip III therefore accepted patronage of it in 1599.[43] There were 150-200 beds in this hospital.[44] The last of Mexico City's seven principal hospitals was the Hospital del Espíritu Santo which Vázquez de Espinosa simply states is "likewise excellent" and we know from Francisco Guerra was established in 1602 to receive poor Spaniards of both sexes. Again this was given over the brethren, this time Hipólitos who, numbering only eight, attended an average of 150 sick a day along with the help of a doctor, surgeon and barber.[45]

[41] Hospital de San Lázaro, *Ordenanzas, 18*-21.
[42] AGI Patronato 183, N1, R8 'Relación de los hospitales que hay en la ciudad y arzobispado de Mexico,' Mexico, 1583. Although it is not clear from the sources whether *negros* and *mulatos* could be treated in other hospitals prior to the foundation of the Desamparados, Fajardo Ortiz, *Breve historia,* 32, suggests that no treatment space was available to Blacks and Mulattoes prior to its opening and that this was one of the main reasons for its inauguration.
[43] Vázquez de Espinosa, *Compendium,* 162.
[44] Alberro, *Orden hospitalaria de San Juan de Dios,* 101.
[45] See Guerra, *Hospital en Hispanoamerica,* 276; and Vázquez de Espinosa, *Compendium,* 163.

Hospital provision outside Mexico City

With a few exceptions, hospitals outside Mexico City were smaller, humbler and poorer establishments founded by the religious orders to cater, almost exclusively, to the indigenous communities. Often consisting of little more than an annexe to the church, where Indians were treated to stop them dying of cold and hunger, these hospitals struggled to provide access to adequate professional medical care. Even by 1610, nearly one hundred years after the conquest, for example the Hospital de San Cosme y San Damián in Durango had no medic or pharmacist listed. Indeed, while most hospitals outside the capital could not count on having a graduated doctor or surgeon on their books they did, without exception, have a *capellán* (chaplain). While such hospitals were certainly well-placed to fulfil their duty to evangelise it seems that the dual goal of providing adequate medical care by 'qualified' professionals would have eluded most.[46]

Possible exceptions were the *pueblo-hospitales* (hospital-towns) founded by Don Vasco de Quiroga, whose statutes specified that there be a doctor, surgeon and pharmacist on hand; the services of whom are attested by archival evidence recording payments made to them, for example at Patzcuaro. Here the hospital was at the centre of a community of indigenous members who were rotated to carry out inspections of cleanliness, food and pharmacy supply and to accompany doctors and surgeons on their rounds. Rectors and priests were expected to speak indigenous languages according to the hospital statutes. Such was the model for the Hospital de la Purísima Concepción in Uruapán, founded in 1540, in which the local indigenous community took weekly turns to look after the sick. A big

[46] See Guerra, *Hospital en Hispanoamerica,* 281; Venegas Ramírez, *Régimen hospitalario,* 35.

incentive for Indians to participate in these communities was that those who did were exempt from paying tribute to the Crown. [47] Religion unquestionably remained at the core of Don Vasco de Quiroga's projects.[48]

While Vasco de Quiroga's hospitals were more successful than most in ensuring access to trained professional medics it seems clear that indigenous healers were also 'working' in the Michoacán hospitals, although their absence from the statutes makes it unclear whether this was with or without Don Vasco's approval. An anonymous Franciscan friar wrote to the visitador Juan de Ovando applauding the "satisfactory conduct of duties by the Indian medics" in the Michoacán Hospitals, and in 1580 the Bishop of Michoacán remarked both that it was rare for a town in Michoacán not to have a hospital and that native doctors "participated" in them.[49] Indeed, evidence, for example from the Hospital de Nuestra Señora de la Concepción established in Patzcauro in 1537, suggests that Indians at these hospitals employed their own doctors versed in herbs. Furthermore, statutes for the Hospital de la Purísima Concepción in Acámbaro, established in 1532, clearly

[47] See Guerra, *Hospital en Hispanoamerica,* 221. Muriel, *Hospitales de la Nueva España,* 69-74; and Venegas Ramírez, *Régimen hospitalario,* 71. It was in the Hospital de la Purísima Concepción in Uruapan that 'Tata Vasco' died in 1565.

[48] Vasco de Quiroga drew his inspiration from observing the misery of the Indian condition and what he saw as the futility of a system in which Indians were repeatedly treated or cathecised and then returned to their prior miserable conditions. His utopian vision saw the hospital at the centre of a self-sufficient indigenous community all of whom worked towards its sustenance and survival – both through donations and by volunteering to undertake day to day tasks. In his first project, the *Republica Hospitalaria* established at Santa Fe in 1532 which was said to house 30,000 Indians alongside working for the hospital Indians were taught by priests and rectors whom Vasco de Quiroga insisted speak indigenous languages, the basics of agriculture, industry, reading, writing and, of course, religion. For more information on Vasco de Quiroga and his hospital projects see, among others, Guerra, *Hospital en Hispanoamerica, passim;* José J. Moreno, *Fragmentos de la Vida y Virtudes del Illmo y Rmo Sr D. Vasco de Quiroga Primer Obispo de la Santa Iglesia Cathedral de Michoacan, y Fundador del Real y Primitivo Colegio de S. Nicolás Obispo de Valladolid* (Mexico: la Imprenta del Real y mas antiguo Colegio de San Ildefonso, 1766), *passim.*; Muriel, *Hospitales de la Nueva España,* 57-115*;* and Venegas Ramírez, *Régimen hospitalario,* 66-83.

[49] Viesca Treviño, "Médicos indígenas," 141-142, posits that the date of the *ordenanzas* in 1565, in a moment when the Counter-Reformation Reformation and Council of Trent were at the fore might have meant that Vasco de Quiroga considered it dangerous to express positive opinions about native healers. There were also suggestions that the good disposition of Michoacán Indians made them easier to govern.

state that alongside the religious life of the hospital, indigenous medicine be conducted in preference to Spanish medicine and that knowledgeable Indians be welcomed into the hospital to exercise and teach what they know using traditional medicinal herbs because "they have curative properties bestowed by God."[50] It is unclear, however, whether such indigenous practice was restricted to the field of herbalism as suggested by Fray Mathías de Escobar's comment that "in these hospitals...there were some intelligent herbalists who, with the mere application of herbal simples, conducted better cures than Asclepio."[51]

Nor was the practice of indigenous medicine restricted to the more permissive atmosphere of Don Vasco de Quiroga's Michoacán hospitals. In 1537 Fray Motolinía talks of the indigenous doctors in relation to the Hospital at Tlaxcala and, while it is not explicit, it is suggested that they are working there by the context, and furthermore that they also treat Spaniards.[52] More explicit are Fray Alonso de Molina's 1552 *Ordenanzas para el gobierno de hospitales* (statutes for the governance of hospitals) written for Franciscan hospitals (which were not limited to Michoacán but the central zone in general) written in Nahuatl in which he mentions "that indigenous doctors be accepted to work publicly," providing biblical bases for the acceptance of local herbal medicine and even instructions to the *cofrades* to select only "the truly knowledgeable, those experienced with

[50] Guerra, *Hospital en Hispanoamerica,* 219-227. This was a hospital organised by a cofradía where some gave alms and some worked as enfermeros on a weekly basis.
[51] In Viesca Treviño, "Médicos indígenas," 141.
[52] He says, "they have their doctors, experienced locals who know how to apply herbs and medicines, which suffice for them; and amongst them are some with such great experience that long-sufferingSpaniards for whom no remedy could previously be found, have been cured by these Indians," ("tiene sus médicos, de los naturales experimentados, que saben aplicar muchas yerbas y medicinas, que para ellos basta; y hay algunos de ellos de tanta experiencia, que muchas enfermedades viejas y graves, que han padecidos los Españoles largos días sin hallar remedios, estos Indias las han sanado"), in Motolinía, *Historia de los indios,* book I, chap. VIII, 131.

herbs, not swindlers, those who look in water, servants of the devil"[53] and to avoid "cheats, devils, witches, false doctors."[54]

Hospital treatment and staff

Examination of hospital *reglamentos* (rules) paints a vivid picture of hospital life for the patients, Indian, Black and Spanish: once registered a patient was sent by the *enfermero de guardia* (watch nurse) to either a *sala de medicina*, *cirugía* or *contagiosos* (a room either for medicine, surgery or contagious diseases), according to the preliminary diagnosis. There they were visited by a priest for confession. If the patient was in a very serious condition a doctor or surgeon would be called but on the whole they would be seen for the first time during the general rounds the following morning. A surgeon did the rounds in the *salas de cirugía* with a nurse (male or female depending on chambers) from 6-7 a.m. In the *salas de medicina* the physician did visits with helpers from 7-9 a.m. during which time patient's diets were noted in a book and any prescriptions to be picked up later from the pharmacy.[55] Rules in hospitals were incredibly strict, not simply for Christian living but more generally such that the *III Concilio provincial mexicano* specifies in 1585 that there was to be no swearing or playing in hospital at risk of expulsion.[56]

From early on hospitals began to adapt to the indigenous diet, not least out of a necessity to use what was available, although some early evidence suggests that Indians were served Spanish foods, not least under instruction by Cortés in his

[53] *Viesca Treviño, "Médicos indígenas," 141.*
[54] Venegas Ramírez, *Régimen hospitalario,* 116.
[55] Guerra, *Hospital en Hispanoamerica,* 58.
[56] *Concilio III provincial mexicano*, 304.

hospital.[57] Sometimes hospitals went through lean times and sometimes plenty depending on cash flow. Indeed, the financial state of a hospital would have impacted directly on the patients seen, for example, if we compare the dietary regime at the Hospital Real de los Naturales, which was wealthy from its royal patronage, and the Hospital de San Lázaro, which was poor. The Hospital de los Naturales offered a steady diet of three meals a day: breakfast at 8 a.m. consisting of *champurrado* (chocolate and maize drink) or *atole* (drink made from maize flour); lunch at 11.30 a.m. of chicken or lamb soup (as beef was seen to be too strong for invalids) followed by a stew or casserole with rice and chicken, beans and maize tortillas or bread; supper was at 8 p.m. and was rice and stew or meat and *atole*. The meals here could also include wine or *bizcochos* (a type of hard biscuit) according to doctors' orders but never included lactose. In comparison the Hospital de San Lázaro provided breakfast at 10 a.m. or 11 a.m. (in summer or winter), supper at 5 p.m. and "lunch to those who requested it."[58]

As already discussed, native foods were complemented with native therapies and even native practitioners in many hospitals, particularly, although not exclusively, those outside the capital. Alongside the widespread use of herbal remedies is also reported that *temazcallis* (thereapeutic steam baths) employed by the Indians were included in many hospitals, [59] not least the Hospital de la Concepción established in Tirepetío in 1537 which had a *temazcal* and a well provisioned pharmacy stocked with medicinal herbs commonly used by Indians.[60] Indigenous therapies

[57] Guerra, *Hospital en Hispanoamerica,* 58.
[58] Guerra, Francisco. *Hospital en Hispanoamerica,* 58, for the Hospital de los Naturales (although worth remembering that these details are from the eighteenth century); and Hospital de San Lazaro, *Ordenanzas*, 24.
[59] Such as the Hospital de la Concepción built in 1530 at Zinapécuaro close to medicinal warm baths used in treatments of rheumatic diseases, see Guerra, *Hospital en Hispanoamerica,* 30.
[60] Guerra, *Hospital en Hispanoamerica,* 227.

were not solely restricted to smaller, provincial hospitals; *temazcallis* could be found at the Hospital de los Naturales in Mexico City.[61]

Indigenous nurses and *semaneros* were also an intrinsic part of the workforce in most hospitals, not least don Vasco de Quiroga's *República hospitalaria,* where their duties often extended beyond mere bathing, bed-making and cleaning to actually accompanying doctors on their rounds, to cure wounds and administer medicines. All female patients in colonial hospitals would have been seen by female nurses and midwives and, to this end, fray Juan Bautista wrote in his *confessario* (confessional) in 1599 strict orders that these honorable female practitioners would not carry out abortions.[62] Indeed, the professionalism and skills of certain nurses is further suggested in the *Consituciones y ordenanzas* (constitution and statutes) of the Royal Indian Hospital which states that various Indians from Michoacán came to found, or serve at the hospital, as nurses; chosen specifically from amongst those educated by Vasco de Quiroga.[63] Luz María Hernández-Sáenz and George Foster confirm the idea that nurses were trained and further suggest that indigenous and *mestizo* nurses were not solely restricted to indigenous hospitals because hospital nurses were not subject to uniform legislation such as *limpieza de sangre* rules, except in the Royal Indian Hospital.[64]

As has already been mentioned, all hospitals also counted on the presence of priests. In better resourced urban hospitals, for example in the Hospital de los

[61] Guerra, *Hospital en Hispanoamerica,* 250.
[62] Bautista, *Confessario,* 27-29. See also Muriel, "Los hospitales," 231.
[63] See Hospital Real de Indios, *Constituciones y Ordenanzas,* 8. While this fact is contested by Guijarro Oliveras and Venegas Ramírez based on date discrepancies between hospital foundations it nevertheless represents an interesting possibility for indigenous training of other indigenous nursing staff. See Guijarro Oliveras, *Hospitales coloniales,* 541; and Venegas Ramírez, *Régimen hospitalario,* 41.
[64] Hernández-Sáenz and Foster, "Curers and their cures," 39-40.

Naturales in Mexico City, there were four *capellanes* on 24-hour duty. Anybody admitted to hospital was expected, by laws made express during the *III Concilio provincial mexicano,* and under pain of punishment, to first meet with a priest, not a doctor, to confess.[65] The importance of confession is not surprising within a system in which curing the body was only as important as curing the soul. Such an approach would have resonated with indigenous patients for whom sickness was also closely linked with sin. In this way the Catholic Church maintained its importance in the evolution of medicine with "her influence deriving from her amalgamation within the dynamic psychology of pre-Columbian religions rather than from her charitable practices."[66] It seems more than likely that in hospitals without access to adequate medical professionals these priests would have stepped into the breach as healers. This has important ramifications for the types of medicine patients were exposed to, not least given the priests associations with humoral medicine.[67]

Staffing hospitals alongside the medical professionals, priests, nurses and unofficial indigenous practitioners would have been Black slaves. The hospital Real de San Miguel de Belém, established in Guadalajara in 1587, was administered by ecclesiastical *cabildo* and counted in its service a chaplain, doctor, barber, apothecary and servants plus five Black slaves.[68] Other archival examples make fleeting reference to hospital slaves such as the plea from the

[65] The original states that "all sick poor entering the hospital for cure must confess their sins before being given a bed, or no more than three days after. If this rule is disobeyed they will not be visited by a doctor, nor have any medicines applied" ("todos los pobres enfermos que se reciben en los hospitales para curarse de sus enfermedades, confiesen sus pecados antes de que se les dé cama, o trés dias despues de habérseles dado. En caso de contravención, no los visitará el médico, ni se les aplicará medicina alguna"), in *Concilio III provincial mexicano*, 304
[66] Guerra, "Role of religion," 179.
[67] See Guerra, "Role of religion," 180-181
[68] Guerra, *Hospital en Hispanoamerica,* 274.

Hospital de San Juan de Ulua de Montesclaros in Veracruz asking to be given slaves[69] or the slave mentioned on an inventory from the Hospital of San Hipólito and Oaxtepeque.[70] There are even suggestions that Black and Mulatto slaves were employed in the Hospital Natural de los Naturales by the beginning of the seventeenth century as by then it was difficult to get purely indigenous attendants, as was the expressed desire, because of the high mortality rate among Indians.[71]

It is not entirely clear in what capacity these slaves worked in hospitals and thus, to what degree they were exposed to and involved in the actual medicine. One can hazard a guess that often their duties revolved around more basic tasks such as cleaning and, perhaps, cooking. Furthermore, the herb gardens that were often attached to hospitals would also have required staff. Some examples from the archives do, however, hint at greater proximity to medical happenings. A *mandamiento* issued in 1584 mentions seven *negros* and *negras* to be given specifically to the *nurse* Juan Pérez de Cadiz, at the Hospital de San Juan de Ulua, for service in the hospital.[72] Perhaps more suggestive is a viceregal order regarding *negros* in service at the Hospital Real de San Juan de Ulua de Montesclaros in Veracruz. Issued on the 6 April 1593, Viceroy de Velasco asked that "those *negros* earmarked from the King for service in the Royal Hospital of San Juan de Ulua in the port of Veracruz are not exchanged because they are *industriados* [instructed] and there will be other work for the others."[73] Thus there

[69] AGN Hospitales vol 18 exp 8 foj 65-66 'Mandamiento del Virrey Don Luis de Velasco para que se den esclavos para el servicio del hospital de Montesclaros,' Veracruz, 1596.
[70] AGN Hospitales vol 45 exp 3 foj 26-29 'Traslado de la Real Ejecutoria para no pagar alcabala los hospitales,' Mexico, 1600.
[71] Leiby, "Royal Indian Hospital," 577.
[72] AGN Hospitales vol. 18 exp 2 foj. 9-12 'Mandamiento de la audiencia Gobernadora para que el receptor de la averia acuda al hospital de San Juan de Ulua, Veracruz, 1584.
[73] AGN Hospitales vol 18 exp 5 foj 51-57 'Dos mandamientos del Virrey sobre negros al servicio del hospital de Montesclaros,' Veracruz, 1603 (appears to refer back to 1593).

is a possibility that Blacks working in hospitals were exposed to the types of medicine and therapy being conducted there, either directly or even by simply working as cleaners.[74]

Hospital patients

Gender allocation in Mexican hospitals was fairly straightforward: with the exception of smaller *enfermerías* that came later in the period to cater, for example, to *niñas mestizas* (mixed race girls), all of the early colonial hospitals accepted male and female patients, in separate dormitories.[75] A document from 1570 demonstrates how seriously this division was taken when a case was launched against the priest Bernardo de Celiz for trying to enter the female quarters of the Hospital de Nuestra Señora de la Concepción against the porter's wishes.[76]

Racial separation of patients in hospitals was not so straightforward. The earliest hospitals in New Spain were designed for Spaniards both because they were needed to maintain the empire and their health was therefore of paramount importance, and because initially it was precisely this group who found

[74] This is supported by evidence from other parts of Spanish America: Linda Newson reports examples of Blacks and Indians working in hospitals from Colombia and Peru; for example of a *mulato* surgeon, Diego López, working in Cartagena and that indications are that in Lima hospitals African slaves were assisting in surgery and acting as nurses and giving medicines. At the Hospital de Santa Ana, for example, slaves were applying unctions of mercury and one, Francisca Bran, was treating buboes using sarsaparilla in 1588. She further reports that this same hospital trained an Indian, Pedro Capicha, to be a barber-surgeon on its sheep estancia near Jauja in 1617; see Linda Newson and Susie Minchin, *From capture to sale: the Portuguese slave trade to Spanish South America in the early seventeenth century* (Leiden and Boston: Brill, 2007), 235-266.
[75] For example the Hospital Real de San José de Gracia in Querétaro established in 1586 to treat male and female indigenous patients in separate rooms, see Guerra, *Hospital en Hispanoamerica,* 270. See also *Concilio III provincial mexicano,* 305.
[76] AGN Bienes Nacionales vol 497 exp3 'Contra Bernardo de Celiz, presbítero, sobre haber querido entrar en el hospital de la concepción a ver a una mujer enferma,' Mexico, 1570.

themselves a long way from home or family to look after them.[77] Over the course of the next century hospitals for Indians and even Blacks and Mulattoes were built. Josefina Muriel says that ideas about social justice which were circulating at the time and were shared by the Church and the wider population gave hospitals a "popular character" in which, she claims, differences of race and status, which could have impeded the efficiency of medical service for different sectors of society were instead overridden by the provision of different rooms or hospitals for each group.[78]

There does appear to have been a large degree of racial mixture in colonial hospitals, particularly during the earliest period when, for example, hospitals designed for Spaniards were willing to accept indigenous patients, and many of the Indian hospitals outside the city were willing to accept travellers of any description. In fact, it seems that only the Hospital Real de los Naturales was adamantly opposed to patient race mixture.[79] Whether this initial racial harmony became strained with time or if, in fact, it had been strained from the start, a royal *cédula* from 1701, while clearly demonstrating that the Hospital del Espíritu Santo continued to receive Indian and Spanish patients attests a large degree of dissatisfaction with this situation:

> The Spaniards beg that a Viceregal order be issued that the Hospital of The Holy Spirit in this city not admit Indians, male or female, but that they collect and deposit all of the sick and suffering into their designated hospital...these type of people, with their particular types of complaints and bad odours need to be separated from the Spanish and other mixes as they do not get along.[80]

[77] Muriel, "Los Hospitales," 229.
[78] Muriel, "Los Hospitales," 231
[79] Campos-Navarro and Ruiz-Llanos "Adecuaciones interculturales," 601.
[80] The original reads, "los españoles suplicándome fuese servido de mandar que el referido Hospital de la Caridad del Espíritu Santo de esa ciudad no admita en sus enfermerías indios ni indias ordenado a Vos mi Virrey que precisamente vayas y se recojan todos los enfermos y dolientes en el Hospital Real diputado para ellos" explaining that "este género de gentes por su

Whether race mixture in early colonial hospitals was harmonious or not, it seems that, certainly in the larger city hospitals, the Indians received equal treatment to the Spanish. Indeed, archival evidence from the Hospital de Espíritu Santo in Mexico from 1640 shows clearly that while there was a mixed profile of patients from a range of social and ethnic backgrounds, the types of medicines and products administered were the same. This important document provides an extensive inventory made by Miguel Gerónimo de Cabrera, who was the pharmacist for the hospital, of all of the medicines given to all of the patients during the course of a year. Whilst many of the patients are referred to simply by numbers some are referred to more fully, thus it is evident that amongst those being treated in 1640 were men and women, *negros*, *morenos*, *mulatas* and several priests. This evidence suggests that the same types of products were given to all patients according to need, irrespective of ethnic or social background. The types of products used clearly show that patients were being treated with products known from the Old World such as almond oil, rose honey, dried broad bean flour and wine. [81]

It is difficult to know exactly what ailments were most commonly suffered by patients in early colonial hospitals, both because the records are often silent on this or at best provide vague descriptions that are difficult to interpret from a modern perspective. As has already been mentioned, there is doubt surrounding

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especial naturaleza de achaques y mal olor necesitan de estar separados de los Españoles y demas mistos no hallándose bien los unos con los otros," from Antonio Zedillo, *Historia de un hospital: el Hospital Real de los Naturales* (Mexico: Instituto Mexicano de Seguro Social, 1984), 200, quoted in Campos-Navarro and Ruiz-Llanos "Adecuaciones interculturales," 601.

[81] AGN Archivo Historico de Hacienda leg. 1943 exp. 18 'Inventario hecho por Miguel Geronimo de Cabrera, *boticario*, de todos las medicinas administradas a los pacientes des hospital en un año,' Mexico, 1640. People specified include a negra (page 2) Padre Fray Gaspar (page 13), Padre Fray Antonio (page 48), a *negro* (page 52), a *moreno* (page 54) Melchora (page 54) and a *mulata* (page 60).

the treatment of lepers at the Hospital de San Lázaro, with evidence suggesting instead the majority of inmates suffered from yaws. The Hospital del Amor de Dios was predominantly dealing with those suffering from syphilis, attested by the presence of anointers in the hospital. John Leiby suggests that at Royal Indian Hospital smallpox and venereal disease were most common.[82] Other complaints suggested to have been suffered during the early colonial period include heart afflictions, hot flushes, dropsy, measles, smallpox, tuberculosis, yellow fever, respiratory problems and gastro-intestinal problems.[83]

Hospitals as healthcare providers

New World hospitals were responsible for the well-being of the bodies and souls of their patients, and it is widely acknowledged that they successfully fulfilled their duties to the souls by facilitating the congregation and conversion of patients in communities where strict Christian rules permeated all aspects of life, from how to dress and eat, down to what medicine was to be applied and how.[84] While the fulfilment of their religious role is clear, it is more difficult to evaluate the efficacy or success of colonial hospitals as healthcare providers, not least because it is difficult to know by what criteria such a judgment should be made. Clearly treatments and outcomes cannot be judged according to modern standards, and attempts to assess efficacy according to the standards of the time are foiled by a lack of information on treatments and outcomes. Analysis must, therefore, be undertaken tentatively through examination of a more nuanced set of questions:

[82] Leiby, "Royal Indian Hospital," 576.
[83] Alberro, *Orden hospitalaria de San Juan de Dios*, 121. Throughout the *Relaciones Geográficas* there are references to ailments suffered by the Indians before and after the arrival of the Spanish, particularly in response to question number seventeen; see Francisco del Paso y Troncoso, ed., *Papeles de Nueva España*. 2a serie. Geográfica y estadística. 7 vols. Madrid: Establecimiento tip. "sucesores de Rivadeneya," 1905, *passim.*
[84] See, for example, Aquado Vázquez and Martínez Barbosa, "Concepto de Caridad," 276-277.

Were hospitals able to reach adequate numbers of their intended patients? Were patients treated by suitable medical staff? Did patients value hospitals? And did they willingly submit to hospital treatment? While evidence is inevitably limited, combining such strands of information can help build a clearer picture of the position of hospitals as healthcare providers.

While some figures do exist regarding the numbers of patients treated at various hospitals their applicability is somewhat limited. Figures veer from 400 patients treated a year in the Hospital de la Concepción during the first decade[85] to 75 a day at the Hospital de Santa Cruz in Oaxtepec, Cuernavaca Valley, established in 1569,[86] and 150 a day at the Hospital del Espíritu Santo.[87] Any such numbers given for patients housed and treated in hospital beds would have been augmented by the fact that the gates of hospitals were also used for giving out food and treating the walking wounded, particularly those suffering ulcers and flesh wounds. [88] While such figures certainly show that hospitals were treating a considerable number of people, it is impossible to assess how meaningful these figures are, without knowing the outcomes of such treatments, for example, or the numbers of patients who *required* treatment.

In terms of the number of hospitals built across Mexico, it is clear that the Spanish authorities went some way towards their stated aim of providing a hospital for every Spanish and Indian pueblo. Whether this meant that enough beds were provided to cater for the needs of the people is again less clear, particularly in the

[85] Guerra, *Hospital en Hispanoamerica,* 213.
[86] Guerra, *Hospital en Hispanoamerica,* 262. This hospital gained fame for its use of curative medicinal plants not least since Hernández practised there as did Gregorio López (celebrated hermit 1542-2598). Alongisde treating the sick they also distributed medicinal herbs that they cultivated in their botanical garden.
[87] Alberro, *Orden hospitalaria de San Juan de Dios,* 9.
[88] Guerra, *Hospital en Hispanoamerica,* 58.

absence of population figures. In the case of the capital city, however, for where better population estimates exist, a preliminary attempt to evaluate hospital provision, even according to modern measure, reveals that it was remarkably good. Based on an initial assumption that each of the seven principal hospitals already named in the city had (at least) 150 beds,[89] it is possible to estimate that there would have been 1050 beds for a population of around 150,000.[90] This would mean that there were seven beds per 1,000 head of population; a situation that would have made the provision in sixteenth century Mexico City comparable to that of modern day Finland or Belgium.[91]

While this figure provides a useful indication of the significant role that hospitals *could* have played in the provision of healthcare in the capital, it should, nevertheless, still be approached with great caution. Firstly, as already discussed, it reveals nothing about the quality of provision. Furthermore, information on the numbers of beds available is again of limited use without a greater understanding of the number of beds actually needed, based not purely on a headcount (which in reality would probably have been higher than suggested by Vázquez de Espinosa's census), but on the conditions in the new colony. Here it is possible to suggest that, while the figures from Mexico City hold up well according to modern standards, it is questionable how adequate such provision would have been within a society regularly subject to epidemics and health scourges. Finally it

[89] This figure is a deliberately underestimated average from information provided regarding the number of beds, for example 150-200 quoted by Alberro for the Hospital de la Epifanía, see Alberro, *Orden hospitalaria de San Juan de Dios*, 9.

[90] Accepting as a guideline Vázquez de Espinosa's figures for the city in 1624 of 15,000 spanish vecinos, 80,000 indios and 50,000 *mulatos* and *negros*, see Vázquez de Espinosa, *Compendium*, 156 (Guerra agrees with these figures).

[91] http://www.nationmaster.com/graph/hea_hos_bed-health-hospital-beds (12 November, 2011) gives modern health statistics, including the number of hospital beds per 1,000 head of population as a measure of modern healthcare provision. Top of the list with 19.6 per 1,000 is Monaco and bottom with 0.12 is Niger. Modern day Mexico has 1 per 1,000 and the UK 4.2, with Finland quoted as having 7.2 and Belgium 6.9.

should be clarified that the provision in the major cities would not have been indicative of the provision across the colony. Thus any figures suggested for the capital would have been substantially reduced in the surrounding areas where hospitals were smaller and indigenous populations larger.

Irrespective of the number of beds provided in hospitals it is clear that there was a severe shortage of 'qualified' professional medical personnel in the new colony, both inside and particularly outside the capital city. It seems, from Vázquez de Espinosa, for example, that one hundred years after the conquest most Spanish *pueblos* (literally means town although it carries more the connotation of parish) with more than 300 *vecinos,* or heads of household, had a hospital and that almost all of these hospitals had a surgeon on their books.[92] Although this certainly means that access to some professional medical care was provided in the majority of Spanish hospitals at this time, which would not have been the case for Indian hospitals, it also reveals that even here there was a failure to provide access to doctors for all patients, as intended. In this respect hospitals categorically failed to provide adequate medical care, according to Spanish standards and the stated aim of the hospitals programme.

The shortfall in medical personnel was filled, as discussed, by a host of alternative carers including priests, indigenous herbalists, nurses and *semaneros* (carers on weekly rotation) who tended to the sick in various ways. Indeed, given the state of medicine at the time, it was almost certainly the supplementary services provided by these people such as food, shelter, comfort, care and attention, and even hope,

[92] Vázquez de Espinosa, *Compendium, passim.*

and not the services of professional healthcare workers, which would have been of most service to the patients.[93]

Upbeat descriptions from Motolinía of Indians happily participating in the running of their hospitals, regular requests from communities wishing to establish hospitals,[94] and archival documents peppered with heartfelt pleas for financial support for hospitals from witnesses extolling the virtues of such institutions initially combine with our understanding of the importance of the displays of human love mentioned above to suggest both the general success and the widespread acceptance of hospitals.[95] However, with the exception of Vasco de Quiroga's pueblo-hospitales – which are universally praised by modern scholars and sixteenth century *cronistas* alike, not least because Vasco de Quiroga had the political foresight to make them genuine community efforts in which the Indians were able to adopt the institution and make it their own[96] – closer examination reveals that the acceptance of hospitals into indigenous society was not, in the main, so straightforward.

Although confraternity statutes clearly specified that all members undertake the same jobs (suggesting that social class was irrelevant), in fact it appears that residues of former social stratification and differentiation would have impacted on acceptance or rejection of hospitals. Thus, while requests to build hospitals

[93] Alberro, *Orden hospitalaria de San Juan de Dios*, 121.
[94] In 1590 indios from Huichapa in the State of Mexico have their application for a license to set up a hospital accepted, see León Portilla, "Comunidades mesoamericanas," 224.
[95] See also AGN Hospitales 45 exp 2 foj 9-25 'Información que en virtud de una real cedula se hizo por la real audiencia sobre no tener los hospitales de san hipolito y oaxtepeque rentas para curar los enfermos,' Veracruz and Mexico, 1590, in which witnesses repeatedly extol the virtues of the Hospital de la Villa de San Hipolito y Huastepeque.
[96] Thus, for example, in the case of the Hospital de Santa Fe, while European friars directed the day to day life, the Indians chose the *prioste* (steward) and prelate from their own people, see Campos-Navarro and Ruiz-Llanos, "Adecuaciones interculturales," 600.

certainly did abound, there are suggestions that these came mainly from the chiefs of Indian communities and remnants of their noble classes who were happy with the hospitals programme as it allowed them to exercise control again and make money in ways similar to the old days. For many Indians, therefore, there may have been little perceived benefit to be had from building hospitals. In fact, doing so may have exposed them to exploitation from their nobles and an increased workload, as seen, for example, in the 1595 orders directed to the Acapixtla Indians demanding they send twenty of their number to work at the incurables hospital of Huaxtepec.[97]

Still more fundamental to any assessment of the success or failure of hospitals as healthcare providers for the Indians must be the consideration that reports suggest that Indians were generally wary of hospitals and reluctant to use them.[98] Fray Gerónimo de Mendieta notes early resistance to hospitals stating that (excluding Michoacan in which there appears to have been a willingness among the Indians to attend hospitals) everywhere else, "it is difficult to ensure Indians enter hospitals for cure, unless it is one so poor that they have nobody to look after them. The rest would rather die at home than recover in hospital."[99] Miguel León Portilla paints a vivid picture of how unappealing the prospect of being subjected

[97] León Portilla, "Comunidades mesoamericanas," 222-223. He furthermore provides evidence that by 1570 in the central region high status Indians were sidelining money from hospitals as were bishops and clerics.
[98] As mentioned in Chapter 2, there is a debate over whether the Aztec knew institutions like hospitals before the arrival of the Spanish.
[99] The original reads, "ni se pudo ni puede acabar con los indios que no entren en el hospital á curarse, si no es algun pobre que no tiene quien miré por él. Los demas, más quieren morir en sus casas que alcanzar salud en el hospital, lo cual no se puede remediar," in Gerónimo de Mendieta *Historia eclesiástica indiana*, prep. Joaquín Garcia Icazbalceta (Mexico: F.Díaz y Léon and Santiago White, 1870), book III, chap. 49, 307, http://books.google.co.uk/books?id=W5VBAAAAcAAJ&printsec=frontcover&dq=historia+eclesiastica+mendieta&hl=en&ei=XdLGTvmAHsSb8QOHg8CFAQ&sa=X&oi=book_result&ct=book-thumbnail&resnum=4&ved=0CEAQ6wEwAw#v=onepage&q=historia%20eclesiastica%20mendieta&f=false , (12 November, 2011). See also León Portilla, "Comunidades mesoamericanas," 219; and Campos-Navarro and Ruiz-Llanos, "Adecuaciones interculturales," 599.

to unknown treatments far away from family must have seemed to Indians who, traumatised and certain of their forthcoming death, refused to eat "even a mouthful."[100] If John Leiby's reference to a doctor in 1617 expressing concern that up to half of all pregnant Indian women admitted to the hospital experienced miscarriages, and his suggestion that the Hospital Real de Indios had a thirty percent mortality rates for admissions, then the Indians were, indeed, correct to be reticent patients.[101] Furthermore, any indigenous reticence towards hospitals should be understood within a wider social context in which it formed part of a wider ambivalence towards the medical theory and practices of the 'invaders.'[102]

Nor should it be overlooked that the Spanish appear themselves to have been reluctant hospital-goers. Lanning comments that in Spain "every day...poor men sold their miserable furniture to avoid "going to the hospitals," a phrase that sounded then more like a death knell than a peal of hope."[103] Despite the prevalence of hospitals across Mexico and the obvious esteem in which they were held by some communities, particularly those in the capital and those founded by Vasco de Quiroga, it seems likely that the role played by hospitals as professional healthcare providers was minimal; not only because of the shortage of qualified medical professionals on hand to staff them but also because of patient reluctance to be hospitalised. With the church already playing a critical role as an instrument of power and thus religion it was as religious institutions that hospitals were most successful. As Juan Carlos Aquado Vázquez and Xóchitl Martínez Barbosa

[100]See León Portilla, "Comunidades mesoamericanas," 219. Muriel, *Hospitales de la Nueva España,* 136, further comments that the initial uptake by Indians at the Hospital de los Naturales was low. The consensus appears to be that for the indigenous communities 'hospitalization was equivalent to death," in Campos-Navarro and Ruiz-Llanos, "Adecuaciones interculturales," 599.
[101] Leiby, "Royal Indian Hospital," 576 (although there is no evidence where got this information was drawn from.).
[102] Campos-Navarro and Ruiz-Llanos, "Adecuaciones interculturales," 599.
[103] Lanning, *Royal protomedicato,* 201.

suggest, the charity that hospitals offered provided a space that served as a useful counterweight to the envy that abounded within a new colonial society deeply divided along race, class and economic lines.[104]

Perhaps more importantly still, hospitals were used to address the 'Indian problem' in the New World. Confronted with increasingly dispersed, depressed and dwindling heathen indigenous communities, and with the task of evangelising ultimately legitimising their venture in the New World, hospitals provided a perfect means for the Crown to repopulate, congregate and convert indigenous communities. In this way hospitals fulfilled a primary role, not to tend to the sick but rather as centres to temporarily repopulate the indigent poor, and as religious centres for social control.[105] Hospitals also provided a space for the wider public. Both independently and through their association with the church, hospitals were public spaces interacting with the world around them. In the case of the Hospital de los Desamparados, for example, Solange Alberro suggests that osmosis occurred between the city, the convent and the hospital, through its various activities, such as church services, visiting the sick and purchasing from the pharmacy. [106]

Prisons

Alongside hospitals, prisons provided another official space where the administering of medicines and treatment took place. Doctors, surgeons and apothecaries charged with providing medicines and services to the jails, both

[104] Aquado Vázquez and Martínez Barbosa, "Concepto de caridad," 274-275.
[105] Viesca Treviño, "Médicos indígenas," 140. See also León Portilla, "Comunidades mesoamericanas," 218-219; and Venegas Ramírez, *Régimen hospitalario*, 7-8.
[106] See Alberro, *Orden hospitalaria de San Juan de Dios*, 101.

those run by the municipality and Inquisition, were exclusively appointed from the ranks of licensed Spanish specialists; as a result the treatment and drugs administered to patients from these providers were Spanish.[107] This can be seen, for example, in documents outlining payments made to apothecaries and physicians serving the jails, and perhaps most clearly in the inventory left by the Inquisition apothecary, Gonzalo del Castillo, in 1597 of medicines provided to Doctors Herrera and Diego de los Ríos to give to prisoners.[108] In this extensive inventory of all of the drugs administered to Inquisition prisoners over a six month period, from December 1596 to May 1597 every drug mentioned is from the Old World pharmacopoeia, with the possible exception of *bálsamo.*[109]

Certainly in the case of the Inquisition prisons after 1571, the patients receiving such medicines would have included Blacks and Spaniards, but excluded Indians. While Indians may not have been patients in the Inquisition jails, they were imprisoned in municipal jails, where they too received medicines administered by Spanish doctors, as attested from 1588-1594 when the Indians Andrés González Miguel Ocelotl, Martín Aca, Gabriel Méndez Gerónimo Ticeval and Tomás Francisco were amongst the prisoners named as recipients of drugs provided by the apothecary Hernán Gómez Rubio and administered by Doctor Pedro López.[110]

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[107] Mexico City was prolific at employing physicians, surgeons and other licensed specialists to work in a public capacity. In actual fact the appointment of physician or surgeon to the city was tantamount to being appointed 'jail doctor', see Lanning, *Royal protomedicato,* 44.

[108] AGN Real Fisco de la Inquisición, vol. 29 exp. 11 fols. 56-75 'Libranza de los senores inquisidores para que el receptor y tesorero Martin de Birviesca Roldán pague doscientos noventa y cuatro pesos dos tomines a Gonzalo del Castillo, *boticario* y vecino de mexico, por las medicinas que ha proporciónado por los presos de las carceles del santo oficio,' Mexico, 1597. Memarzadeh, "Medical practitioners," 393-394 has also transcribed it. Paula De Vos, "Art of pharmacy," 140-41, also discusses medicines administered to prisoners.

[109] Although Old World balsams were also in use, the particular type of balsam is not specified.

[110] AGN Archivo Histórico de Hacienda vol. 425 exp. 56 'Mercedes y salarios. Real Hacienda. Gómez Rubio, Hernán, *boticario*. Libranzas que se le dan por las medicinas que da para la Real Carcel,' Mexico, 1594.

Although the doctors, surgeons and apothecaries at these jails were exclusively Spanish, the same was not true of the nurses. In 1656 Sebastián de la Peña, the *alcalde* of the Inquisition jail, was faced with the problem of replacing the current nurse, Ana de León who, at 42, was getting too old for the job. Two things about this document are interesting. In the first instance is the fact that Ana de León, commended for her service to the jails, was also noted for having provided *medicamentos caseros* (home medicines) to the prisoners, although unfortunately no detail of what such treatments consisted of is given. Furthermore, before eventually employing Maríana de Tobar and Catalina de Cervantes as nurses, an *india* is employed as an interim measure. Therefore, while Indians may not have been prisoner patients in the Inquisition jails, they were working as nurses there, administering Spanish remedies, perhaps alongside home remedies.[111]

Blacks may also have been involved in the administering of treatments to prisoners, although perhaps not officially. Gaspar de los Reyes Plata (already in trouble for slashing the apothecary Gómez Rubio across the face and owning an illegal pharmcy) was the official warden-barber of the Inquisition jails in Mexico City from 1594-1599 and surgeon at the Hospital de Nuestra Señora. In the late sixteenth century, his Black slaves, Domingo and Juan, were accused of passing messages in the jail and taking things to and from people illegally. Doctor Herrera further reported that when Reyes Plata slept on duty, his Black ladino *dispensero* completed his rounds for him. While it is of particular interest that this Black slave conducted these duties alone while his master was asleep, it is,

[111] AGN Inquisición vol. 573 exp. 3 fols. 22-35, 'Petición de Maríana de Tobar, persona señalada para que entre en las carcles a la curación de los enfermos,' Mexico, 1656. As previously noted, all of these nurses also have the word *curandera* used to describe them.

nevertheless, interesting to learn that Black slaves worked in this capacity alongside Spanish doctors.[112]

Pharmacies

In the above mentioned case of the apothecary Hernán Gómez Rubio against the surgeon Gaspar de los Reyes Plata, goods held at the surgeon's illegal pharmacy were sequestered and inventoried. Amongst the goods and medicines that were listed was a female Chichimec Indian called Isabel. While it does not specify in what capacity she worked in the pharmacy, evidence suggests that Blacks and Indians did work as pharmacy assistants in early colonial Latin America.

Evidence from Peru, for example, certainly shows that the practice of employing Blacks and Indians as assistants in pharmacies was commonplace. Furthermore, evidence from the Lima *cabildo* records, from as early as 1572, shows that these Black and Indian workers were actively engaged in dispensing drugs and filling prescriptions. This is evident from complaints about their activities, which included supplying prohibited opiate medicines and selling bichloride of mercury.[113] Penalties were fixed for violation of the laws prohibiting the sale of drugs by these assistants, consisting of a fine for the pharmacist and exile for the Black or Indian. Although evidence from Peru cannot be used directly to explain or elucidate events in Mexico, it is, nevertheless, an interesting possibility to bear

[112] AGN Inquisición vol. 214 exp. 5 'Proceso criminal contra Gaspar de los Reyes Plata cirujano familiar del santo oficio a pedimiento de Hernán de Gómez Rubio, *boticario*, por riña,' Mexico, 1592. See also Memarzadeh, "Medical practitioners," 157-204, who provides detailed background history on Gaspar de los Reyes Plata, along with extensive information on the cases involving the slaves Domingo and Juan.

[113] *Libros de cabildo de Lima,* VII, 268, 270, cited in Lanning, *Royal protomedicato,* 51-52.

in mind, particularly since research shows that, certainly Indians, were also employed as pharmacy assistants in Mexico.[114]

Alongside the employment of indigenous and Black assistants there are suggestions that pharmacies sometimes allowed *curanderos* to offer their services on the premises.[115] Furthermore, a document bestowing Doctor Manuel de Sosa the duty of carrying out the obligatory legal inspections of physicians, surgeons, and pharmacies attests to the existence of "boticarios secretos" (secret pharmacies). Although no further details are given it is possible to speculate that such places, engaged in illegal activity, by virtue of being secret, were involved in either the employment of illegal practitioners or the sale of prohibited, or sanctioned medicines, if not both.[116]

Convents

The importance of the religious orders in the art of curing has already been noted, not least in the fundamental role they played in hospitals. Alongside this hospital role, services were also provided to the religious residents, and pilgrims and visitors, of convents. Sometimes the clergy at these convents, who frequently grew their own herbs and medicines, set up impromptu apothecary shops to serve the needs of the surrounding community, particularly in rural areas (although they did not always provide these medicines for free). They also administered

[114] De Vos, "Art of pharmacy," 69.
[115] Hernández-Sáenz and Foster, "Curers and their cures,"34 (although no reference is provided).
[116] AGN General de Parte vol. 8 exp. 32 fol. 15 'Para que el Doctor Manuel de Sosa visite por una vez por su persona donde pudiere y donde no por las que nombrare, que sean de entera satisfacción las *botica*s de esta ciudad y demas partes de esta Nueva España, excepto la de Los Angeles, Tlaxcala y Cholula y los titulos y licencia de los medicos barberos, cirujanos y curanderos, en la forma que aqui se refiere,' Mexico, 1640.

medicines and treatments. Fray Alonso Ponce is noted as using various convent infirmaries during the course of his travels.[117]

Some of the convents gained fame for the treatments administered in their *enfermerías*, not least the convent of San Francisco in Mexico City. This was most probably due to the skills of some of the friars working there, not least the famous friar-nurse Fray Lucás de Almodóvar, who looked after its sick bay and was said to have the "gift of curing." Viceroy Mendoza himself was reportedly treated by Fray Lucás.[118]

Despite the attested healing ability of some of the residents of these convents and the fact that they provided treatment to pilgrims and the surrounding communities, they themselves also called upon the services of other medical practitioners. Although María Rodríguez Sala notes a general lack of evidence relating to convents, her research into the Convento Real de Nuestra Señora de la Concepción (the first female convent in Mexico City) has shown that physicians and surgeons were brought in to cure the sisters. Her research to date indicates that in the earliest days this was predominantly the service of barbers and bleeders, followed by surgeons. Later on physicians were also employed.[119]

Alongside these licensed Spanish physicians, however, there is evidence that other healers provided serves for the Convent of Nuestra Señora de la Concepción. In 1600 Martin de Pedroza – whose mother was languishing in the convent,

[117] Ciudad Real, *Tratado curioso, passim.*
[118] Ciudad Real, *Tratado curioso,* 130, 180: Lanning, *Royal protomedicato,* 213-216; Germán Somolinos d'Ardois, *Fenómeno de fusión cultural,* 159.
[119] See Rodríguez-Sala, "Convento Real de Nuestra Señora de la Concepción, la atención médico-quirurgica de su población femenina," in *Cirugía y Cirujanos* vol. 75 no. 6 (2007): 507-513, http://redalyc.uaemex.mx/pdf/662/66275616.pdf, (12 November, 2011).

overcome by an unknown illness – asked that two girls, a *mulata* and an *india*, be granted license to enter and "provide consolation" for the patient.[120] While it is not entirely clear in what capacity these girls were being asked to serve, a case from later the same year is unambiguous: Antonio de Cadena asked that license be granted to an *indio curandero* to enter the convent to visit his sister, the mother superior Ursula de San Miguel, and treat her for a serious illness.[121]

What also becomes clear, however, is that irrespective of the quality of medicine administered or brought in to these convents, the preference, when residents were ill, sometimes appears to have been for them to leave the convent for treatment outside.[122]

Medicina casera

Whatever role hospitals, convents and pharmacies legitimately played towards meeting the healthcare needs of colonial society, treating between them thousands of patients a year, they were not entirely successful in their role as healthcare providers. In the case of hospitals, not only were they unable to provide access to the professional medical care 'required' according to the scientific standards of the day, but it is unlikely that even when such care was available it was wanted by many colonial peoples, Indians or Spaniards.

[120] AGN Bienes Nacionales vol. 78 exp. 84 'Martin de Pedroza dice que su madre se halla en el convento de la Concepción y hallandose muy enferma necesita de dos muchachas que la sirvan pide se conceda licencia para que puedan entrar a dicho convento,' Mexico, 1600.
[121] AGN Bienes Nacionales vol. 78 exp. 36 fol. 36 'Antonio de Cadena solicita licencia para que un Indio curandero que entre en el monasterio de la Concepción a visitar a la madre Ursula de San Miguel, su hermana, de una grave enfermedad que tiene,' Mexico, 1600. On this same case see also Solange Alberro, *Gachupín*, 77, 86.
[122] AGN Bienes Nacionales vol. 140 exp. 73 'El licenciado Luis Fonte de Meza, cura de la parroquía de la santa Veracruz sobre que en el convento de la Concepción tiene una sobrina monja profesa llamada María de la Purificación y hallarse enferma, solicita su salida para curarse,' Mexico, 1635.

The key to understanding this lies, in part, with Gerónimo de Mendieta's earlier reference to the fact that Indians preferred to stay at home when sick.[123] Although such a state of affairs was no doubt frustrating for the Spanish colonisers hoping to recongregate indigenous communities in villages and minister sanctioned healthcare in designated environments, it should have come as little surprise as it was exactly the same preference expressed by the Spanish themselves. Indeed, while there was an expectation that the sick person with a house and some fortune had no need to be hospitalised – that in order to meet their charitable objectives hospitals be reserved for the treatment of those unable to afford alternatives, the truly desperate and desolate – it seems most likely that those with the means or funds to avoid hospital treatment would have avoided them anyway.

Cervantes de Salazar's previously mentioned compliment to the Hospital Real de los Naturales in 1554 – that its patients were as well treated as Spaniards were at home[124] – combined with the idea that the first hospitals built were built for the Spanish because they were a long way from home and family to look after them, and so needed them, serve to demonstrate that those with the option of being treated at home, by familiar faces in familiar surroundings would have done so.[125] Indeed, in 1632 Alvarado de Velasco, who found himself ill, asked that his daughter be permitted to leave the convent she was lodged at in order to come and treat him at home.[126] If such things mattered to the Spanish, they would have been even more poignant for indigenous patients, for whom hospitals and Spanish medicine in general were unknown quantities.

[123] See again, Mendieta *Historia eclesiástica indiana*, book III, chap. 49, 307.
[124] Guerra, *Hospital en Hispanoamerica*, 216.
[125] Muriel, "Los hospitales," 229-223.
[126] AGN Bienes Nacionales vol. 140 exp. 30 'Alvarado de Velasco dice que tiene en el convento de Regina, una hija llamada Lucia de Velasco en servicio de la madre Isabel de San Juan, y hallandose el enfermo y estando ella contra su voluntad, pretende sacarla,' Mexico, 1632.

In part this preference to be treated on home territory manifested in the contracting of licensed doctors and nurses to do home visits, which it is known they did.[127] Perhaps more commonly, there was a reliance on the care of friends or family members. As previously mentioned, books existed in Spain to cater to precisely such lay needs, and this quickly came to be the case in Mexico too, with the early publication of vernacular texts aimed at non-professional carers, such as the works of Alonso López de Hinojosos and the volume later written by Agustín Farfán.

Indeed, evidence throughout the historical record attests to a general and widespread knowledge of common healing practices, particularly bleeding and purging, amongst the Spanish. Pedro Arias de Benavides notes the common application of *ruibarbo de las Indias* amongst the Spanish colonists for purging.[128] And Alonso Ponce was reportedly "so uncomfortable from the swelling in his nipple and other complaints, that he took syrups and even had to purge himself that same Holy Saturday." [129]

Alongside the obvious appeal of being treated at home by those nearest and dearest was the added fact that the cost of medical treatment was so high, nor were the outcomes in an age of pre-scientific medicine likely to be particularly impressive. As Oviedo comments on his application of tobacco:

[127] See AGN Civil vol. 985 exp. 8 'Proceso del licenciado Contreras contra don Antonio Velázquez sobre pesos de su curación,' Teotihuacan, 1572; and de Ciudad Real *Tratado curioso,* 243, where mentions that the guardian of San Francisco was sent to cure Alonso Ponce.
[128] Arias de Benavides, *Secretos de cirugía*, chap 8, 40.
[129] Ciudad Real, *Tratado curioso,* 73.

> In my house I have cured and will continue to cure many of my Indians and Black slaves, and even Christians, who have healed well. In truth many of them were suffering from such bad wounds that it would have cost me much money to pay the surgeons, whom I doubt would have known any better how to cure them.[130]

Perhaps most importantly, home treatment allowed patients to select precisely the type of treatment (and practitioner) that they wanted, enabling the combination of standard methods such as bleeding and purging with more superstitious practices.

[130] The original reads, "en mi casa he curado yo e fecho curar (en veces) muchos indios e esclavos negros mios, e aun algunos cristianos, e han sanado muy bien. Y en verdad algunos dellos de tales llagas, que me costaran muchos dineros del cirujano, e no sé si las supiera curar," Oviedo y Valdés, *Historia General,* part I, book XI, chap. V.

C**hapter 5**

PRODUCTS

Of all the areas for medical exchange and fusion, that of plants and products in the New World has received the most attention, not least because of the previously discussed view amongst many scholars that it was in this part of the medical arena that most, if not all, exchange took place. Earliest reports back from the New World certainly attest to the fact that the Spanish were impressed by the medicinal herbs they encountered – both by the structure of the system in place, and by the quantity, variety, and healing quality of herbs. Alongside Bernal Díaz's mention of gardens in Moctezuma's palace full of "medicinal and useful herbs,"[1] are Cortés' own descriptions of "streets of herbalists where all the medicinal herbs and roots found in the land are sold. There are shops like apothecaries', where they sell ready-made medicines as well as liquid ointments and plasters."[2] Oviedo bolstered such reports with publication of his *Historia general y natural de las Indias,* which contained glowing reports of plants such as the "excellent" palo santo from the guaiacum tree "which cures buboes."[3]

These positive early reports were quickly followed by product samples back to the mainland, with reports suggesting the king himself was supplied with guaiacum (guayacán) and cañafistula from as early as 1545.[4] Indeed, Crown interest in the

[1] Bernal Díaz, *The conquest of New Spain,* trans. J.M. Cohen (Penguin Books: London, 1963), 231. See also Blanton, "Medical references," 399-405.
[2] Hernán Cortés, *Letters from Mexico,* trans. and ed. by Anthony Pagden (New Haven and London: Yale Nota Bene, 2001), The second letter, 103. See also Donald Ugent "Medicine, myths and magic: the folk healers of the Mexican market," *Economic Botany* 52(2000):427-438.
[3] Oviedo y Valdés, *Historia general,* part I, book X, chap. II.
[4] Huguet-Termes, "New World materia médica," 374.

potential of the new plants was engaged from the very beginning, not least in a bid to exploit the commercial opportunities these new remedies presented. From as early as 1528, when Santo Domingo resident Antonio de Villasante presented the Council of the Indies with reports of a balsam from the New World that was good for healing wounds, the Crown authorities were actively engaged in promoting experimentation to establish the medicinal quality of plants.[5] Interest intensified with the publication, in 1565, of Nicolás Monardes' *Historia medicinal de las cosas que se traen de nuestras Indias Occidentales,* and culminated in Francisco Hernández's famous botanical mission to the New World in 1570.

The introduction of these herbs and remedies into Europe was undoubtedly of great significance. Scholarly attention, however, has been largely focused on exchange and the significance of this as gauged through observation of the assimilation of New World plants into the elite Spanish domain, particularly the appearance of these New World plants in Spanish medical treatises of the time, both in Spain and the New World. Relatively scant attention has been paid to the wider picture regarding the reception, assimilation and exchange of new products amongst colonial populations – Spanish, African and Indian. The intention of this chapter is, therefore, to look at the reception and assimilation of products between these people and, where possible, to evaluate the manner by which and the degree to which this occurred.

[5] In 1530 Villasante's findings were refuted by, amongst others, a doctor Barreda. The Crown, with an eye to the commercial potential of the balsam set about trying to establish the benefits of the plant, not least by sending samples to doctors in hospitals across the country to test on their patients and report back on their findings. Although they were unable to contest claims that it was different to Old World balsam they hoped to be able to prove that it was nevertheless a useful remedy, in a political move with commercial aims. See, Antonio Barrera-Osorio, "Knowledge and empiricism in the sixteenth-century Spanish Atlantic world," in *Science in the Spanish and Portuguese Empires, 1500-1800,* eds. Daniela Bleichmar *et al.* (Stanford, California: Stanford University Press, 2009), 222-224.

Scholarly Spanish interest in American medicines re-evaluated

Discussions of the exchange of medical information from the New World to Spain have focused much attention on the early Spanish scholarly interest in and assimilation of the New World *materia medica*, in Spain and Mexico, as demonstrated in the works of Andrés Laguna and Nicolás Monardes, from Spain, and Francisco Hernández, Francisco Bravo and Agustín Farfán, from Mexico (along with the evidence contained in Sahagún's work and the *Codex Badianus*). It is worth briefly surveying these works before considering the precise nature of their value to any examination of products exchanged between Spain and the New World.

In 1555 Andrés Laguna published his *Annotations on Dioscorides of Anazarbus* in which, while few in number, the New World plants that do feature are given diligent consideration. Laguna, for example refers to balsam, that Dioscorides himself could not find, talking of New Spain balsam as a "sovereign remedy" useful for many ailments. Estoraque is also included as a possible substitute for Storax Styracinus, as mentioned by Dioscorides. Guaiacum and sarsaparilla are also included.[6]

Perhaps most famous, and certainly most significant, for the early dissemination of information on New World plants was Nicolás Monardes' work entitled *Historia Medicinal de las cosas que se traen de nuestras Indias Occidentales*, published in 1565, in which he relays comprehensive information on New World remedies gathered through personal experience and experiment. While it is

[6] See Teresa Huguet-Termes, "New World materia médica," 363-4.

certainly important to understand that Monardes' position as "a millionaire physician with a great economic interest in American drugs," lead to cynical reception of his work as mere propaganda in some quarters,[7] this should not overshadow the acknowledged role that the *Historia medicinal* played in disseminating information regarding American drugs across Europe.[8]

In 1570 Francisco Bravo produced the first medical work published in the New World – *Opera medicinalia* – arranged in four essays dealing with typhus, venesection in pleuresy, the doctrine of critical days and, most pertinently in terms of assimilation, the nature and property of sarsaparilla.[9] In the same year that Bravo published his *Opera medicinalia*, King Philip II instructed Hernández to undertake a botanical investigation of the New World, beginning in New Spain, "because we are informed that more plants, herbs and medicinal seeds are to be found there than anywhere else."[10] Two years later Hernández confirmed the king's suspicions in a letter revering the "very great virtues" and "incredible and immense usefulness" of the plants encountered, going on to claim "there will be no need to bring to the Indies medicines from Spain, nor to Spain from Alexandria."[11] With six months further investigation Hernández concluded that "the Indies could provide medicines for the whole world without the need to ship

[7] Not least by Juan Fragoso, a Latin surgeon (1530-1597) who in his 1572 *Discursos de las cosas aromaticas* claimed, for example, that the Fig Tree of Hell Oil that Monardes promoted was unnecessary as many alternatives existed in Spain, see Teresa Huguet-Termes, "New World materia médica," 365.
[8] Monardes work was translated into several languages, most famously the English version by John Frampton entitled *Joyfull Newes Out of the Newe Founde Worlde*. On Monardes' importance and fame across Europe see Estes, "European reception of first drugs," 5; and Bleichmar, "Books, bodies and fields," 85.
[9] Saul Jarcho, "Medicine in sixteenth-century New Spain," 430.
[10] 'Instructions of Philip II to Dr. Francisco Hernández, January 11, 1571' in Varey, *Mexican treasury*, 46.
[11] 'Letter 3 from Francisco Hernández to King Philip II, November/December 1571,' in Varey, *Mexican treasury*, 48.

them from any other place at all."[12] Seven years later, in 1577, Hernández's work was complete.

Agustín Farfán published the first version of his *Tractado breve de anathomia y chirugia, y de algunas enfermedades, que mas communmente suelen haver en esta Nueva Espana* in 1579. In the section on remedies for syphilis he recommends, among others, sarsaparilla and guaiac ointment with white lead. In the publication of a second edition, thirteen years later under the new title of *Tractado breve de medicina*, Farfán places greater emphasis on the needs of the lay reader without access to physician or pharmacy. In this second edition confession comes to the fore as the primary therapy recommended for most complaints and there was furthermore a marked increase in the number of American products named, with *matlalxihuitl* (*Commelina pallida*) and *iztauhyatl/estafiate* (Wormwood, or *Artemisa mexicana*) joining, among others, mechoacan root, sarsaparilla and guaiac from the first.[13]

As these texts demonstrate, the appearance of New World plants in Spanish medical treatises occurred from an early date, perhaps unsurprisingly given the Crown's own efforts to involve physicians in experimentation with the new products. While the simple inclusion of these new plants in these sixteenth century medical works shows that New World plants impacted on the consciousness of the Spanish medical establishment, and the transition from Farfán's first and second edition suggests that the new plants acquired greater

[12] 'Letter 4 from Francisco Hernández to King Philip II, April 30, 1572, in Varey, *Mexican treasury*, 50.
[13] See Fray Agustín Farfán, *Tractado breve de medicina* [1592] (Madrid: Ediciones Cultura Hispanica, 1944). For more in depth information and analysis of this text see Jarcho, "Medicine in sixteenth-century New Spain," 427-431. For more information on the Aztec and colonial uses of *Matlalxihuitl* (commelina pallida) and *iztauhyatl/estafiate*, see Ortiz de Montellano, *Aztec Medicine, 158,* 183, 195-199, 203.

significance with time, what else can be gleaned from these inclusions? Perhaps one of the most surprising elements of this encounter is how easily all of the authors are able to accommodate the new material. Even a staunchly conservative medic like Luis Mercado happily included such new remedies as guaiacum, sassafras and sarsaparilla.[14] By seeking humoral qualities for previously unknown plants, the alien flora and fauna was quickly slotted into a European framework that was recognised.

Sometimes, notes were recorded of the Indian understanding and application of their plants, although this often prompted disagreement, seen for example in Bravo's dispute over the hot and dry nature of sarsaparilla as opposed to the cold and dry "wrongly" asserted by Mexican physicians.[15] Indeed, there was even internal disagreement at times amongst the Spanish doctors over how best to categorise the new plants, seen for example through Monardes and Bravo's assignment of sarsaparilla as "hot and dry" as opposed to the "cold and dry" given by Hernández.[16] Nevertheless, such disputes did not fundamentally challenge the combined wisdom that understood the new plants according to Old World schema which deemed, for example, *copal* and *anime* as "hotte in the second degree, and moiste in the firste."[17] It is testament to the adaptability of the humoral model that this alien encounter did not for a second test its organising principles – that "the enlargement of the realm of facts caused no trespass on the realm of the old ideas"[18] – and, perhaps, goes some way towards understanding the durability and

[14] Luis Mercado was a Galenist physician (1525-1611) whose *Consultaciónes Morborum* were published after his death, see Huguet-Termes, "New World Materia médica," 367.
[15] Jarcho, "Medicine in sixteenth-century New Spain," 430.
[16] Estes, "European reception of first drugs," 11-12.
[17] Monardes, *Joyfull Newes*, part 1, 11-13.
[18] Jarcho, "Medicine in sixteenth-century New Spain," 431.

accessibility of this model, which will be considered in greater depth in the following chapter.

Sometimes, the Christian idea that God supplied new remedies for new diseases facilitated their acceptance at both a theoretical and practical level, not least in Laguna's assimilation of guaiacum and sarsaparilla into the Galenic system, as remedies for syphilis. [19] In other cases, plants were recognised as counterparts or alternatives to those already known from Europe. This was true, for example, for chile peppers which were likened to the peppers known from the Middle East and which were thus ascribed the same attributes of stimulating appetite and improving digestion. Similarly, New World balsams, comparable to those of the Old World which were long known to help heal wounds, were quickly praised by, among others, José de Acosta who stated, "for good reason balsam is esteemed for its excellent smell and extreme ability for curing wounds."[20]

However, while such comparisons may have facilitated the classification of New World products, they often hindered their adoption over Old World alternatives. By 1590 Acosta had even changed his mind about balsam deeming the New World version less effective than the Old.[21] Where Old World alternatives were available they appear to have been favoured; many purgatives already existed in the Old World, for example, and Andrés Laguna ignored all of the new World

[19] See Huguet-Termes, "New World materia médica," 363-4.
[20] The original reads, "...el bálsamo es celebrado con razón por su excelente olor, y mucho más extremado efecto de sanar heridas," in José de Acosta, *Historia natural y moral de las Indias,* [1590] (Madrid, 1954), book IV, chap. XXVIII, http://www.cervantesvirtual.com/obra-visor/historia-natural-y-moral-de-las-indias--0/html/, (12 November 2011). Acosta was a Jesuit missionary, most famous for writing this work.
[21] Estes, "European reception of first drugs," 5.

purgatives such as cañafistula.[22] An interesting study by conducted by J. Worth Estes, which analyses Galenic classification of New World plants concludes that their minimal acceptance among elite circles can be explained by the fact that most were deemed hot to varying degrees, and there was already an abundance of hot plants in use in the Old World. [23]

Indeed, despite the ease with which the new drugs were theoretically assimilated and despite how much scholarly attention focuses on the elite reception of these new drugs it is surprising how *limited* their inclusion in sixteenth century medical works actually was. Excluding those works which had either a wider remit (namely that of Hernández which was to create a botanical encyclopaedia), or an ulterior motive (such as Monardes' which sought personal fiscal benefit through commerce), attention in the medical literature is incredibly selective and focuses almost exclusively on a small handful of products such as sarsaparilla, sassafras and guaiacum. Medical scholars were too busy identifying those plants directly featured in Dioscorides *Materia medica* of AD70. This coupled with a general lack of testing and knowledge would have generated a degree of fear, since medical practitioners were held directly culpable for mistakes made with poorly tested products. These factors appear to have driven these physicians away from extensive or meaningful inclusion of the new remedies during the early colonial period, particularly where Old World versions were available.

[22] Huguet-Termes, "New World materia médica," 364, suggests that where Old World remedies were available, they were adopted; in the case of cañafistula, many Old World purgatives already existed. Although the reluctance exhibited by the physicians themselves does not appear to be the case with the New World residents, Acosta, *Historia natural*, book IV, chap. XXIX, reports, for example, that copious amounts of cañafistula were exported from Mexico to the resident of Hispaniola.
[23] Estes, "European reception of first drugs," 11.

Although the mention of New World products in such works is a useful preliminary indicator of interest, reception or assimilation, it is a particularly imprecise approach. Félix Pastor Frechoso questions the validity of using such 'mentions' as a measure of elite assimilation, and recommends instead the consultation of pharmacy inventories.[24] Such research reveals that American drugs began to show up in Sevillian pharmacies from as early as 1551, and that by 1628 sarsaparilla, caraña, tacamahaca, mechoacan, sassafras, bezoar occidental, tobacco and chocolate could be found in Castilian pharmacies.[25] While this methodology serves to reveal a picture with a marginally earlier timeframe and a minimally expanded repertoire of goods, it is, nevertheless, true that 150 years after the discovery of the Americas, less than half of the products described by Nicolás Monardes were accepted into Old World medicine and only seven eventually made it into the European pharmacopoeia: caraña, jalap, liquidambar, contrayerva, guaiacum, hipecac and quinine.[26] Indeed, until 1590 very little information regarding American drugs was included in European herbals at all, with the first serious consideration being given in John Gerard's herbal of 1597.[27] Similarly, the pharmacies in Mexico were full of Spanish drugs, although they were encouraged to experiment with indigenous drugs. In the elite domain, therefore, both texts and pharmacy records, paint a picture of considerable interest

[24] Félix Pastor Frechoso, "La materia médica americana en Castilla," in *La medicina en el descubrimiento*, ed. J. Riera (Valladolid: Universidad de Valladolid, Ediciónes del Seminario de Historia y Medicina, 1991), 43-64. For a very good overview of pharmacies in sixteenth century Seville, see Fernández-Carrion and Valverde, *Farmacia y sociedad*.

[25] For Seville dates see De Vos, "Art of pharmacy," 109; for Castille see Pastor Frechoso, "Materia médica americana," 48. (The latter gives the actual dates of first appearace as 1560 for sarsaparilla, 1595 for caraña and tacamahaca, 1617 for mechoacan, sassafras and bezoar occidental and 1628 for tobacco and chocolate).

[26] See Estes, "European reception of first drugs," 11-12; and De Vos, "Art of pharmacy," 103. It is worth noting that there is disagreement over the precise number of products included in Monardes' work; while De Vos cites Monardes as listing 68 products, Estes suggests that 51 were included.

[27] John Gerard was a barber-surgeon in London, see Estes, "European reception of first drugs," 13-15.

in American drugs but of limited actual consumption and application, certainly in mainland Spain.[28]

Teresa Huguet-Termes posits that the combination of such evidence, particularly pharmacy inventories has lead historians to conclude that the impact of American drugs on the wider population in Spain, and not just the elites, was also limited; that as pharmacies were slow to stock them so too were they slow to filter down to the wider population. Her research suggests, however, that the picture emerging from academics and pharmacies is a far cry from any true picture of consumption. Not only do pharmacy records only reflect the purchasing choices of those rich enough to afford them (and, one can speculate, often not even those given the fact that the king has access to American drugs by 1545 despite their first appearance in pharmacies in 1551) but, furthermore, the minimal quantities recorded in Spanish pharmacies in the sixteenth century do not reflect import-export information from the time. This research is based not on first hand reports, such as that of Juan Fragoso who, in 1572 reported that "such great quantities of cañafistula are now being bought in laden vessels from those lands that there is sufficient to supply not only Spain, but all Europe and the Levant,"[29] but on meticulous study of importation records which reveal the enormous scale of drug imports into Seville from 1568-1619, not reflected in the pharmacy inventories.[30] It is reported that between 1520 and 1600 the number of ships used annually for

[28] See De Vos, "Art of pharmacy," 11. Mexican pharmacies were not entirely void of indigenous products, for example the tlacuache tail, listed in Ruiz de Alarcón as a general remedy for difficult childbirth and widely use, was available in *boticarios*, see Coe and Whittaker, *Aztec Sorcerers*, 221; and Lanning, *Royal protomedicato*, 238.

[29] From Juan Fragoso, *Discursos de las cosas aromaticas, arboles y frutales, y de otras muchas medicinas simples que se traen de la India oriental, y sirven al uso de medicina* (Madrid: Francisco Sánchez, 1572), fol. 77r, translated and quoted in Huguet-Termes, "New World materia médica," 371.

[30] 209 tons of cañafistula (2.5 million doses), 670 tons of sarsaparilla (7.5 million doses) and 930 tons of guaiacum (2.5 million doses), see Huguet-Termes, "New World materia médica," 371-375.

the trade in drugs doubled in both size and number, increasing their capacity fourfold. In the case of balsam from the Indies it should also be noted that within 50 years of its initial importation into Spain in 1524, Monardes reported that the price fell from 100 ducats an ounce to ten, reflecting the rapid growth of imports.[31]

It is instead suggested that many of the imported drugs were neither reaching, nor intended for, elite environments. Instead they were being distributed in underground ways rather than through formal outlets such as pharmacies. That there was an underground market for New World drugs in Spain is supported by reports of the fact that the tacamahaca plant was known and used by *morisco* healers and their women. Given how marginalised and of what low status *moriscos* were on the mainland their use of tacamahaca is one indication of how wide the dispersal of the drug had become.[32] Similarly, Monardes reports of balsam that "the use thereof is a common Medicine in all surgery of poore folkes: seeying that with one medicine all effectes is doen therewith;" [33] a fact that reflects its wide distribution (and which rendered it less popular with the elites).

Re-assessing the consumption of New World drugs in Spain is relevant to understanding their acceptance in Mexico, particularly since Teresa Huguet-Termes concludes that this situation reflects, to a large degree, the success such drugs were having with Spanish colonists in the New World. Any underground consumption in Spain was, therefore, likely a reflection of the success these medicines were having with Mexican colonists, and a result of the reports and

[31] See Estes, "European reception of first drugs," 5, 13-15; Monardes, *Joyfull Newes*, part 1, 23; and Pastor Frechoso, "Materia médica americana," 48.
[32] García-Ballester, "Academicism versus empiricism," 155.
[33] Monardes, *Joyfull Newes*, part 1, 25.

samples that were being sent back, or, indeed, brought back for personal consumption.[34] Oviedo gives one such example of Joan de Vega whom he met in Valladolid in 1513 and who, having lived in Cuba "had a lot of experience with this fruit [manzanillos de las avellanas]" and had brought some back with him to Spain because it worked so well as a purgative.[35]

Spanish reception of indigenous medicines in Mexico

Although much of what Francisco Hernández learned about indigenous medicines in Mexico he learned from indigenous herbalists and doctors, he was also able to gather information "from the Spaniards," themselves, who told him, for example, that tobacco "calms pains in the limbs and reduces inflammations, and that it takes away flatulence, disperses chronic and seemingly incurable pains, and that it is good for the various problems caused by fleas."[36] This ability to provide such detailed information on Mexican flora and fauna was clearly the culmination of 70 years of experience and experimentation with indigenous drugs, begun in the Caribbean and continued in New Spain. While it is impossible to give an exhaustive acccount of all those drugs and herbs taken by the Spanish in Mexico the aim is that by providing evidence drawn from a selection of sources this study can go some way towards better understanding not simply the fact of such widespread assimilation but its nature and the reasons for it.

[34] Huguet-Termes, "New World materia médica," 372-375. This idea is also echoed in Anastasio Rojo Vega, who claims that "drugs sent back by emigrated families began to be used popularly before official medicine recommneded their inclusion in pharmacy *materia medica,"* see, Anastasio Rojo Vega, "Exportaciónes de libros a América en el siglo XVI," in *La medicina en el descubrimiento,* ed. J. Riera (Valladolid, Universidad de Valladolid, Ediciónes del Seminario de Historia y Medicina), 67.
[35] Oviedo y Valdés, *Historia General,* part I, book X, chap. IV.
[36] Varey, *Mexican treasury,* 115.

The seeds of this receptiveness to the new *materia medica* had no doubt been sown in the earliest colonial days when the conquistadors had been forced, for lack of options, to accomodate local remedies. This can be seen in the work of Captain Bernardo Vargas Machuca in which "diagnosis was simple and treatment prompt and...where the emergencies of military life made Indian remedies acceptable without imposing the barriers of doctrine."[37] Amongst the products Vargas Machuca recommended for the surgeon to have with him were several indigenous plants: mechoacán, tobacco, incense resin (anime), balm and caraña, as well as a bezoar stone. He goes on to refer to other indigenous products such as maize (and chicha) several times throughout the text, although not always in a strictly medical context.[38]

Similarly, the early missionaries were, it seems, quickly forced to experiment. Monardes reports that in the early 1520s Franciscan friars were introduced to mechoacán root by the physician of the chief of the Tascaroras. He comments that "in a countrie so distaunt from their naturall soyle, some of them fell sicke" and upon being offered help by the Indian chief, Caconcin Casique, and "seying the little helpe that he had there, and the want of a phisition, and other thynges of benefite," the principal friar accepted the offer, and within a day they all felt better.[39] It is reported that they sent news of this marvellous plant to Mexico City and it soon came to be grown in colonists' gardens all over the land.[40]

[37] Jarcho, "Medicine in sixteenth-century New Spain," 441.
[38] Vargas Machuca, *Indian Milicia,* book II, 61. It is worth noting that in Saul Jarcho's work the list is similar but it excludes caraña and anime and includes oil of figs instead, see Jarcho, "Medicine in sixteenth-century New Spain," 440.
[39] Monardes, *Joyfull newes,* part 1, 55.
[40] This example is also given in Barrera-Osorio, "Knowledge and empiricism," 227-8; and Bleichmar, "Books, bodies and fields," 92.

In these early days when necessity surely dictated the adoption of indigenous remedies, it seems again, that comparison with Old World equivalents aided the transition; José de Acosta notes, for example, that Spanish colonisers gave Spanish names to indigenous products where comparisons were forthcoming. Thus in the case of maguey, which, according to Antonio Vázquez de Espinosa, "resembles aloe," the sap was likened to honey which Antonio de Ciudad Real reported was "very medicinal" and used across Mexico "in place of white honey." Similarly, according to Antonio de Ciudad Real, the drink atol made from maize was considered to resemble "poches, gachas ó poleadas de Castilla," (which were all types of porridge).[41]

It seems, however, that the colonisers remained receptive to indigenous plants beyond the inititial phase of contact. Thus, even when an infrastructure was put in place to support the import of Spanish medicines into Mexican pharmacies, the use of indigenous remedies continued. In 1548 Fray Lúcas de Almodóvar (the previously mentioned friar-nurse of the San Francisco convent infirmary) stated that "some medicines were sent from Castile, because they could not be found in this land," clearly implying that medicines from Spain were only sought when no suitable remedy could be found on Mexican soil. [42]

Quality, availability and, most importantly, cost, would all have played a role in the continued acceptence, if not active preference, for indigenous plants.

[41] See Acosta, *Historia natural,* book IV chap. XIX , where he notes that "a muchos de estas cosas de Indias los primeros españoles les pusieron nombres de España, tomados de otras cosas a que tienen alguna semejanza;" Antonio Vázquez de Espinosa, *Compendium,* book III chap. X, 138; and Ciudad Real, *Tratado curioso,* 101, 103.

[42] The original reads, "hasta Castilla enviaba por medicinas, porque algunas no se hallaban en esta tierra," in Joaquín Garcia Icazbalceta, *Don fray de Zumárraga: primer obispo y arzobispo de México,* (México: Antigua Librería de Andrade y Morales, 1881), Tomo III, 322-325, quoted in Somolinos d'Ardois, *Fenómeno de fusión cultural,* 159.

Medicines were notoriously expensive, not least because traders and pharmacists tended to overcharge for them in order to reap rich profits. In Mexico this was exaccerbated by the additional transport costs associated with the delivery of drugs from the mainland. As early as 1537 the *cabildo* of Mexico City was involved in a fight with apothecaries, who themselves admitted that costs were "very dear and excessive," but were nevertheless appealing regulations imposed on them; price fixing became a commonplace weapon used to quash the inflation of medicine prices. [43] Cortés' own *boticario* cited the efforts involved in getting Spanish medicines to the New World as a justification for his elevated prices. [44]

Doctors such as Francisco Hernández further acknowledged, how expensive medicine was and claimed to have written more extensively on the Mexican pharmacopoeia for precisely this reason; his suggestion was, therefore, fairly explicit; that by imparting such knowledge the medicines of Mexico could be used in place of the expensive European versions.[45] By comparison, Pedro Arias de Benavides reports that balsam of the Indies, for example "is picked and sold by the Indians...as cheap as if it were oil sold in Spain."[46] Furthermore, if Arias de Benavides' remark that the Indies colonists were "so tight-fisted" ("*codicioso*") that they favoured certain treatments, such as a particular sarsaparilla application which involved no dieting or time in bed, and thus no related loss of earnings, it would seem that the prohibitive costs of European medicines would have been even more of a consideration for colonial Spaniards than for those in Spain. [47]

[43] Lanning, *Royal protomedicato,* 54-55.
[44] Somolinos d'Ardois, *Fenómeno de fusión cultural,* 157.
[45] Letter 11 from Francisco Hernández to King Philip II, February 10, 1576, in Varey, *Mexican treasury,* 57.
[46] The original reads, "cogen los indios y traenló a vender...y dánlo tan barato como si fuese aceite llevado de acá a España," in Arias de Benavides, *Secretos de cirugía,* chap. 12, 45.
[47] Arias de Benavides, *Secretos de cirugía,* chap. 5, 37.

Standing alongside the obvious costs of imported European medicines is evidence that, certainly those medicines available in Mexico and the New World, were often of degraded quality; rendered increasingly ineffectual through their journeys and time spent on pharmacy shelves, where Hernández reports they "shrivelled up and decomposed."[48] Pedro Arias de Benavides states in no uncertain terms that:

> the simples were corrupted as a result of long periods spent waiting in Spain having already been picked, and then time spent on ships and waiting to be sold to pharmacies in the Indies while merchants haggled with buyers over prices; inevitably they were corrupted and being thus corrupted the simples, the compounds could not fail but to also be bad, and they do not work.[49]

concluding that as a result "in the Indies they mock the medicines arriving from Spain." Indeed, the possibility to grow produce in Mexico, both local species and imported plants was exploited by many colonists. It is for precisely this reason that both Hernández and Arias de Benavides congratulated Bernardino de Castillo who grew, among other things, *ruibarbo de las Indias* on his Cuernavaca plantation (in itself a useful indication of the degree of acceptance by Spanish colonisers) which worked far better than imported rhubarb because it was fresh and not sitting around on shelves.[50] Indeed, growing plants locally appears to have been an option adopted by many colonists, not least Franciscan convents, many of whom had their own herb gardens attached and thus became centres for medical trade.[51]

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[48] Varey, *Mexican Treasury*, 145.
[49] The original reads, "estaban corrompidos los simples a causa del mucho tiempo que están en España cogidos: y después los que se detienen embarcados y más lo que se tarda en vender a las *botica*s de Indias, que les quieren recatar los mercaderes si saben que tienen necessidad de una cosa y después se detiene también en sus *botica*s, de suerte que se viene a corromper, pues estando corrompidos los simples, no pueden ser buenos los compuestos y no obran... hacen burla en las indias de las medicinas que llegan de España," in Arias de Benavides, *Secretos de cirugía*, chap. 9, 41-2.
[50] Arias de Benavides, *Secretos de cirugía*, chap. 8, 40; and Varey, *Mexican treasury*, 144-145.
[51] See Barrera-Osorio, "Knowledge and empiricism," 228-9.

Alongside the cost and disadvantages of imported European medicines were the obvious merits of the New World pharmacopoeia. American plants' praises were regularly sung by the most eminent and respected doctors of the day and the Crown was going to expensive lengths to investigate them; these facts would not have been lost on Spanish settlers. This is seen, for example, with maguey – which the surgeon Pedro Arias de Benavides claimed was a tree without equal virtues and properties in the world –[52] and also cañafistula and guayacan for which both Francisco Hernández (for cañafistula) and Oviedo (for guayacan) deemed it excessive and unnecessary to even extol their virtues or describe their application because they were "already notorious and their use commonplace."[53] Equally balsam, was reported by Arias de Benavides to be widely used by Dominican friars, although he was himself somewhat sceptical of the benefits.[54] And finally Bernal Díaz del Castillo reported eating cakes made out of maize during the conquest.[55] Hernández and Acosta further compared maize more than favorably to wheat as food and medicine.[56]

While in the case of maize, alongside its obvious adoption as a foodstuff, archival evidence seems to reveal more about its magical rather than medicinal applications (such as in the casting of spells in water which reguarly appear in the Inquisition documents[57]), reports by doctors and chroniclers such as Antonio de Ciudad Real, José de Acosta and Francisco Hernández, reveal, not only their own

[52] The original reads, "no creo yo que hay arbol en el munco de tantas virtudes, ni propriedeades, ni que de tantas cosas sirva," in Arias de Benavides, *Secretos de cirugía,* chap. 16, 49-50.
[53] See Oviedo y Valdés, *Historia General,* part I, book X chap. II; and Varey, *Mexican treasury,* 124.
[54] Arias de Benavides, *Secretos de cirugía,* chap. 12, 45.
[55] Díaz del Castillo, *Memoirs,* 373.
[56] Acosta, *Historia natural,* book IV, chap. XVI; and Varey, *Mexican treasury,* 111.
[57] See, for example, AGN Inquisición vol. 278 exp. 13 'Nombramientos hechos por fray Diego de Muñoz de honesta persona, para notario,' Querétaro, 1614.

thoughts on its medicinal properties and health benefits, but more direct evidence of its medicinal use and preparation by Spaniards. Hernández reported that "in Mexico it is important and continues to be used, not just among the Indians but also among the Spanish."[58] Amongst the various applications possible, Acosta suggests that "the cleanest and healthiest method and which least intoxicates is to toast maize; this is used by by the most upstanding Indians and some Spaniards, because it is a very healthy drink for kidneys and urine."[59] Hernández goes even further, revealing that when taken as a powder dissolved in water, "the way the chemists prepare it" it cleanses the passages, showing that the medicinal preparation of maize was not restricted to laymen. [60]

Despite the clear perception of the benefits of maize and the fact that it is adopted by some Spaniards, Hernández nevertheless comments that he does not understand why "the Spanish, always diligent imitators of all things foreign, who know so well how to exploit other people's inventions, have still neither adapted for their own use, nor attempted to plant and cultivate this seed."[61] This suggests somewhat limited use of this plant by the Spanish people, despite glowing reports from doctors and chroniclers. This comment does, however, suggest that in general the Spanish were keen adopters and assimilators of foreign products. One final fascinating, and tantalising, suggestion in Hernández's summary of maize regards a gruel concoction made with lime and maguey honey which, he says, "the Spanish have also begun to savour...but mainly those born of Spanish and

[58] Varey, *Mexican treasury*, 111.
[59] The original reads, "el modo más limpio y más sano y que menos encalabria es de maíz tostado; eso usan los indios más pulidos y algunos Españoles por medicina: porque en effecto, hallan que para rinones y orina es muy saludable bebida," in Acosta, *Historia natural,* book IV chap. XVI.
[60] Varey, *Mexican treasury*, 111.
[61] Varey, *Mexican treasury*, 111.

Indian parents, or Indians and *negros*, or *negros* and Spanish."[62] This introduces the spectre of a greater receptivity to indigenous products according to racial background. It is particularly fascinating since the inclusion of "*negros* and Spanish" shows that he considered that any background race mixture made you more receptive and not simply one that involved indigenous parentage.[63]

Cacao is another of the products which received a lot of attention. While it is known that cacao was highly prized by the Aztec, not simply as an elite drink but as a currency for trade, it seems that it was also quickly esteemed by the Spanish. A soldier on Cortés' expedition considered it,

> the most healthful and most nutritious aliment known to all the world; for one who takes a cup of it, though he may make a long journey, can pass all day without taking another thing, and being of cold nature, it is better in hot weather than in cold. [64]

Indeed, José de Acosta questioned whether the Spanish did not come to value chocolate more than the Indians themselves stating that "the Indians, and the Spanish, more so the Spanish...would die to have some of the black chocolate," although he also mentioned that it was an acquired taste not shared by all.[65] Although reports of chocolate clearly stated the perceived health benefits – from fleeting mentions by Antonio de Ciudad Real who proclaimed it a "healthy and medicinal" drink,[66] and Acosta who stated it was "good for the chest and stomach and against catarrh,"[67] to more in depth analysis by Hernández who said it was "commonly administered to the seriously ill, to mitigate heat, just as it is also given to those suffering from a hot disorder of the liver or any other part" – it

[62] Varey, *Mexican treasury,* 111.
[63] Varey, *Mexican treasury,* 111-113.
[64] Estes, "European reception of first drugs," 10.
[65] The original reads, "los indios, y los Españoles, y mas los Españoles...se mueren por el negro chocolate," in Acosta, *Historia Natural,* book IV chap. XXII
[66] Ciudad Real, *Tratado curioso,* 295-6.
[67] Acosta, *Historia Natural,* Book IV chap. XXII

seems it was enjoyed primarily by the Spanish as a "very pleasant drink."[68] This appears to have been particularly true of colonial Spanish women, whom Farfán derides for their love of chocolate which leads them to drink it in such great quantities that it leads to "retention of the menses."[69]

Alongside such benign, if not gluttonous, enjoyment, chocolate also frequently appears in Inquisition documents. Sometimes such appearances reveal evidence of the simple consumption of chocolate, such as Gerónimo de Vergaza's testimony that in 1594 "finding myself single and...in conversation with a group of women in Isabel Duarte's house, where they produced *tecomates* (gourd cups) of cacao or chocolate, I drank a few spoonfuls...." However, in other cases chocolate appears in the Inquisition documents in a more ritualistic context, often mixed with menstrual blood for use in sympathetic love magic. Indeed, this was revealed to be the case with poor Gerónimo de Vergaza's innocently drunk cup.[70]

In this way, alongside its adoption as a simple foodstuff, and occasional medicine, it seems that chocolate also came to hold symbolic significance for the Spanish colonisers. Such symbolic significance was certainly true for the Aztec, who used chocolate in a ritual context to act as an intermediary between supernatural elements (in much the same way as they used tobacco).[71] It is important to consider, however, that the Spanish adoption of chocolate for mystical rituals saw its primary function change from that of Aztec times which would have eventually resulted in a shift of chocolate's symbolism.

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[68] Varey, *Mexican treasury*, 107-8.
[69] Jarcho, "Medicine in sixteenth-century New Spain," 437.
[70] AGN Inquisición vol. 278 exp. 4 'Testificaciónes contra Fabian de Oviedo y contra Isabel Duarte, por hechiceros,' Michoacán, 1614.
[71] See Ortiz de Montellano, *Aztec medicine,* 141, 148-156, 187-188.

Much of the archival evidence for drug and plant use and exchange comes, not surprisingly, from the Inquisition records. While undoubtedly useful sources of information, particularly regarding superstitious and pagan use of herbs, one frustrating drawback of this source is that the plants themselves are often not named. Notable exceptions are *peyote* and *ololiuhqui*, which, certainly in the case of *peyote*, appears with increasing frequency in the Inquisition records.[72] Listed by Sahagún among eleven "herbs which perturb one, madden one,"[73] *peyote* was officially prohibited by the Spanish in 1620, not least in response to the excessive use by the Spanish who had by this time, a century of experimentation with it behind them.[74] There are suggestions that in order for *peyote* to 'work' the consumer needs proper tribal understanding of the drug, which would not have been achieved by the non-Indians until the nineteenth century.[75] This is perhaps reflected in the fact that in the earliest days the taking of *peyote* by the Spanish was conducted at arm's length – with them employing indigenous or *casta* people to take it on their behalf, very often in order to divine, find lost goods, or look into the future. With time, however, they began to take it for themselves.[76] No doubt the Spanish were not 'understanding' or 'using' *peyote* in the way the Aztec

[72] Although it is worth noting that *peyote* has historically been used as a term for many hallucinogenic plants and it is not clear whether references in the sources are refering specifically to lophophora williamsii or more generally to narcotics of this type, nor do the sources lend themselves to answer, see J. S. Slotkin, 'Peyotism, 1521-1891' in *American Anthropologist* vol. 57 (1955): 202-4.

[73] Sahagún, *Florentine Codex*, Book XI, chap. VII, 129.

[74] AGN Inquisición vol. 333 exp. 35 'Edicto del Santo Oficio contra el uso del *peyote*,' Mexico, 16 June 1620. There is an ambiguity with this document which specifies that "ninguna persona...pueda usar...de la dicha yerba del *peyote*...para los dichos efectos" (nobody can use the said *peyote* herb for the named effects) but it does not clarify if it can be used to other ends.

[75] Slotkin, *Peyotism*, 208.

[76] AGN Inquisición vol. 293 exp.70 'Testificación contra Isabel Zuñiga por tomar medicinas para adivinar,' Manila, 1617 (although it relates back to this Creole woman's time in Mexico City 23 years before). Isabel Zuñiga is advised to take *peyote* by a *mulata* for her illness and again later to improve the state of her relationship with her husband. AGN Inquisición vol. 278 exp. 13 'Nombramientos hechos por Fray Diego De Muñoz de honesta persona, para notario,' Querétaro, 1614. This document states that a few Spanish take *peyote*, but on the whole "son indios los actores, los españoles se aprovechan dellos" ("Indians are the actors and the Spanish benefit from

intended, but they were, nevertheless, getting enough from it to continue using it. In this way, exactly as with chocolate, the Spanish began to claim elements from the sacred and mystical world of the Aztec on their own terms. Indeed, *peyote* and other hallucinogens came to replace mystical plants, such as mandragora, that had been taken for similar purposes on the Spanish mainland.[77]

However, while *peyote* and *ololiuhqui* are normally understood as hallucinogenic drugs used for magical purposes, and this is certainly the most common context in which they appear in the archival record and why they were prohibited, the health benefits of such hallucinogens were also discussed. Alongside the mystical attributes, the Aztec attributed *peyote* with great healing powers,[78] and Ruiz de Alarcón says of *ololiuhqui* that "they [Indians] attribute to it power against every illness, and they believe that beyond healing, it will reveal to them the cause of the illness."[79] In both cases Sahagún noted the magical and medicinal benefits that were reported; thus while *peyote* "harms one, troubles one, makes one besotted," it is also recorded as a fever medicine when "it is drunk moderately, just a little;" and *ololiuhqui* "deranges one, maddens one, makes one possessed" but "for gout, it is only spread on the surface." [80] Although, even prior to the prohibition, the Spanish physicians dare not use these drugs because of their associations with magic and superstition, neither were the healthful aspects of these drugs absent from Spanish investigation.

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them"). AGN Inquisición vol. 360 exp. 15 'Testificación contra María de Escaguirre, por hechizos,' Mexico 1627 is a case involving Spaniards taking *peyote* for themselves.

[77] Alberro, *Gachupín*, 127-133.

[78] Indeed, in the treatment of 'aquatic fever' the ingestion of *peyote* served three simultaneous functions: As emetics, to eliminate phlegm; symbolically as 'hot' substances to counteract a 'cold' disease; and as hallucinogens providing a pathway to the gods, the ultimate cause of the disease. See, Ortiz de Montellano, *Aztec medicine*, 158.

[79] Coe and Whittaker, *Aztec Sorcerers*, 285.

[80] Sahagún, *Florentine Codex*, Book XI, chap. VII, 129, 147.

Francisco Hernández, for example, was quick to distance himself from any supernatural elements of *ololiuhqui*, remarking that medicinal uses were restricted to the seed since eating other parts would excite the sexual appetite or "induce delirium," but nevertheless pronounced it a useful remedy against the French disease (syphilis) and good for broken bones. [81] Similarly, with *peyote*, while revealing that, on the one hand, "marvelous things concerning this plant are recounted (if one is to believe what is widely held about this plant) and what they say is that those who eat it can have presentiments about what will happen and they are able to foretell the future," also noted that if pounded and applied it was "said to cure pains of the joints."[82] José de Acosta, in denigrating the "abominable bitumen" used by Mexican priests, had to concede that it nevertheless appeared to provide relief, which he attributed to the inclusion of tobacco and *ololiuhqui* in the unguent which "have great virtues to dull pain."[83]

Although, as already established, many of the Spanish who took *peyote* and related drugs were, probably doing so precisely for their mystical capacities, reports of the health benefits of the drugs may also have served to confuse the wider population regarding its legitimacy. Such ambiguity can be seen, for example, when in 1614 and again in 1621 (even after the prohibition was in place) questions were raised, including by a priest, over the validity of using *peyote* as an asthma medicine.[84] Indeed, an Inquisition case from later in the colonial period

[81] Varey, *Mexican treasury*, 203.
[82] Varey, *Mexican treasury*, 259.
[83] The original reads, "afirman que sentían con ella notable alívio, y debían de ser porque el tabaco y el *ololiuhqui* tienen gran virtud de amortiguar y, aplicado por via de emplasto, amortigua las carnes," in Acosta, *Historia Natural*, Book V, chap. XXVI.
[84] AGN Inquisición vol. 278 exp. 13 'Nombramientos hechos por Fray Diego De Muñoz de honesta persona, para notario,' Querétaro, 1614, in which Fray Diego states that "the *peyote* root, taken as a medicine (it reportedly works against asthma and other illnesses) does not have the same effects of sensory deprivation or seeing visions as when it is taken in other ways. AGN

clearly shows a *curandero* curing a Spaniard with *peyote*, along with other indigenous herbs and Christian encantation.[85] Further confusion may have arisen from the fact that on the eve of conquest it was legitimate in Spain to use herbs in certain circumstances against enchantment, for example the use of sage to correct bad humours moved by the devil.[86]

Maguey appears to have presented a similar dilemma. As already discussed, the benefits of this plant were recognised by various Spanish pracitioners. It also features in the *Recopilación de las leyes de Indias*, where the plant, and its product, *pulque*, are discussed in some detail. Here, although it was acknowledged that the maguey plant is "of much benefit to different conditions," it also stressed that if taken as pulque it is dangerous, "noxious to spiritual and temporal health," but that irrespective of this "Indians and Spaniards use it." The *Relación de Ytztepexic* similarly denounced the dangers of *pulque*, while acknowledging the benefits of "pure maguey honey."[87] In response to such anxieties, the *Recopilación de leyes de las Indias* ordered, insisting the the viceroys paid special attention to this law, that,

> no other type of root or ingredient can be added to simple maguey juice to render it stronger, hotter or spicier, nor can it be mixed, distilled or infused or processed in any other way to produce these results, even if it is claimed that such processes preserve the drink from ruin and corruption.[88]

Inquisición vol. 486 exp. 77 'Consulta sobre si se puede tomar la raiz del *peyote* como medicina,' Michoacán, 1621 sees Fray Martin de Vergana asking the Inquisition, on behalf of Indians, if there is any way that *peyote* can continue to be taken as a medicine without being considered sinful.

[85] AGN Inquisición vol. 371 exp. 6 fols. 276-282 'El fiscal de Santo Oficio contra un mulato llamado Lázaro, esclavo que fue el contador Felip Navarro y ahora es libre por curandero y arte del demonio,' Guanajuato, 1684.

[86] Aguirre Beltrán, *Medicina y magia*, 37.

[87] *Relación de Ytztepexic*, Paso y Troncoso, *Papeles de Nueva España*, vol. IV, 13-14.

[88] The original reads, "el jugo simple, y nativo del maguey no se pueda echar ningun genero de raiz, ni otro ningun ingrediente, que le haga mas fuerte, calido y picante, assi por inmixtion, destilación, ó infusion, como por otra qualquiera forma, que cause estos ó semejantes efectos, aunque sea á titulo de preservarla de destemplaça, ó corrupción," *Recopilación de leyes de los reynos de las Indias*, Libro VI, Titulo I, Ley XXXVII. Alberro, *Gachupín*, 81-85, also notes that

As previously mentioned, Inquisition documents rarely mention the names of herbs and drugs being taken and exchanged (with some notable exceptions such as *peyote* and *ololiuhqui* discussed above). Nevertheless, their appearance can still be used to explore the exchange of products occurring between different members of colonial society, not least since they are amongst the earliest evidence emanating from the New World. Several early Inquisition cases mention the exchange of unnamed *polvos* (powders) between people from a variety of ethnic backgrounds, including Spaniards. In the 1536 in the witchcraft case against Marta, the slave of Pedro Pérez (among other cases), an Indian named Anton Martín gave Ana Pérez and "another Castillian woman," some powders to give to her friends for love spells. Similarly, in the 1537 Inquisition case against María de Barzena, wife of Medina the tailor, Juana Pérez denounced her on the grounds that three years ago María de Barzena had come to her house and, having told her she was having problems with her husband, proclaimed she would use "powders and roots" under her pillow provided by an Indian from Texcoco. Although in such cases the powders and roots being provided are often intended for magical purposes, like love spells, rather than as medicine, such cases attest to an early willingness by Spaniards, particularly women, to integrate with Indians and procure and ingest their products.[89]

One final reason worth considering for the ready adoption of indigenous remedies by Spaniards in the New World would have been the sheer desperation produced

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the Spanish not only consumed pulque but they appear to have produced it too. 36 pulquerías were allowed in the city, 24 for men and 12 for women, which she says functioned as a kind of "permanent laboratory of syncretism."

[89] See AGN Inquisición vol. 38 exp. 2 fols. 50-112 'Proceso contra Marta, esclava de Pedro Pérez, y contra la moralla, partera, y María de Espinosa e María, esclava del maestro Diego, e Margarita Pérez y Anton Indio, por hechicerias,' Mexico, 1536; and AGN Inquisición vol. 38 exp. 5 fols. 143-147 'Proceso contra María de Barçena, por hechicerias,' Mexico, 1537.

by the new colonial context where they found themselves far from home and confronted with virulent new diseases like syphilis (along with old epidemics such as smallpox and measles). This situation, combined with notions that God put plants where diseases came from, and coupled with the obstacles of cost and availability already mentioned, would have provided a powerful incentive to try the new plants and remedies to hand. Indeed, most of the remedies that garnered widespread acclaim, in Spain too, such as sarsaparilla, guaiacum and even balsam were considered useful in some capacity against the new disease syphilis. The idea that such desperation may have driven patient behaviour is hinted at by Pedro Arias de Benavides' comment:

> I have seen few patients radically cured [with sarsaparilla] in Spain, but in the Indies many, because the doctors are better obeyed by the sick in these lands, as there are so many sources of this disease that it is easier to believe what the doctors say.[90]

It is also Arias de Benavides who, learning of the Castilian women's use of the gum of tecamahaca in their belly buttons and wanting to understand how they have learned such an application reported that "necessity is a great teacher...as the Spanish are far from towns and without doctors they find the best remedies they can to cure themselves."[91] This sense of desperation is perhaps best engendered by Hernández who concluded his prescription for dysentery with the words,

[90] The original reads, "porque radicalmente curadas pocas he visto en España [with zarzaparilla], en las Indias si, porque son lo medicos mas obedecidos de los enfermos en estas partes, la causa es que como alla hay tantas fuentes de esta enfermedad, no se les hace duro de creerlo," Arias de Benavides, *Secretos de cirugía*, chap. 44, 82.

[91] Arias de Benavides, *Secretos de cirugía*, chap. 14, 47-8, reports that the women put tecamahaca gum in their belly buttons when they have women's troubles and also if they continue to menstruate during pregnancy, then when asked where and who they learnt this from the answer in the original reads: "Alguno preguntará que quién les ha ensenado a las mujeres de Castilla, las virtudes y propriedades de esta goma, y digo que la necesidad es gran maestra y la habilidad de los que van de estas partes a las Indias, y procuran hacer experienceias de estas cosas hácese clara haber ido de acá, y han sabido sacar la plata y refinarla y sacarla con azogue, los que los indios no sabían, sino que los quilates o ley que salían la gastaban. Todo lo han puesto los Españoles en perfección y aunque los indios tenían estas drogas, no se aprovechaban de ellas y también como están los Españoles lejos de poblados y sin médicos buscan los mejores remedios que pueden haber por curarse."

"almost nobody, with such a shortage of remedies and a lack of doctors, not to mention a lack of food, stopped trying anything that came to hand." [92]

It is important to remember that, despite the willing acceptance of these indigenous remedies by many, and obvious problems associated with European drugs, the latter continued to be shipped, used and consumed in Mexico by the Spanish colonisers throughout the colonial period, particularly in formal establishments such as hospitals and jails. Drug inventories from hospitals, pharmacies and prisons continue to show a clear preponderence, if not exclusivity of European remedies, as examined in the Chapter 4. For many, the preference for Spanish drugs would not have dissipated, despite the obvious merits of the new pharmacopoeia. Personal preference coupled with the fact that often neither drug would have been particularly effective in combatting any said disease often saw a continuation of both. Even Cortés, so vocal on the merits of local products in the earliest days arranged for his father to send Spanish pharmacy goods which would be topped up with with native elements in the hospital; as previously mentioned, all of the medicines held by Cortés' own apothecary were also European.[93]

This tendency to combine is exemplified by Hernández who, in his description of how people try and combat dysentery comments that some people use "the juice of sour pomegranate with rose flower water, rose honey dashed with plantain, alum and 'egyptian ointment,'" while others "set great store by cooked atochietl or the root of a plant known as quauhayoachitl," or "chopped chilis and atole," and others still "to the great detriment of the sufferers washed their bodies with

[92] Varey, *Mexican treasury*, 84.
[93] Somolinos d'Ardois, *Fenómeno de fusión cultural*, 157.

cold water and rubbed their foreheads with the juice of cooked coatli, also [drinking] the juice of iztacpatli." [94] In Hernández's own prescription for the persistence of *cocolixtli* symptoms following the 1576 epidemic he suggests putting unguents on the body, drinking barley broth, pith of celeriac, root of cococtlacotl chipuoac and atochietl.[95] His remedy for healing wounds, fresh and old, saw the mixing of *hoitzilochitl* (balsam of the Indies) – "very much like Syrian balsam and...not a whit inferior in aroma and virtues" – beaten into eggwhites.[96]

Similarly, while Agustín Farfán often recommends Spanish remedies in the first instance, finding New World alternatives in their absence in the second, he also advocates the mixing of products on many occasions, such as "cañafistula with a little ground aniseed" for stomach problems, or "cañafistula pulp with rhubarb infused in endive water" for headaches.[97]

Indigenous reception of Spanish medicines

While earliest reports suggest a willingness amongst Indians to be treated by the Spanish, such as Bernal Díaz del Castillo's report that, "when our Tlascalan allies saw the soldier Catalan curing us by making the sign of the cross over our wounds and broken heads, they went to him; and there were so many of them that he could hardly attend to them in a day,"[98] in general it seems that Indians were somewhat reluctant to participate in the imposed medical system, as discussed previously. Reports suggest that quickly, where possible, Indians avoided treatment in

[94] Varey, *Mexican treasury,* 84.
[95] Varey, *Mexican treasury,* 83-4.
[96] Varey, *Mexican treasury,* 119.
[97] Farfán, *Tractado breve,* 5, 125.
[98] Díaz del Castillo, *Memoirs,* 365.

hospitals (as did the Spanish) or at the hands of Spanish doctors and surgeons.[99] Inevitably, in avoiding such formal outlets for Spanish medicine the indigenous exposure to the formal manifestations, and concoctions, of Spanish medicine would have been dramatically reduced. But was such reluctance absolute or were there ways and occasions in which the indigenous populations of Mexico were exposed and receptive to, if not the formal application of Spanish medicines, then the new products themselves, on other terms?

Much of the early archival evidence, primarily Inquisition cases, shows indigenous people continuing to use an entirely local array of produce, particularly in rituals devoted to the sacred domain. This is seen, for example, when a man called Lorenzo Suárez describes a priests' initiation ritual in 1536 involving "many Indians...and maguey, copal, idols, feathers and a plant called yantle and incense burners and jugs of pulque and food and cacao."[100] Nevertheless, in the same year in a different case, the lapidary Juan Franco reportedly tells Francisco Vázquez that he gave "some chickens to Indians to sacrifice for spells to know if a turquoise mine that he was using was any good."[101] Although these chickens are not being used towards a medical end, and are not even being used by the Indians towards their own goals but towards those of Juan Franco, their ready employment by the Indians at such an early date demonstrates both a willingness and ability to incorporate new Spanish products,

[99] See again Arias de Benavides, *Secretos de cirugía*, chap. 23, 60, who comments that they were 'enegmísima' of these professions.
[100] The original reads, "muchos indios...y maguey y copal...y ydolos y plumas y yerba que se llama yantle y sahumerias y encesarios todos puestos y cantaros de pulque y comida y cacao y otros generos de cacao..."in AGN Inquisición vol. 37 exp. 1. fols. 1-10 'Proceso contra Tacatle y Tacuxtetl, Indios que bautizados se llamaron Alonso y Antonio respectivamente, por idolatras y sacrificadores segun su modo y rito gentilico,' Mexico, 1536.
[101] AGN Inquisición vol. 38 exp. 1 fols. 1-45 'Proceso contra Juan Franco, lapidario, por hechicerias: porque hazia una india suya que echaze suertes para saber cosas del futuro,' Mexico, 1536.

not least into the sacred domain where medicine was, for the Aztec, firmly positioned. While this does not in itself constitute evidence for medical assimilation, it certainly demonstrates an environment in which the Indians were not entirely unreceptive to new elements; a response which would have probably been decided according to whether any new value was perceived in the new goods.

Chickens and their eggs appear to have been regularly used by Indians from early on and throughout the early colonial period. The archival record shows time and again the adoption of chickens in magical rituals and sacrifices alongside sources such as Ruiz de Alarcón's *Treatise on superstitions* which describes a 'superstitious cure for the eyes' in which, after saying a spell, splashing cold water and anointing the eyelids with tobacco, the witch, "puts in his eyes blood from the quills of recently plucked chicken feathers."[102] Eggs also feature in indigenous medical recipes in the *Codex Badianus* written only thirty years after the conquest; numerous times eggs – as whites, yolks and whole – are combined with indigenous plants and incorporated into complex remedies for a range of ailments ranging from "boils" to "festering gums" and "bloody saliva," among many others.[103] Other European plants and products are also featured in the *Codex Badianus* in remedies that include onions, honey, laurel leaves, frankincense and almonds. While at times the remedies are simple such as the "tolohua leaves crushed in the yolk of an egg" prescribed for glandular or spongy swellings,[104] others are more complicated mixtures, such as the "leaves of the herb tlacomatl, leaves of the xa-xacotl, almonds, laurel, almond husks, pine bark, the

[102] Coe and Whittaker, *Aztec sorcerers*, 234-6.
[103] See Gates, *Aztec herbal*, 8, 12-13, 16, 27, 42, 57.
[104] Gates, *Aztec herbal*, 42.

quetzal-ylin, the capul-xihuitl and alectorium, deer's horn burned to ashes, greens and grain ground up in hot water...taken into the rear parts by injection," which was prescribed for dysentery.[105]

It is important to be aware, as previously mentioned, that one criticism regularly levelled at the *Codex Badianus* is that it is a corrupted source and thus not purely indigenous. This is most certainly true; not only does it follow the rules of traditional European medicine of the time, with each chapter focusing on illnesses within different parts of the body, moving from the head to the feet, but there are clear examples of contamination, such as the inclusion of the term 'dragon's blood' which is what the Europeans called the East Indian palm.[106] Such corruption is perhaps unsurprising in a document that William Gates suggests was aimed explicity at "commending the Indians to the Crown," where it would have been considered wise to demonstrate European knowledge.[107] Nor, however, does such corruption detract from the value of this document, particularly through its representation of elements from both Aztec and Spanish medicine, indicative of an indigenous culture in transition.[108]

Particularly pertinent to the study at hand, the nature of the Spanish medicinal inclusions in the *Codex Badianus* demonstrate a degree of knowledge that suggests experimentation and preference. The mixing of products is, at times, very complex. Furthermore, the fact that some of the remedies in the book are simple and consist solely of indigenous plants while others are complex recipes mixing

[105] Gates, *Aztec herbal,* 53.
[106] Estes, "European reception of first drugs," 5. Such mention can be found, for example, in the Badianus cure for haemmorrhoids in the 9th chapter, see Gates, *Aztec herbal,* 77.
[107] Gates, *Aztec herbal,* 2.
[108] Millie Gimmel, "Hacia una reconsideración del Codice de la Cruz Badianus," *Colonial Latin American Review* 17(2008): 273-284.

indigenous plants with Spanish elements suggest that any such inclusion of Spanish elements occurred precisely because the authors felt them to be beneficial additions.

The *Codex Badianus* is, however, an anomaly, written in somewhat rarified circumstances and towards a very particular end and is not, therefore, representative of any such receptiveness within the wider indigenous population. While such indications are few they do exist, such as José de Acosta's assertion that garlic was highly valued by the Indians:

> of all European roots, it is garlic that the Indians most esteem, and they hold it to be of great importance, and they are not wrong as it wraps up and warms the stomach; according to the Indians they eat it in abundance with gusto, raw as it is when it comes out of the ground.[109]

In this particular case, however, it is worth noting that the medical benefits of garlic are Acosta's own opinion and there is nothing to imply that the Indian adoption of garlic was as anything more than a foodstuff which was willingly assimilated as there was no equivalent in the Americas.

A more direct example of the adoption of a Spanish plant for medicinal purposes can be seen in Pedro Arias de Benavides' extensive reference to the assimilation of cardinal lilies into Indian curing practices, which is supported by an entry from the *Relación de Tequizistlan*, which mentions the use of lilies along with nettles.[110] Arias de Benavides informs the reader of the various ways in which lilies were used medicinally by the Indians: firstly he reported that they are turned

[109] The original reads, "de las raíces de Europa el ajo estiman sobre todo los indios, y le tienen por cosa de gran importancia, y no les falta razón porque les abriga y calienta el estómago; según ellos le comen de buena gana y asaz, así crudo como le echa la tierra," Acosta, *Historia Natural* book IV chap. XVIII.

[110] *Relación de Tequizistlan*, in Paso y Troncoso, *Papeles de Nueva España*, vol. VI, 229.

into a flour and added to water, maize flour, chicken fat and maguey honey, which is then given as a purgative. The next method involved grating it before frying it with chicken fat and coagulating it with black wax in order to spread on the stomach. The final method involved the same mixture as the last but, rather than spreading it on the stomach this mixture was then put in sugar cane stems with some of their liquid drained, which was then put up the anus (*sieso*) with great results. He also noted that, "with this same cure I have seen many hydropics [hidrópicos] cured, although the disease was not confirmed." Arias de Benavides further informs the reader that this latter cure was held in great secret by an Indian from Cuernavaca[111] who was paid by his patients for such cures "as if he were a famous physician," and that he only learned of it from the said Indian doctor's daughter. Having tested the application of the said unguent himself to great effect, Arias de Benavides went on to cure regularly with it himself.[112]

Pedro de Arias de Benavides' description of the use of lilies by Indians is of particular interest because of the extreme detail that he divulges. The fact that there were various recipes and methods of application in circulation, including ones that mixed the lilies with other Spanish products, such as chicken fat, suggests that a great degree of experimentation had been undertaken in order to arrive at such strange and specific concoctions. Some of the recipes also attest to a fusion with indigenous products, such as the mixing of lilies with maguey honey.

Research by Bernard Ortiz de Montellano has suggested that, with time, two other European herbs, rue and rosemary, were adopted by the Indians as substitutes for

[111] Indeed, Arias de Benavides, *Secretos de cirugía,* 60, reports that the Indian from which this cure came is the very same famously said to have cured Don Antonio de Mendoza after the attempts and failures of spanish doctors.
[112] Arias de Benavides, *Secretos de cirugía,* chap. 23, 59-60.

yauhtli and iztauhyatl. Within humoral terms the exchange was probably facilitated because the native species were considered hot and used against 'cold' diseases by the Aztec, which was also true of the European species, classified as hot in Galenic terms. Ortiz de Montellano's research suggests that the gradual substitution of these plants can be seen in the increasingly overlapping use of rue or rosemary and yauhtli or iztauhyatl in colonial medicine. He further suggests that the substitution may have resulted from either an indigenous desire to disguise rituals associated with Tlaloc or from the unavailability of native species as folk medicine spread towards northern Mexico, encompassing the ecosystems there where the plant species were distinct from those in the central region. Such a move would have formed part of a syncretism that saw superstitious healing practices and plants disguised with Christian elements, in a bid to avoid prosecution. In this way the use of hallucinogens was hidden by assigning them names from Christian hagiology; thus *peyote* became 'Mary's rose, '*ololiuhqui* 'Our Lord' and yauhtli 'St Mary's herb,' enabling old remedies to continue being used with less danger of detection.[113]

José de Acosta asserted that in the exchange of plant products, the Indians fared better than the Spanish, not least because Spanish plants flourished in the New World, providing a long list of fruits and vegetables, not to mention flowers, such as roses, that were successfully introduced.[114] Irrespective of the successful transfer of European plants into the New World, and despite the fact that evidence

[113] Ortiz de Montellano, *Aztec medicine,* 203-209. Aguirre Beltrán, *Medicina y magia*, 141, reports that *peyote* also became known as 'niño Jesus.'

[114] Acosta, *Historia natural*, book IV, chap. XXXI, mentions wheat, barley, lettuce, cabbage, radishes, onions, garlic, parsley, turnips, aubergines, spinach, endives, chard, chick peas, broad beans, lentils, orange and lemon trees, peaches, plums, apricots, cherries, figs, pomegranate and almonds. He also says the Indians love flowers introduced by the Spanish, not least roses, in *Historia Natural* book IV, chap. XXVII.

considered above demonstrates that there was certainly an early willingness regarding certain products, direct evidence for the adoption and application of Spanish medicinal products by the Indians is relatively scarce. It is possible to speculate that their general reluctance to participate in the new imposed manifestations of Spanish medicine may have resulted in relatively minimal assimilation of Spanish products, certainly during the early colonial period.

Perhaps the same factors that encouraged the Spanish to try the new Mexican remedies would have served to discourage the Aztec from abandoning them, not least because of the cost and poor quality of imported Spanish medicines. Furthermore, the assimilation of indigenous products by the Spanish would have facilitated the continued use of such products. Some European plants were adopted, not least sage and mandragora. The idea, however, that "the medicine of *curanderos* came almost exclusively from the indigenous pharmacopoeia," because it was cheaper and more available, and because it was invested with mystical qualities, coupled with the fact that the medical role carved out for the majority of indigenous practitioners and place for patients was precisely in this domain, may have retarded indigenous assimilation of Spanish products.[115] Where examples do exist of it occurring, it appears that the Indians mixed old and new remedies together.

Black reception of medicines in Mexico

This study has already explored avenues by which Blacks and Mulattoes in the New World would have been exposed to European medicines, particularly

[115] Aguirre Beltrán, *Medicina y magia*, 113.

through treatments decided upon by their masters, who often opted for treatments at the hands of Spanish doctors and surgeons. Such exposure would have been further augmented by the medicines administered in the various hospitals and jails in which they found themselves in the early colonial period. It is also known that alongside such evidence of the provision of European *botica* goods Blacks were also administered some New World products by their masters, as attested by Oviedo's reference to the "excellent virtues" of tobacco which he claims to have administered and cured Indian and Black slaves of his with.[116] Indeed, in the case of tobacco, Monardes reports that the Blacks were more than willing participants:

> The blacke people that hath gone from these partes to the Indias, hath taken the same maner and use of the tabaco, that the Indians hath, for when thei see theimselves wearie, thei take it at the nose and mouthe, and it dooeth happen unto theim, as unto our Indians, liying as though thei were dedde three or fower howers: and after thei doe remaine lightened, without any wearinesse, for to laboure againe: and thei dooe this with so greate pleasure, that although thei bee not wearie, yet thei are very desirous for to dooe it: and the thyng is come to so much effecte, that their maisters doeth chasten theim for it, and doe burne the tobaco, because thei should not use it, wherupon thei goe to the desartes, and secrete places to dooe it, because thei maie not be permitted, to drinke them selves drunke with winem, and therefore, thei are gladde to make them selves drunken witht he smoke of tobaco: I have seen them dooe.[117]

Alongside this evidence is the fact that archival records regularly show Blacks' and Mulattoes' active involvement in the unlicensed world of the *curandero*, as both intermediaries and practitioners. In this domain treatments appear to have predominantly involved supernatural elements and, in the vast majority of cases, indigenous products. Within this there are numerous examples, particularly in the

[116] Oviedo y Valdés, *Historia general*, part I, book XI, chap. V.
[117] Monardes, *Joyfull newes*, part 2, 88.

early part of the seventeenth century of Blacks taking indigenous drugs, most commonly *peyote*.[118]

Blacks arriving in the New World were in a unique position, distinct from that of either the Indians or Spaniards; their arrival, stripped of all former trappings of their culture and without recourse to fall back on any products from their own pharmacopoeia, forced them to respond to both the indigenous and Spanish products. The unenviable position that slaves in the New World found themselves in, however, meant that the products were either forced upon them by their masters or came as the result of a lack of alternatives. Despite these restrictions which, to a large degree, dictated the direction medical treatment of Blacks in the New World took, this section hopes to elucidate, through the use of two archival case studies, the fact that rather than simply being subjected to external forces, there was still space for Blacks in the New World to express preferences for indigenous or Spanish medicines.

The first case to consider, while a little outside the period under consideration here, is, nevertheless, significant enough to merit inclusion. Here the current study returns to the case of a slave called Miguel, property of the Sanctuary of Guadalupe, as recounted by Miguel Gerónimo de Valladolid, the *mayordomo* of the sanctuary. Upon falling ill Miguel was brought to Mexico City and the house of a priest called Francisco Pérez de Villanueva, where 33 pesos and 2 tomines was spent on treatments including a surgeon, medicines and food. With no signs of improvement, Miguel was moved for further treatment at the hands of doctor

[118] Seen, for example in AGN Inquisición vol. 342 exp. 10 'Testificación contra Juan Ramirez negro esclavo por haber tomado *peyote*,' Tepoxtlan, 1622, where Juan Ramirez takes *peyote* on an Indian's advice that it will help him discover things.

Anzures, the surgeon Manuel de Ortega and the *boticario* Joseph de Barrientos. Clearly Miguel's treatment came at great expense and effort. Alongside demands for payments to the formal practitioners and for the *botica* medicines used to treat Miguel, however, is a demand for reimbursement for sixteen pesos and 7 reales to Miguel's wife, for general sustenance and "other medicines that were not from the pharmacy."[119]

Although these non-pharmacy medicines are not described in any greater detail, this is, nevertheless, a fascinating inclusion; the juxtaposition of these medicines, described very particularly as not coming from the *botica* alongside *botica* medicines suggests that they were probably indigenous products. Not only is it interesting to see that Miguel's wife is to be reimbursed for the provision of these medicines, but their inclusion reveals the fact that active choices were being made and money spent by Miguel, and his wife, on products they decided would be good for his treatment. The decision to supplement Miguel's treatment further came in a context in which he was in receipt of expensive and lengthy formal treatment with European medicines. Unfortunately Miguel died.

The next case to consider is that of Barbola de Zamora, a Spanish-born Mulatta midwife working in the Zacatecas mines in 1565.[120] Accusations against her are that she was curing *mal de ojo* and using incantation and suspicious practices. Barbola confessed to the crime of curing cases of the evil eye and was effectively let off, being charged only with going to learn how to conduct proper baptisms

[119] The original reads "otras medicinas, que no eran de *botica*," AGN Bienes Nacionales vol. 457 exp.5 'El Bachiller Jeronomino de Valladolid, mayordomo de Nuestra Señora de Guadalupe, solicita que se concedan médico y medicinas a un esclavo suyo," Mexico, 1679.
[120] AGN Inquisición vol. 38 exp. 11 fols. 238-268 'Proceso contra Barbola de Zamora, por hechicera' Zacatecas, 1565.

and to promise never to cure *aojamiento* again. It is clear from the various testimonials that Barbola is well-respected and that, although she confessed to curing a few cases of *mal de ojo*, she was primarily engaged as a *partera* and healer, treating men, women and children, including Spaniards, of complaints ranging from "broken or dislocated arms and legs" to "catarrh." Barbola received some outstanding character references, which incomparably strengthened her defence, not least from a *boticario* called Andrés de Davo, from whom Barbola bought all of her products. The interesting thing about Barbola is that she appeared to cure exclusively with legitimate *botica* products, including rosemary, incense, oil, *pez* (pitch/tar) and *almáciga* (mastic) alongside other unnamed "pharmacy powders."[121] Here then is a case of *mulata* working as a *curandera* but doing so with the exclusive use of approved European *botica* goods.

While any wider extrapolation from these cases is, of course, impossible, they do serve to demonstrate that some Blacks in colonial Mexico had developed clear preferences for the types of products they trusted in medical treatment and were able to exert more agency and choice than perhaps is widely acknowledged. Furthermore, the Blacks in these cases are clearly making very different choices; one for *botica* goods in the environment of *curanderismo* and the other for non-*botica* goods within an expensive and lengthy formal treatment regime. In the case of Barbola it is important to bear in mind that if she had not been reported for conducting treatments to cure cases of *aojamiento* her case would never have come to light.

[121] Almáciga is an aromatic gum that comes from *Pistacia lentiscus* which is an evergreen tree of the pistachio family that grows in the Mediterranean region. It features in Dioscorides and its medicinal properties are considered to be for peptic ulcers and gastrointestinal complaints.

It is likely, however, that as was true of Spaniards and Indians, the Blacks in the New World would have quickly developed preferences for mixing products from both pharmacopoeias. As early as 1536 this can be seen in the case of the *morilla partera* who is reported to be using culantro (*Eryngium foetidum*), a plant indigenous to the Americas, along with wheat oil and rosemary.[122]

[122] AGN Inquisición vol. 38 exp. 2 fols. 50-112 'Proceso contra Marta, esclava de Pedro Pérez, y contra la moralla, partera, y María de Espinosa e María, esclava del maestro Diego, e Margarita Pérez y Anton Indio, por hechicerías,' Mexico, 1536.

Chapter 6

PRACTICES

It is widely held that the Spanish had very little interest in the native practice of medicine, a view informed, perhaps, by the fact that "outside the pharmacopoeia, explicit evidence of syncretism in terms of medical practice is conspicuously absent from the official documentation."[1] Instead, theories of the exchange of medical practice in Mexico have focused on the imposition of humoral medicine by the Spanish and its subsequent filtering down from the professional to the popular level during the course of the colonial period, such that by the end of the eighteenth century humoralism had become the "dominant way of understanding the body in nonreligious terms."[2] Irrespective of the eventual position humoralism was to hold in colonial medicine, such explanations obscure a reality which instead saw similarities between the different medical systems which facilitated fusion, including the reception of humoralism. This chapter aims to evaluate scope for assimilation between the various medical systems during the early colonial period and, where possible, to elucidate the reception of various practices by Spaniards, Africans and Indians.

Before beginning any analysis of practices it is worth briefly noting that very little is actually known about the practices of pre-conquest indigenous curers. Alongside what can be extracted from archival evidence, knowledge has predominantly been drawn from two sources: Bernardino de Sahagún's *Historia*

[1] De Vos, "Art of pharmacy," 47.
[2] Fields, *Pestilence and headcolds*, chap. 4 para. 9. This idea of a 'filtering down' of humoralism from professional to lay comes from Foster, *Hippocrates' Latin American legacy*, 153-157, where he believes it came via hospitals, popular *recetarios*, such as Agustín Farfán's and pharmacies.

general de las cosas de Nueva España and Hernando Ruiz de Alarcón's *Tratado de las supersticiones,* each of which comes with its own set of problems. In the first instance it is, of course, important to remain vigilant for source contamination when using any colonial source to elucidate a pre-colonial past. As noted in Chapter 1, because the emphasis of these two sources and aims of the research underpinning them were very different, so too are the pictures they draw of native medicine. Sahagún tends to de-emphasise connections made by the Indians between illness and religion or superstition, while Ruiz de Alarcón places most emphasis on the supernatural and idolatrous practices, at the expense of revealing more empirical methods. While both are unique sources of evidence for understanding Indian culture, such bias must be borne in mind. Close reading of either source, however, and particularly when read together reveals a fuller picture of Indian medicine, revealing a mixture of magic, superstition and empirical methodology.

Humoralism in Mexico

By the end of the late colonial period in Mexico, humoralism had managed to infiltrate Spanish popular medicine in a way that it had failed to do on the Spanish mainland.[3] Understanding that this was the situation by the end of the eighteenth century, however, begs for further analysis of how this process occurred, and by whom, particularly during the early colonial period, with which this study is concerned.

[3] Foster, *Hippocrates' Latin American legacy,* 150-151, highlights the fact that the hot-cold and wet-dry dimension never infiltrated Spanish popular medicine.

Sherry Fields' assessment is that the strength, of humoral medicine lay in the fact that it was accessible to everybody, as well as being credible and unfalsifiable. Not only could it be applied to explain most things but furthermore it leant itself to the conclusion that any errors encountered were the fault of the practitioner or patient and not the system. Furthermore it was based on ideas that concurred with those held by patients with no medical knowledge; illnesses do tend to occur at certain times of year, amongst certain age groups, in certain climates, etc. Finally it was simple enough for most people to understand and get involved in their own curing, thus "as a framework for conceptualizing how the body worked, humoralism's great advantage lay in its accessibility to the layman."[4] Furthermore, in the case of Mexico, ostensibly there were elements underpinning both the Aztec and the humoral medical models which would have facilitated understanding and, thus, assimilation. Hippocratic theory was not incompatible with the Aztec idea of a world composed of opposites that needed balancing; among them night and day, good and bad and, most pertinently, hot and cold.[5]

Humoralism and the hot-cold debate

While it is not possible within the context of this wider study to fully consider the argument surrounding the origins of hot and cold in Mexican popular medicine, it is, nevertheless, important to give it brief consideration, not least since it is tied in with the possibility of exchange between Spanish and Aztec practices. In brief George Foster, on one side of the argument, believes that notions of hot and cold in indigenous medicine are the result of their introduction by the Spanish after the

[4] Fields, *Pestilence and headcolds*, chap. 4 para. 9-11.
[5] Claudia Madsen, *A study of change in Mexican folk medicine* (Tulane, New Orleans: Middle American Research Institute, 1965), 95-97.

conquest; thus that they are a humoral import. On the other side, Alfredo López Austin believes that the hot-cold element of popular indigenous medicine is a remnant of pre-conquest indigenous beliefs, reflecting the oppositions by which they worked. López Austin believes that if they were hot-cold humoral imports they would be accompanied by a wet-dry dimension, which is notably absent. He further uses the example of China, where hot and cold explanations exist in medicine despite the fact that there was no humoral influence.[6]

The fact that the hot-cold dichotomy is acknowledged to have existed in indigenous concepts by both sides means, however, that, for the purposes of the study at hand, it is not necessary to delve deeper into the argument of whether the hot-cold system observed in the later colonial period is an indigenous remnant or due to Spanish imposition. Even unresolved the parameters of the debate serve to highlight grounds on which ideas exchange could have been constructed – that there was a background of beliefs, in this instance hot and cold, which formed foundations on which concepts and practices could be understood and, eventually, shared. While this does not allow for conclusions regarding the imposition of humoralism, it does demonstrate an environment in which both sides would have been well placed to rationalise the medical systems of the other. Such a background would have formed an important backdrop to any exchange.

Alongside hot and cold, other similarities existed. Both systems were holistic, placing emphasis on the unity of the body and active role played between the mental and physical. Aztec and Spanish medicine both held beliefs about the need to rid the body of corruptions or disturbances. Finally, both used the practices of

[6] See Chapter 1 for background literature on the debate.

bleeding and purging to achieve this end (although there is some confusion in the sources over the extent to which Indians used bleeding prior to the arrival of the Spanish, which will be discussed below).[7] Within this, if the slave Juliana's prior diagnosis of "hot bones" in Angola serves as an indication, it seems that notions of heat also informed some African medical explanations.[8]

Humoralism and bleeding and purging

Within Spanish humoral doctrine, the removal of bodily fluids to release corrupted matter was fundamental and was achieved by, alongside the provocation of vomiting and/or sweating, bleeding and purging. Indeed, bleeding and purging were amongst the most recognised and adopted of all humoral practices, and references abound demonstrating their popularity, not just among the medical elite, but with the Spanish laymen too. Alonso López de Hinojoso's book on surgery, which was written for the layman, includes a section on bloodletting techniques because "it is of great benefit and great necessity in many towns, mines, and ranches, for the lack of doctors, surgeons, and barbers they have there."[9] Indeed, bleeding appears to have been so common that Vargas Machuca deemed it unnecessary to explain the process in his treatment for fevers and temperatures, stating that "everyone is already skilled, in the absence of doctors, in knowing how to bleed and make comfortable with the syrup that may be available or preparing and giving a purgative, that there is no need to dwell on

[7] Fields, *Pestilence and headcolds,* chap. 3 para. 26-31.
[8] AGN Bienes Nacionales vol. 79 exp. 18 'Doña Mencia de Ulloa viuda de esta ciudad contra el Bachiller Joseph Bustron de Chavarría, presbítero, vecino de las minas de Pachuca, sobre redhibitoria de una esclava' México, 1664
[9] López de Hinojosos, *Suma y recopilación de cirugía,* 77.

this."[10] Pedro Arias de Benavides further commented on the popularity of purging amongst the Spanish in his section on the application of the mechoacán root, stating that,

> In New Spain they purge abundantly; commoners believe that the value of this plant is in the quantity it purges, and it purges the contents of the intestines in an hour, leaving you neither better nor worse. They believe it to be marvellous because it purges in such great quantity.[11]

While evidence that colonial indigenous populations also practised bleeding and purging could be seen as further proof of the reach and influence of humoralism, it is important to bear in mind that it appears they were recognised practices amongst the pre-Conquest indigenous populations. Sahagún cited bleeding and purging among the duties of a good female physician and noted, in his treatments for headache, the prescription of bleeding in cases where herbs had not worked, when "the use of an obsidian point, of incising, of bleeding there [on the head] is necessary."[12]

Despite Sahagun's assertions, some of the *Relaciones geográficas,* however, such as those of Pochutla, Tonameca and Tepuztlan suggest that before the arrival of the Spanish the Indians knew nothing of bleeding and only cured with herbs.[13] While there may have been some exceptions such as these, however, it seems that bleeding was a recognised practice among Indians, but not in the forms popular in

[10] Vargas Machuca, *Indian milicia,* book 2, 65.
[11] The original reads, "en la Nueva Espana purgan en cantidad, piensan las gentes vulgares que todo el bien está en mucha cantidad que se purga y en el espacio de una hora purgan cuanto tenían en los intestinos que no quedaba bueno, ni malo. Piensan ellos como purgan en tanta calidad, que es cosa maravillosa," in Arias de Benavides, *Secretos de cirugía,* chap. 9, 41.
[12] Sahagún, *Florentine Codex,* Book X, chap. XXVIII, 140; and Book X, chap XIV, 53.
[13] *Relaciones de Pochutla, Tonameca and Tepuztlan* in Paso y Troncoso, *Papeles de Nueva España,* Vol IV, 239 (Pochutla), vol. IV, 243-4 (Tonameca), vol. VI, 245 (Tepuztlan). For brief view of some of the indigenous medical references in the *Relaciones* see also Lucio Leyva, coord., *Anáhuak tlapahtililli: la curandería en anáhuak* (México: Universidad Autónoma Metropolitana, Unidad Azcapotzalco, División de Ciencias Sociales y Humanidades, 1994).

Europe. Alonso López de Hinojosos notes, for example, that the use of leeches, common across the world, was unknown in this land.[14] Similarly, Francisco Hernández derided Indian doctors for "never cut[ting] anyone's veins."[15] Several of the *Relaciones geográficas* also note that before the conquest the Indians did not undertake bleedings from the arm but elsewhere. The *Relación de Coatepec* states, for example, that before the conquest Indians "did not use *sangrías* in their arms; rather they pierced the head, body, chest and stomach with a very sharp, thin bone or a snake's tooth;"[16] a point repeated in other *Relaciones* including those of Chimalhuacatoyac and Chicoaloapa.[17]

There is a sense from many of the *Relaciones* that the arrival of the Spanish, and subsequent decimation of the Indian populations left many communities without the herbal curers, knowledge and methods from before. The *Relación del Puerto de Guatulco* commented, for example, that "now there is nobody to cure them, because after the Christians came, they no longer had doctors or anybody to cure them as they used to have."[18] The *Relación de Tonameca* also noted that "they never did bleedings before but used herbal juices prepared by their doctors, but now there is nobody that knows of these things."[19] In many cases this appears to

[14] López de Hinojosos, *Suma y recopilación de cirugía,* 106.
[15] Varey, *Mexican treasury,* 77.
[16] The original reads, "en el dicho tiempo de su infidelidad de los naturales, en sus enfermedades, no usaban sangrías en los brazos: el remedio que hallaban era puncarse en la cabeza, e por el cuerpo y pechos, y viente, con un hueso delgado y muy agudo o con un colmillo de vibora que para este efecto tenían los indios que curaban, y con esto que hazían sanaban luego de cualquieres enfermedades," in *Relación de Coatepec,* in Paso y Troncoso, *Papeles de Nueva España,* vol. VI, 229.
[17] *Relaciones de Chimalhuacatoyac* and *Chicoaloapa,* in Paso y Troncoso, *Papeles de Nueva España,* vol. VI, 76, 85.
[18] The original reads, "por no aver quien los curase, porque despues de vinyeron los Christianos no tuvieron médicos ni quien los curase como antiguamente los solían tener," in *Relación del Puerto de Guatulco,* Paso y Troncoso, *Papeles de Nueva España,* vol. IV, 233.
[19] The original reads, "antiguamente jamás se sangravan sino que se curaban con zumo de yervas que los médicos que tenían les dava y aplicava por de fuera, y que ahora no hay quien conozca ni sepa de yervas," in *Relación de Tonameca,* Paso y Troncoso, *Papeles de Nueva España,* vol. IV, 244.

have propelled surviving Indians to try the new bleeding techniques, even if they were detrimental to their health, as a "weak and thin people without the strength to withstand them."[20]

With time, it seems that the Spanish bleeding methods did impact on the Indian practices. The *Relación de Tasco* from 1581 recounts this change, commenting that "in olden times they only pierced the head with a sharp object or viper's tooth, and now there are amongst the Indians some called *amantecas* [artisans] who cure with herb and root drinks and with *sangrías* in the arms."[21] Similarly, the *Relación de Texcaltitlan* states that "now they [the Indians] are accustomed to bleedings."[22] Although these methods appear to have been adopted by Indians, they also appear to have been mixed with indigenous elements; thus Ruiz de Alarcón commented, in his section entitled 'the spell and charm for bleeding' that "even though bleeding is not a sickness in the arms, but a remedy for other sicknesses, they [the Indians] use far more superstition in this than in the rest of the remedies. They make use of a long spell full of words no longer in use."[23]

Mention in the *Codex Badianus* of "bloody saliva," for which the various remedies proposed will "consume the noxious humour," while certainly evidence of source contamination, also clearly demonstrates an early understanding of humoral principles by the Indians, which they were able to apply within their medical descriptions.[24] Nevertheless, by 1570, when Hernández began writing his

[20] *Relación de Guatulco*, in Paso y Troncoso, *Papeles de Nueva España,* vol. IV, 250.
[21] The original reads, "curabanse antiguamente con solo puncarse en la cabeza con una nabaja aguda o con unos colmillos de vibora, y de presente hay entre ellos algunos indios e indias que llaman amantecas, que los curan con bebidas de yerbas y raices, y los sangran de los brazos," in *Relación de Tasco,* in Paso y Troncoso, *Papeles de Nueva España*, vol. VI 278-279.
[22] *Relación de Texcaltitlan*, in Paso y Troncoso, *Papeles de Nueva España,* vol. VII, 22.
[23] Coe and Whittaker, *Aztec sorcerers*, 252.
[24] Gates, *Aztec herbal*, 33.

encyclopaedia, he was constantly deriding the Indians for their lack of humoral knowledge and thus for the "artless" and "dangerous" application of their own remedies. He stated that "even when they have a marvellous array of healthful herbs to chose from, they do not know how to use them properly" going on to give examples of such incorrect applications: "they rub their patients bodies with very hot things, replying haughtily to anyone who would question them that heat is defeated by heat," and adds "neither do they know how to adapt a remedy to a humour that has to be removed."[25] By the time Ruiz de Alarcón was writing it is clear that the Indians had begun to incorporate humoral methods such as cupping into their practices, while continuing to use indigenous incantation.[26]

The reception of humoral medicine, certainly among the Indians, appears, therefore, to have been a gradual one undertaken over the course of the colonial period, and eventually securing it a place in popular medicine in Mexico, that it had been denied in popular mainland Spanish medicine.[27] Here in the popular domain Africans, Spaniards and Indians came together to slowly form a new brand of colonial medicine, combining preferences derived from their own experiences, including humoral elements. While bleeding and purging may not have come to the Indian populations through exposure to humoralism, for example, we know that in the case of slaves, traders' records show that there was a predominance of humoral treatment meted out to them, particularly bleeding and

[25] Varey, *Mexican treasury*, 77-78.
[26] Ruiz de Alarcón Chapter 9 is description of a complex bleeding with air evacuated from cup held against a patient's body by burning a small candle, blood drawn to surface by vacuum then cut out – is totally Hippocratic, see Coe and Whittaker, *Aztec Sorcerers*, 37.
[27] Hernández-Sáenz and Foster, "Curers and their cures," 42, suggest that this is because popular medicine was already entrenched and meeting patient expectations (if not actually curing!) by the time humoral medicine took hold in Spain. The new humoral elements could, if required, be acquired from trained official physicians.

purging.[28] The spread of humoralism amongst the Indians may also be attributed to the failure of indigenous medicine to deal with the onslaught of Old World diseases such as smallpox, undermining their confidence in their traditional medical system and forcing them to seek, in much the same way as the Spanish, new remedies for new diseases.[29]

Perhaps most significant would have been the influence of the religious orders. Not only were most medical treatises produced in Mexico during this period written by friars who reflected Hippocratic doctrines, but furthermore, they were directly involved in healthcare, particularly, as has already been shown, in hospitals.[30] In these ways Hippocratic elements were selected and moulded to fit the new cultural context, producing "a unique popular system, carried by both the *curandero* and the population at large."[31] This process was aided over the colonial period as *mestizo* populations expanded and facilitated the transfer of new medical ideas between racial groups.

It is finally worth mentioning one last result of humoralism's contact with the New World that emerged as a result of the professional application of humoral principles to the new circumstances; that fact of an emerging duality of diagnosis. The facility with which the flexibility of the humoral framework enabled *elite* Spanish doctors to understand and assimilate the newly encountered plants and animals of the New World has already been explored. However, despite the fact that Indian doctors were consulted regarding the properties of the new plants, in

[28] Newson and Minchin, *Capture to sale,* 263-269.
[29] Hernández-Sáenz and Foster, 'Curers and their cures', 42. See also Fields, *Pestilence and headcolds,* chap. 4 para. 1-3, 9-11; Madsen, *Change in Mexican folk medicine,* 95-97.
[30] Guerra, "Role of religion," 180-181.
[31] Hernández-Sáenz and Foster, "Curers and their cures," 44.

most cases professional doctors probably did not incorporate indigenous etiology into their humoral re-evaluations, since it conflicted with their worldview. Thus Spanish doctors redefined the terms in which a plant was understood to cure, despite the fact that they were often ultimately put to the same use. This saw, for example, the fact that a plant was seen to placate Tlaloc being overlooked, and re-rationalised according to the opposition of humours. In this way new structures and doctrines were superimposed onto American elements, creating a duality of treatment. This saw a situation in which the Indians and the Spanish effectively prescribed the same plant for the same disease, although the terms on which they understood the disease and the plant's effect were different. Again this no doubt led to further confusion about what was and was not acceptable. [32]

Empirical therapeutic practices

Outside of humoral medicine, it is worth noting that many other therapeutic practices employed by the Aztec and Spanish, and subsequently by *curanderos* were surprisingly similar, since it helps to better understand inter-racial patient receptivity to treatment (most commonly Spanish patients at the hands of indigenous *curanderos*). Sahagún reports that a *ticitl* (indigenous doctor) would be expected to provide splints, set bones, purge, give emetics, lance, make incisions, stitch people, treat gout and cut out tumours. [33] The range of skills described is no different from a list that would be expected of professional Spanish medical counterparts.

[32] Ortiz de Montellano, *Aztec medicine*, 203-5.
[33] Sahagún, *Florentine Codex*, Book X, chap. VIII, 30; chap. XIV, 53.

As examined in Chapter 3, throughout the early colonial period, *curanderos* can be found conducting a range of medical practices that would also have been carried out by their licensed contemporaries; from basic surgery, such as in the case of the *morilla partera* who "corto una lepra que tenía [Doña Marina] con un cuchillo" in 1536,[34] to the application of unguents, as seen in Isabel de Vera's application of an ointment to Beatríz de Vera's sore foot in 1562;[35] from the use of purges, as seen in the case of the *morisca* Anna María who applies purges to Gabriel de la Concepción [36] and poultices, such as that used by Barbola de Zamora to treat catarrh in 1565.[37] Indeed, there is a danger that when there is an overlap in more standard treatment methods used by Aztecs or *curanderos* and the Spanish, they tend to simply get attributed to the Spanish as an imposition. It is important to remember, therefore, that for Spanish patients, much of the treatment received at the hands of indigenous doctors and *curanderos* would have been startlingly similar to treatments received by Spanish practitioners.

Bathing and massage

For the Nahuas the removal of filth was considered essential. Sahagún reports that daily bathing with a soap made from the fruit of the *copalxocotl* was common. Of the *temazcallis* he says,

[34] AGN Inquisición vol. 38 exp. 2 'Proceso contra Marta, esclava de Pedro Pérez, y contra la morilla, partera y María de Espinosa e María, esclava del Maestre Diego, e Margarita Pérez y Anton indio, por hechicerías,' México, 1536.
[35] AGN Inquisición vol. 38 exp. 10. fols. 212-237 'Proceso contra Isabel Vera por haber curado en Guayangareo, con cabezas negras de carnero y otros hechisos,' Michoacán, 1562. Ana de Silva says the mixture contained cows liver, lead and white onion among other things.
[36] AGN Inquisición vol. 278 exp. 2 'Testificaciónes contra Marco Ramírez e Isabel Aguilar por hechiceros' Michoacán, 1614 (although it is dated to 1614 it refers back to six years earlier). This purge produced "una bola de culebrillas delgadas como cerdas" (snakes as thin as bristles) which led them to believe bewitchment. Importantly, however, despite her detection of hechiceria she is not punished as a *curandera*.
[37] AGN Inquisición vol. 38 exp. 11 fols. 238-268 'Proceso contra Barbola de Zamora, por hechicería' Zacatecas, 1565.

> And the sick there restore their bodies, their nerves. Those who are as if faint with sickness are there calmed, strengthened....and one who perhaps has traipped and fallen, or who has fallen from a roof terrace; or someone has mistreated him – his nerves are shattered, he constantly goes paralyzed – they there make him hot...And one who has scabs, whose body is much festered, whose body is not much covered with sores, they there have wash.[38]

For the Spanish, however, such regular bathing was considered problematic. Not only was it against their own norms,[39] but it would almost certainly have also fallen under suspicion of keeping the native religious devotions alive. Nevertheless, while such suspicions result in the conclusion in the *Relación de Uextla*, for example, that "the natives bathe a lot, and because of this many of them die,"[40] it seems that in reality, certainly in the context of colonial Mexico, Spanish attitudes to bathing may have relaxed.

Certainly the conquistadors were said to have been impressed with Moctezuma's levels of cleanliness. Furthermore, whatever distaste and unease the indigenous practice of bathing may have engendered in the Spanish, it is worth considering that they continued to allow the practice among the Indians, even permitting them to build *temazcallis* attached to the Indian hospitals, as has already been mentioned. In 1569 Alonso de Molina reportedly admitted the healthful effects of sweatbaths, although it is unclear if he actually tried them out for himself,[41] and in 1584 Antonio de Ciudad Real reported that on a trip to an island called el Peñol to visit Fray Juan Salmerón "a very important and religious friar" who was there

[38] From Sahagún, *Florentine Codex*, Book XI, chap. VII, 191.
[39] Sherry Fields, *Pestilence and headcolds*, chap. 4 para. 35 reports evidence from Lobera de Avila (who wrote for the courtier class in Charles V court in 1520s) writing on the hazards of bathing, stating that the Spanish were not suited to it except in times of illness and even then only from the knees down.
[40] The original reads "y bañarse los naturales y ansi se mueren muchos," from the *Relación de Uexutla* in Paso y Troncoso, *Papeles de Nueva España*, vol. VI, 189.
[41] Burkhart, *Slippery earth*, 174.

"bathing because he had been suffering from numb hands and feet for some time."[42]

Indeed, Solange Alberro claims that as early as the sixteenth century evidence exists to suggest that *temazcallis* were being built next to Spanish settler's houses and that by the seventeenth century there were public baths.[43] While no such evidence was encountered during research for the current study, if true, it is certainly represents an astonishing and quick assimilation of a practice reportedly negatively viewed by the Spanish.

Unlike bathing, in the case of massage it is clear that there was already some convergence between Indian and Spanish practices. Although Ruiz de Alarcón is generally primarily concerned with elucidating the superstitious practices of the Indians a century after conquest, within this process he often reveals many of the empirical methods employed by them too, not least the use of massage. Ruiz de Alarcón remains scornful of some elements of these treatments, particularly the fact that the words that accompany the treatments are viewed as essential to the healing, by "false and superstitious doctors" who have "introduced a deception with their excommunicated spells, attributing to words that which the act brings by itself."[44] Nevertheless, as seen in the case of *tetleiccatliztli* (a method of applying heat and pressure to a body in pain), he has no doubts about the role of massage in healing, rather he comments that "it is well proven by experience that those who suffer from pains in the body from too much fatigue feel relief by

[42] The original reads, "fraile muy docto y principal...tomando unos baños por estar tullido mucho tiempo habia de pies y manos," in Ciudad Real, *Tratado curioso*, 78.
[43] See Alberro, *Gachupín*, 89. Although she provides no source evidence for her assertion regarding temazcals in the 16th century, she gives AGN Inquisition 394 exp2 from 1642 as evidence for public baths.
[44] Fields, *Pestilence and headcolds*, chap. 2 para. 68.

means of massage of the body."[45] Massage was, therefore, apparently already a therapy which provided convergence between Spanish and indigenous practice.

Divine and superstitious medical practice

The sources tend to provide a skewed picture of indigenous medicine, with an over-emphasis on superstition and magic given that it is known that more standard therapeutic practices were also involved. Nevertheless, religion (and therefore magic and witchcraft in the Spanish view of indigenous religion) did permeate the indigenous world view and was, indeed, central to their medicine. Nor, as has been explored in earlier chapters, was this exclusive to the Indians, but was also true of the Spanish and Africans too. Although magic, religion and curing were defined as distinct activities by the Spanish authorities, they were almost certainly combined within the same field for most patients, and many practitioners, in the early colonial period. Indeed, it was precisely because of this fact that the medical landscape was so diverse; with most people seeking remedies for illnesses that they attributed to natural and supernatural (magical or religious) causes, there was scope in the colonial context for a diverse range of practices to emerge catering to all aspects of such beliefs.

Furthermore, in Mexico, the Catholic Church played a dominant role in the distribution of medical information and care, which was to have a profound and continued effect on medical beliefs and practices, not least because it helped propagate notions of divine healing, as expressed by Antonio de Ciudad Real: "Our Father, who is not subject to the recipes of Galen or Dioscorides or

[45] Coe and Whittaker, *Aztec sorcerers,* 39.

Avicenna cured him with his hand like a true doctor, without need for any medicines at all."[46] Alongside direct involvement in hospitals, the Church was also involved in healing rituals through its creation of a range of healer saints, "generating a hierarchy of spiritual figures who specialised in miracle cures for certain ailments."[47] This information was distributed in thousands of *novenas* [48] and prayers across Mexico throughout the sixteenth century calling for the prevention and cure of illnesses from a range of saints including, San Roque for contagious diseases and San Rafael for childbirth. Indeed, Guerra's research into the total number of books printed in Mexico shows that those devoted to prayers for health were five times more numerous than those devoted solely to medicine.[49] Thus, within the approved medical domain, healing saints stood alongside domestic remedies and local medical practitioners. [50]

Any assessment of the exchange of medical practices must, therefore, take into consideration more esoteric, magical and religious practices such as oration, prayer and confession, for example, which, while not therapeutic by modern standards were considered an integral and essential part of medical treatment by most early colonial patients, and many practitioners.

Diagnosis and divination

While in humoralism's purest application, one of the most defined differences between trained Spanish physicians and *curanderos* was in the way in which they

[46] Ciudad Real, *Tratado curioso,* 248.
[47] Fields, *Pestilence and headcolds,* chap. 2 para. 5.
[48] A devotion prayer conducted over nine days.
[49] Francisco Guerra, "Medical folklore in Spanish America," offprint from *American folk medicine: a symposium,* ed. Debs Hand Wayland (Berkeley and London: University of California Press, 1976), 171.
[50] Fields, *Pestilence and headcolds,* chap. 2 para. 79; see also Francisco Guerra, "Role of religion," 181-2.

diagnosed illness – with humoral doctors seeing illness as a result of natural causes (often due to humoral imbalances) while for *curanderos* illness was considered the result of a deliberate act by a person or supernatural entity which needed to be addressed – the reality was often not so straightforward. There were, in actual fact, two sources for diagnosis available to the Spanish; reason and revelation. While the former depended on the science of the time, the latter could be achieved by employing various methods including oracles, astrology and palm reading, not all of which were deemed illegal.

For the Indians, Sahagún describes the *Tonalpouhque,* a soothsayer-doctor who fortells the future, origins of illness and the duration of a lifetime.[51] This was often achieved through the use of hallucinogenic drugs. Although certainly distinct in their methodologies, it is important to consider that medical divination existed in both systems. While there are no examples of either impacting directly on the other, it seems likely that the similarities of intent combined with a clear lack of 'science' would have served to confuse indigenous notions of what constituted acceptable medical practice for the Spanish, and to justify their continued use of divination techniques.

Indeed, such indigenous divinations are evident throughout the archival sources, and involved all races. While products like *peyote* and *ololiuhqui* have been more fully considered in the previous chapter, it is, nevertheless, worth reiterating an element of the analysis that is pertinent to the consideration of practices: the fact that, in the early days the Spanish did not generally take the hallucinogens themselves but instead asked Indians to do it for them. While this can certainly be

[51] Sahagún, *Florentine Codex,* Intro. Vol, 61 and Book X, 31. Book IV depicts how these prophesies were made according to fortunes written relating to the day of birth.

seen as representative of a level of fear of the unknown, it also suggests that the use of these drugs, certainly in the early colonial period, continued according to Indian practices.

Oration, incantation, prayer and confession

Once a *curandero* had determined who or what had caused the harm, placation was often the next step and this often involved incantation, prayers, sacrifices and confession. Thus *curanderos* regularly invoked the help of their gods during the process of curing. Sahagún, in his outline of the role a good midwife, shows that alongside using medications, rotating fetuses incorrectly positioned, and inducing labour or abortions, they also called on the goddess of medicine, stating to the labouring woman "bear down; imitate the brave woman Ciuacoatl, Quilaztli."[52] African and indigenous curers were not alone in curing with words and appeals to the supernatural, however, as this was precisely the function of the *ensalmador* for the Spanish.

From the outset Spanish missionaries tried to exploit what they saw as similarities between Christian practices and native rites including fasting, 'communion,' and perhaps most significantly, confession. Indeed, many sixteenth century friars, such as Fray Gerónimo de Mendieta and Toribio de Benavente Motolinía were impressed with the ability and facility that Indians demonstrated for learning what they were taught, and how readily they adapted to the Christian practice of confession.[53] The etiology of sin provided fertile ground for preaching to the Indians, with links made between morality and sickness, not least because the idea

[52] Sahagún, *Florentine Codex,* Book VI, chap. XXVII, 160, 152-160.
[53]See, for example, Motolinía, *Historia de los indios,* book I, chap XII; and Mendieta, *Historia eclesiástica indian,* book III, chaps 41-42.

that sins caused disease and confession cured them resonated with the Aztec, who already had their own confessional rituals such as *yolmelaua*.[54] Indeed, confession sat squarely within formal notions of best medical practice for the Spanish. While it is evident, for example, that there was an increased emphasis on confession as therapeutic method in Agustín Farfán's second edition of his book,[55] more significant still is the fact that during the Third Mexican Provincial Council of 1585 it was included in the statutes that without extraction of confession, physicians were to abandon the care of their patients.[56]

While some elements of Catholicism, such as confession and the pantheon of saints, were readily accepted by Indians, however, the Church was unable to control the nature of this religious assimilation, or ensure absolute adherence to the Christian supernatural. The result was a mixing of beliefs, words and practices. Thus the Spanish took Indian deities to be incarnations of Satan and, for their part, the Indians readily accepted the new god, and other figures such as Jesus and the Virgin Mary, but on their terms - not exclusively but instead as part of their pantheon of deities. The proximity but deviation of religious opinions, within which certain religious activities were sanctioned and others prohibited led to great confusion. As Serge Gruzinski notes,

> How could the Indians tell the European sorcerers condemned by the church from those Spaniards who with the authorization of the bishops and local councils could exercise the functions of saludadores, ensalmadores and santiguadores, that is, healers who treated sickness with prayers and blessings? [57]

[54] *Yolmelaua* was the indigenous practice of confession followed by a temazcalli. See Louise Burkhart, *Slippery Earth*, 173; and Guerra, "Medical folklore," 170.
[55] Jarcho, "Medicine in sixteenth-century New Spain,"434-437.
[56] *Concilio III provincial mexicano*, 303.
[57] Gruzinski, *Conquest of Mexico*, 200, 184-5. In the case of Peru, Carolyn Dean also notes the ambivalence of the authorities approach to integrating Peruvians into Catholic rituals which actually encouraged reference, for example, to pre-Hispanic feasts. She notes the resulting uncertainty that emerged amongst colonial authorities about the precise nature of indigenous

It seems clear that from very early on and throughout the early colonial period, Indians and Africans incorporated Christianity into their healing rituals and prayers.[58] Early Inquisition documents reveal the inclusion of Catholic rites in more esoteric medical practices involving both Blacks and Indians. In 1536 the case of Isabel de Morales, the *morilla partera* reveals that when helping a woman in labour used the words "in the name of the Father, the Son and the Holy Spirit, Holy Mary gave birth to a boy..." although it appears that she also muttered incomprehensible words under her breath.[59] In 1565 the case against the *mulata* Barbola de Zamora, recorded that alongside the "yawns" and "spells with profane and superstious words which she [Barbola] suggests are the reason that illnesses are cured," and for which she stood accused of witchcraft were Christian utterances to Jesus.[60] In a case from 1614 an unnamed Indian woman was seen conducting spells with maize in water and making the sign of the cross.[61]

A century after the conquest, Ruiz de Alarcón's work clearly demonstrated the assimilation of Christian prayer into the healing practices of indigenous practitioners, where healing is finished with the words, 'in the name of the Father,

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Catholic practices; pleasure derived from initial conversion but quickly tempered due to uncertainty over clear differences; see Carolyn Dean, *Inka bodies and the body of Christ: Corpus Christi in colonial Cuzco, Peru* (Durham, N.C.: Duke University Press, 1999), 46.

[58] See, for example, Guerra, "Role of religion," 183.

[59] The original reads, "en el nombre de padre y del hijo y del spiritu santo sancta María parió un hijo no mas este biryo y birya para siempre jamás así como este es verdaderamente y verdad así te quite toda fatiga y todo mal," AGN Inquisición vol. 38 exp. 2 'Proceso contra Marta, esclava de Pedro Pérez, y contra la morilla, partera y María de Espinosa e María, esclava del Maestre Diego, e Margarita Pérez y Anton Indio, Por hechicerías,' México, 1536.

[60] The original reads, "bostezos...y ensalmos con palabras profanas y supersticiosas que dice dando a entender que con las palabras y habliesas les a de sanar las enfermedades," AGN Inquisición vol. 38 exp. 11 fols. 238-268 'Proceso contra Barbola de Zamora, por hechicera' Zacatecas, 1565.

[61] AGN Inquisición vol. 278 exp. 4 'Testificaciónes contra Fabian de Oviedo y contra Isabel Duarte por hechizeros,' Michoacán, 1614.

Son and Holy Ghost.'[62] Such is the case Ruiz de Alarcón's "of an Indian fiction concerning the cure of the abdomen" in which the following prayer is transcribed:

> stone is intoxicated
> wood is intoxicated
> the yellow priest will follow her
> in the house of plumes
> in the house of bracelets
> he is crying raucously
> he will follow her
> the blue-green priest
> the dark priest
> in nomine patris et filii
> et Spiritu Sancti. [63]

Furthermore in this case, Catholic imagery has even impacted on the hallucinatory visions of the Indian in question, who describes being carried away by two white clad figures and then being visited by other ladies in white, including the Virgin Mary. It seems that Christian imagery had penetrated deep into the indigenous system and become fully incorporated into their healing methodology. This is further seen in some of the terminology found in Ruiz de Alarcón; for example, where before patients had been called 'child of the gods' (*teteoynpiltzin*) in the plural, they begin to appear as 'subject of god' (*imacehualtzin dios*) or 'god's creature' (*dios itlachihualtzin*), in the singular.[64]

Amulets and charms

As previously examined, pre-conquest use of charms and amulets by Indians and Africans was common: evidence shows, for example that Nahua priests carried

[62] This is also noted in Lockhart, *Nahuas after conquest*, 259.
[63] Coe and Whittaker, *Aztec sorcerers*, 259-261.
[64] Lockhart, *Nahuas after conquest*, 259-260.

bundles of powders and hummingbird amulets used in erotic magic.[65] References are made in the *Codex Badianus* to charms, such as a corpse's tooth used in the treatment of fever and a fox's eye to help sore eyes.[66] Bernal Díaz reveals the practice was also used by the Spanish, commenting that, having seared their battle wounds with oil,

> a soldier named Juan Cardenas blessed them for us and made charms, and truly we found that our Lord Jesus Christ was pleased to give us strength in addition to the many mercies he vouchsafed us every day, for the wound healed rapidly.[67]

This belief in the power of amulets and charms provided common ground. While there is little direct evidence of specifically medical applications, it is clear that the practice continued throughout the early colonial period. This is seen, for example, in the Inquisition case from 1621 of a *negra*, Isabel, giving an *india*, also called Isabel, a pouch of unnamed powders ("unos polvos en trapillo atados") to carry around to ensure the admiration of men.[68]

Nor was the use of such charms confined to the popular sector. The Inquisition case against Doctor Cristóbal Méndez, dating from the 1530s is a fascinating, early case of a professional doctor being examined by the Inquisition for superstitious practices. Méndez's case involved his use of gold medallions (or seals) engraved with zodiac signs, which he believed to have virtues that brought happiness and health, and alleviated kidney problems. In his testimony he revealed that he had read about such things in a book by Doctor Arnaldo de

[65] Noemí Quezada, *Amor y magia amorosa entre los aztecas* (México: Universidad Nacional Autónoma de México, 1984), 97-106, quoted in Lewis, *Hall of mirrors*, 160.
[66] Emmart, Badianus manuscript, 46.
[67] Blanton, "Medical references," 404.
[68] AGN Inquisición vol. 339 exp. 84 fols. 560-590 'Denuncia contra Catalina de Ovejo, por usar polvos maléficos; María López, por dar de beber en el chocolate la sangre de su periodo a sus amigos; Ines de Tapia y contra varias Indias y Negras por adivinas; Leonor Ortiz de la Torre, por quitar la landrecilla; Isabel de Vergara, Hernándo Mejia, por brujerias; Francisco Covarrubias, clerigo, por amancebado; Juana de Castro, bruja,' Guadalajara, 1621.

Villanovo, a famous and respected doctor, who wrote on the benefits of astrological inclusions:

> About six years ago...when I was perusing and studying various medical books I came across the works of a Doctor Arnaldo de Villanovo, who is renowned amongst doctors...who recommended making seals out of fine gold when the sun begins to enter a zodiac sign, and these seals made on such days will be endowed with many virtues...not least kidney troubles.[69]

It is worth noting that in his final defence Doctor Méndez clarified that no such charms worked without God's willing. Although astrology was widely accepted at this time, in this particular case he was found guilty of superstitious practices.[70]

Sucking, blowing and extraction

Blowing on patients and sucking to extract items were known healing methods in African and Indian rituals. According to Sahagún, alongside the more standard therapies that a good physician was expected to master, such as knowing the properties of herbs, roots, trees and stones, were supernatural extractions such that "from teeth she [he is referring to female *ticitl*] pulls worms, and from other parts of the body paper, flint, obsidian"[71] Furthermore, in his descriptions of some of the specialisations of Nahua practitioners, he mentions *techichiani* – "those that suck" – or *ticitl* who specialised in causing a person's illness to manifest itself in

[69] The original reads, "Podia aver seis anos...que este confesante leyo astrología en esta ciudad en la iglesia mayor della e andando mirando y estudiando en unos libros de medicina hallo un doctor que se dice Arnaldo de Villanovo lo cual entre los médicos es doctor famoso y publicado que dice que hechos unos sigilos de oro fino cuando el sol entra en principios de cualquier signo que los dichos sigilos hechos en los dichos signos cuando el sol entra en principio de cualquier dellos tiene virtud para muchas cosas" so he told his friends about it becuase "en el libro maestre de medicina de doctor de mucha opinion le hallado escrito que hechos ciertas sigilos de oro fino en cierta forma como aquel doctor dice son buenos para muchas cosas y para salud y para dolor de riñones," AGN Inquisición vol. 40 exp. 3 fols. 15-19 'Proceso del Santo Oficio de la Inquisición contra el Doctor Cristóbal Méndez por haber mandado hacer unas medallas of sigilos de oro que hechas cuando el sol entraba, en el principio de ciertos signos, teniean entre otras virtudes la de curar mal de riñones,' México, 1538.

[70] For more information on Cristóbal Méndez see Chapter 3.

[71] Fields, *Pestilence and headcolds,* chap. 2 para. 13.

objects that could be extracted through a physical manipulation. The Nahuas believed the removal of such objects would help start the healing process.[72] Such methods continued to be used by some throughout the colonial period by both Blacks and Indians, with examples emerging from the earliest period, again in the case of Isabel Morales, the *morilla partera*, accused by Isabel Alvarado of blowing, or yawning, on her son whilst curing him,[73] and even more frequently by the beginning of the seventeenth century. To the patients such treatments clearly produced satisfactory results, for example in 1614, Fabian de Oviedo (whose race is unclear from the document) related that he had a bad stomach and after an Indian man "sucked his belly button and sprayed him with water, appearing to remove something in his mouth" he felt much better.[74]

Although the ethnic background of those undertaking the treatments is primarily Black or Indian in the archival documents viewed for the current study, amongst Ruiz de Alarcón's frequent mentions of blowing by Indians he includes a phrase in his description of the 'head spell' that suggests that it was also a practice undertaken by the Spanish, certainly on the mainland: "after this spell has been said, she blows on the head four times like the curers of Castile; here it is noted, firstly, how much the devil tries to imitate the ceremonies of the church."[75] Furthermore, whether or not the Spanish were actively practising blowing or sucking, the archives attest to the fact that as patients they sometimes willingly

[72] Fields , *Pestilence and headcolds,* chap. 2 para. 15-18.
[73] AGN Inquisición vol. 38 exp. 2 'Proceso contra Marta, esclava de Pedro Pérez y contra la moralla, partera y María de Espinosa e María, esclava de Maestre Diego e Margarita Pérez y Antón Indio, por hechicerías,' México, 1536. Again see Fields, *Pestilence and headcolds,* chap.2 para. 64-65, who talks of 'curing with breath' and 'sucking' amongst indigenous treatments.
[74] The original reads, "el indio chupandolo el hombligo y rociandole con agua y le pareció que echaba alguna cosa de la boca sacada de aquel lugar," in AGN Inqusición vol. 278 exp.4 'Testificaciones contra Fabian de Oviedo y contra Isabel Duarte por hechizeros,' Michoacán, 1614.
[75] Coe and Whittaker, *Aztec sorcerers,* 232.

submitted to such treatments. Even a Spanish priest, Hernán Sánchez Ordiales, faced trial for superstitious treatment by an *india*, during which "she sucked on a wound on his leg and extracted three dead persons' bones that a witch had put there with spells," saying Indian words and exhaling on his body after the extraction.[76]

All of the patients of the *negro* called Francisco de Puntilla facing trial in 1614, some of whose treatments also involve sucking and blowing, were also Spanish. Indeed, this last case merits further attention. It is clear (and, indeed, specifically mentioned by some of those deposing) that Francisco de Puntilla cured a lot of Spaniards in Celaya. His practices varied from the location of lost goods for María de Soto, to healing María Ramos' husband's headaches, and Francisco Martín's sick stomach. His practices vary from sucking to extract the badness from Francisco Martín's stomach, to extracting worms from the head of María Ramos' husband. In the latter case, he further uses the beak of a chicken as part of the curing ritual by putting the beak all over the patient's head, and in his ears, and, according to María Ramos' testimony, apparently talking in an unintelligable language while doing so.[77] What is particularly interesting about the case of Francisco de Puntilla is that he is described as a *negro ladino* – a hispanicised Black – and yet he employs the beak of the chicken in his curing, which is a practice known from Africa. Alongside the fact that he speaks in a language no

[76] The original reads, "le chupo una llaga que tenia en una pierna y con eso saco tres huesos de muerto que el hechizero le habia metido con sortilegios," in AGN Inquisición vol. 348 exp. 4 fols. 101-166 'Información contra Hernán Sanchez Ordiales Beneficado de Cuacoman, por haberse curado con una india, porque segun decian lo habian hechizado y la india le chupo una llaga que tenia en una pierna y con eso le saco tres huesos de muerto que el hechicero le habia metido con sortilegios,' Michoacán, 1624.

[77] AGN Inquisición vol, 278 exp, 5 'Testificaciónes contra Francisco de Puntilla, negro por embustero, y contra María Vázquez por lo mismo,' Michoacán, 1614.

one understands, we can see that, despite considerable Spanish acculturation he uses some of the healing rituals found in Africa.

Chapter 7

CONCLUSION

The story of the conquest of Mexico has, until very recently, been told from the perspective of the Spanish, awarding prime agency for events in the colonies to these invaders. Medical evolution in the colony has, therefore, been largely understood from such a perspective. Within this model, notions of exchange have centred around the idea that "in broad outline, the New World contributed a rich store of herbal and other remedies while Spain contributed the basic explanatory theory"[1] – namely that there was an export of Indian herbs and herbal knowledge and an import of humoralism, by the priests and physicians who worked, largely within hospitals. Even within this model scant attention has been paid to the processes by which and degree to which exchange occurred nor, indeed, the fact that many of the central humoral tenets reportedly imported, such as notions of hot and cold, bleeding and purging, appear to have already existed, in different forms, in Aztec medical understanding and therapy.

Focusing on the Spanish Crown's *responses* to medical shortages in the colony, rather than to the shortages themselves does, however, highlight the significance of the ambiguous Spanish responses which resulted from their paradoxical need to enculturate the colonised and uphold difference and status.[2] The Spanish authorities had an almost schizophrenic response to the shortages; on the one hand establishing a bureaucracy that excluded almost all indigenous people from legal

[1] Hernández-Sáenz and Foster, "Curers and their cures," 44.
[2] Carolyn Dean, *Inka bodies,* 47, refers to this as "the coloniser's quandary: the paradoxical need to enculturate the colonized and encourage mimesis while, at the same time, upholding and maintaining the difference that legitimizes colonization."

medical practice and on the other, pragmatically turning a blind eye or even awarding licenses, particularly in rural areas where the greatest shortage was encountered. In the end the Spanish often conceded that an Indian doctor was better than no doctor at all.

Prosecutions were therefore often made according to the *type* of indigenous treatment, rather than the *fact* of indigenous treatment.[3] And subsequently, the status of indigenous practitioners was subject to whimsical change; a legitimate practitioner could be deemed illegitimate overnight through revelation of certain practices. These facts are phenomenally significant. It was not simply the case that the state wanted one thing to happen but was unable to control the reality of the situation but that at times they were saying one thing and doing another.

Relaxation of laws to meet local needs would have generated great confusion over what constituted legitimate medical practice. Any such confusion would only have been augmented by some of the evangelising methods employed by the friars of New Spain, drawing on the similarities between some indigenous practices, which did little to help encourage the indigenous population from disentangling their medical concepts from the magical and religious domain.

It is paradoxical that Spanish attempts to regularise and even bureaucratise native medicine and religion, resulted in simultaneously vindicating elements as legitimate and driving them underground, thus starting the long process whereby the proto-scientific aspects of native medicine were apparently 'lost' to the face of

[3] This ambiguous attitude is seen in one of the very first curandero prosecutions to take place – that of a woman called Ana from Xochimilco, who in 1538 was sentenced to 100 lashes, not *because* she was treating people but because of *how* she was treating them, see Viesca Treviño, "*Curanderismo,*" 56.

'superior' western vigour. The story of this tendency and counter-tendency, perhaps more than any other, provides an insight into the specifically contradictory movement of assimilation, syncretism and exchange between the two systems.

The network of hospitals established across the colony, catering to all ethnic groups were, with the help of the religious orders, nurses and *ad hoc* support from *semaneros*, able to provide some succour to the neediest members of Mexican society. Furthermore, they provided a vital space in which different cultures and different medical cultures crossed. That indigenous foods, herbs, herbalists, nurses and possibly doctors were given space, if not positive encouragement, within colonial hospitals meant that Spanish practitioners and priests working in them were inevitably exposed to their medicine, and vice versa. By thus providing opportunities for inter-racial exposure to different medical techniques, products and professionals, hospitals facilitated the reciprocal exchange of medical knowledge, playing a key role in the story of medical fusion in the early colony.

While perhaps the most successful of the Spanish state's impositions for medical provision, and that which came closest to adequately functioning, hospitals were, nevertheless, incapable of fulfilling their role as primary healthcare providers. The prospect of discomfort, isolation and disempowerment associated with congregating the infectious sick under one roof, meant that hospitals held little appeal for most colonists, even to those who subscribed to the brand of medicine practised within them, catering instead to the very poorest, isolated elements in society.

Alongside hospitals, jails, convents and pharmacies also provided spaces in which medicines and treatments were provided. Here mixed colonial populations were ministered medicines by elite Spanish physicians and their assistants from diverse ethnic backgrounds. While certainly in the case of jails such medicines appear to have been drawn exclusively from the European pharmacopoeia, it seems that they were sometimes supplemented with alternative therapies and products. Furthermore, evidence suggests that in pharmacies and convents *curanderos* were also granted space to practise.

If there was room for exchange, diversity, pluralism and variety in these formal environments, it was greatly augmented by options in the informal sphere, where the greatest degree of inter-racial exchange and assimilation appears to have occurred. In the home environments, where probably the majority of colonial people were treated, the choice of medical provision was widely expanded. Here the choice of treatment and products clearly reflected patients' personal preferences, irrespective of already confusing government proclamations on what was and was not allowed.

Methods and practitioners selected in these informal environments were chosen and validated according to precise and distinct personal preferences, which encouraged great diversity and pluralism. Furthermore, here practitioners gained reputation according to the perceived 'quality' of their work, not their paperwork. Here, alongside standard therapeutic practices such as bleeding, purging and massage, esoteric practices abounded. It was in this informal domain that Blacks, *mestizos, castas,* Indians and women could gain the status as healers that was denied them in the formal medical domain.

When, in 1947, Percy Ashburn commented that "the savage Indians and negroes contributed little or nothing of any value to any branch of medicine, and from them instead we received a mass of superstition and ignorance that reinforced what we had brought from Europe,"[4] he inadvertently and precociously encapsulated some fundamental truths pertaining to the study of colonial medicine, the ramifications of which had, until recently, been widely overlooked. Central to Ashburn's derogatory statement is the fact that all three races in the New World played their part in the dissemination of medical information, certainly within the superstitious realm at least. Indeed, it is only through recognising the superstitious and magical elements central to all forms of sixteenth century medicine that any true evaluation of medical exchange and interplay can be usefully undertaken. Furthermore, such an approach makes it impossible to continue to ignore the African influence, as in this domain their opinions, preferences and input were as valid as all others. Indeed, despite the unenviable position Blacks in the New World often found themselves in, it seems that, informed by residual medical memories, they nevertheless managed to express medical preferences and make choices about the types of care they both practised and received.

It is clear that, excluding hospitals, the formal manifestations of Spanish medicine were largely reserved for those Spaniards who could afford them, or those African slaves whose masters opted for such treatment on their behalf. Furthermore, many of the Spaniards who opted for such treatment appear to have been equally

[4] Percy Ashburn, *The ranks of death: a medical history of the conquest of America*, ed. Frank D. Ashburn (New York: Coward Mc-Cann, 1947), 51.

receptive to the subsequent input of Black or Indian *curanderos*, not least in treating health problems that remained unresolved.

Alongside this, many Spaniards appear to have actively opted for treatment at the hands of *curanderos.* Despite notions of race superiority, Black and Indian *curanderos,* including those administering more esoteric treatments such as sucking and divination, did not want for Spanish clients. Although in the earliest days the Spaniards appear to have indulged in many of the superstitious practices by proxy, approaching Indians via Black and Mulatto intermediaries, and asking Indians to undertake divinations involving drugs and spells on their behalf, a century after the conquest the use of, for example, *peyote*, was reportedly common among the Spanish too. This process resulted in the slow appropriation and alteration of the nature of symbolic significance attached to such products by the Aztec. Although it is clear that Indians were mixing with Blacks and Spaniards in this domain, cases of their actual treatment by either, although present, are rare. It is unclear if this is a reflection of indigenous preferences, source bias or both.

Clearly Spaniards took indigenous plants and medicines throughout the sixteenth century, procured from and administered by a variety of providers, and often by their own hand. Books catering specifically to this market quickly emerged. It is important to remember, however, that any evidence of the Spanish partaking of indigenous remedies and plants does not indicate blanket acceptance by all. One hazard of any attempt to build interpretive historical narratives such as this is that notions of personal preference are often lost as they complicate the drawing of neat conclusions. It is important to remember that such personal preference did not merely inform the choices of the wider public, but of the elite physicians too.

Thus while Pedro Arias de Benavides deems the michoacan root "very bad" and guaiacum problematic, the former is recognised to be a "marvellous medicine" by other Spanish physicians, and the latter highly praised by the Franciscans.[5]

It is precisely these types of preferences, from all parties, elite and popular, Black, Spanish and Indian which informed the degree of choice and diversity in healthcare practices, products and practitioners that emerged in early colonial Mexico and that this research has sought to elucidate. While within this process it should be remembered that for every Spaniard taking *peyote* there may well have been hundreds who did not, this does not matter. Since the aim of this research is not to draw quantitative conclusions, rather to understand diversity, plurality and exchange as expressed through individual examples. By this token, proof of Spaniards taking *peyote* at all is relevant information in itself.

Ultimately it seems that in Mexico during the early colonial period, rather than there being any clear form of medical imposition, replacement or clean-cut exchange, instead there was exposure between all races which saw the reception and integration of different and differing elements of treatment and practice into a variety of mixtures and concoctions amongst most members of colonial society. This saw the incorporation, by all sides, of remedies and treatments including elements from both the Spanish and Indian medical domain.

Although the research contained here goes some way towards exploring and understanding pluralism and inter-racial medical evolution in early colonial Mexico, there is much more work to be done. The precise nature of the products

[5] Arias de Benavides, *Secretos de cirugia*, chap. 8, 40.

that were and were not selected by either side requires further investigation, in order to better understand, for example, if there was a tendency for Indians, Spaniards, or Blacks to adopt oils or resins over powders and gums. As consistently mentioned, much more work also still needs to be done on the Black populations who have, for so long, been ignored, particularly in light of the current research that demonstrates that they had agency in the medical arena.

SOURCES AND BIBLIOGRAPHY

UNPUBLISHED PRIMARY SOURCES

AGI – Archivo General de las Indias, Seville

Audiencia de México
Patronato

AGN – Archivo General de la Nación, Mexico.

Archivo Histórico de Hacienda
Bienes Nacionales
Civil
Criminal
General de Parte
Hospitales
Inquisición
Real Fisco de la Inquisición

PUBLISHED PRIMARY SOURCES

Acosta, José de. *Historia natural y moral de las Indias* [1590]. Madrid, 1954, http://www.cervantesvirtual.com/obra-visor/historia-natural-y-moral-de-las-indias--0/html/ (12 November 2011)

Arias de Benavides, Pedro. *Secretos de cirugía* [1567]. México: Academia Nacional de Medicinal, 1992.

Bautista, Fray Juan. *Confessario en lengua mexicana y castellana.* México: Melchior Ochoarte, 1599. http://www.primeroslibros.org/page_view.php?id=pl_blac_046&lang=en&page=1 (12 November 2011)

Cartas de Indias. Madrid: Ministerio de Fomento, 1877. http://www.archive.org/details/cartasdeindias00fomegoog (12 November 2011)

Ciudad Real, Antonio de. *Tratado curioso y docto de las grandezas de la Nueva España: relación breve y verdadera de algunas cosas de las muchas que sucedieron al padre fray Alonso Ponce en las provincias de la Nueva España: siendo comisario general de aquellas partes; escrito por dos religiosos, sus compañeros.* Madrid: Imprenta de la Viuda Calero, 1873.

Coe, Michael D. and Gordon Whittaker, eds. *Aztec sorcerers in seventeenth century Mexico: the treatise on superstitions by Hernando Ruiz de Alarcón.* Albany, New York: State University of New York, Institute for Mesoamerican Studies, 1982.

Concilio III Provincial Mexicano: celebrado en México en el año 1585, confirmado en Roma por el Papa Sixto V, y mandado observar por el gobierno español en diversas reales órdenes / ilustrado con muchas notas de Basilio Arrillaga ; y un apéndice con los decretos de la Silla apostólica relativos a esta Santa Iglesia . Coordinated by Mariano Galván Rivera. Barcelona: Imprenta de Manuel Miró y D. Marsá, 1870.

Cortés, Hernán. *Letters from Mexico.* Edited and translated by Anthony Pagden. New Haven and London: Yale Nota Bene, 2001.

Cowans, Jon ed. *Early modern Spain: a documentary history.* Philadelphia: University of Pennsylvania Press, 2003.

Díaz del Castillo, Bernal. *Historia Verdadero de la Conquista de la Nueva España.* Vol. II. Mexico: Editorial Pedro Robnedo, 1939.

Díaz del Castillo, Bernal. *The conquest of New Spain.* Translated by J.M. Cohen. London: Penguin Books, 1963.

Díaz del Castillo, Bernal. *The memoirs of the conquistador Bernal Díaz del Castillo.* Vol. II. Translated by John Ingram Lockhart. London: J. Hatchard and son, 1844.

Emmart, Emily Walcott, ed. *The Badianus manuscript: (Codex Barberini, Latin 241, Vatican Library) an Aztec herbal of 1552.* Baltimore: The John Hopkins Press, 1940.

Farfán, Agustín. *Tractado breve de medicina* [1592]. Madrid: Ediciones Cultura Hispánica, 1944.

Fragoso, Juan. *Discursos de las cosas aromaticas, arboles y frutales, y de otras muchas medicinas simples que se traen de la India oriental, y sirven al uso de medicina.* Madrid: Francisco Sánchez, 1572.

Gates, William ed. *An Aztec herbal: the classic Codex of 1552.* New York: Dover Publications, 2000.

Hospital de San Lázaro. *Ordenanzas del Hospital de San Lázaro de Mexico, año de 1582*. México: J, Porruá, 1956.

Hospital Real de Indios. *Constituciones y ordenanzas para el régimen y govierno del hospital real y general de los Yndios de esta Nueva España.* 1778. Facsimile reprint. México: Rolston-Bain, 1983.

Leyva, Lucio, coord. *Anáhuak tlapahtililli: la curandería en anáhuak.* México: Universidad Autónoma Metropolitana, Unidad Azcapotzalco, División de Ciencias Sociales y Humanidades, 1994.

Libros de cabildo de Lima. 20 vols. Lima, 1935-1962.

Lockhart, James. *We people here: Nahuatl accounts of the conquest of Mexico.* Berkeley, California: University of California Press, 1993.

López de Gomara, Francisco. *Cortés: the life of the conqueror by his secretary* [1552]. Edited and translated by Lesley B. Simpson. Berkeley: University of California Press, 1966.

López de Hinojosos, Alonso. *Suma y recopilación de cirugía: con un arte para sangrar muy útil y provechosa* [1578]. México: Academia Nacional de Medicina, 1977.

López de Velasco, Juan. *Geografía y descripción universal de las Indias, recopilada por el cosmógrafo-cronista, Juan López de Velasco, desde el año 1571-1617.* Madrid: D. Justo Zaragoza, 1894.

Mendieta, Gerónimo de. *Historia eclesiástica indiana.* Prepared by Joaquín Garcia Icazbalceta. México: F.Diaz y Leon and Santiago White, 1870. http://books.google.co.uk/books?id=W5VBAAAAcAAJ&printsec=frontcover&dq=historia+eclesiastica+mendieta&hl=en&ei=XdLGTvmAHsSb8QOHg8CFAQ&sa=X&oi=book_result&ct=book-thumbnail&resnum=4&ved=0CEAQ6wEwAw#v=onepage&q=historia%20eclesiastica%20mendieta&f=false (12 November 2011)

Monardes, Nicolás. *Joyfull newes out of the newe founde worlde: written in Spanish by Nicholas Monardes physician of Seville and englished by John Frampton, Merchant anno 1577.* New York: AMS Press, 1967.

Moreno, José J. *Fragmentos de la vida y virtudes del illmo y rmo Sr D. Vasco de Quiroga primer obispo de la santa iglesia catedral de Michoacán, y fundador del Real y Primitivo Colegio de S. Nicolás obispo de Valladolid.* México: La Imprenta del Real y mas antiguo Colegio de San Ildefonso, 1766.

Motolinía, Fray Toribio de Benavente. *Historia de los indios de la Nueva España, escrito a mediados del siglo XVI/ por el R.P.Fr. Toribio de Benavente o Motolínia de la Orden de San Francisco; sácalos nuevamente a luz el R.P. Fr. Daniel Sánchez García; teniendo a la vista las ediciónes de Lord Kingsborough y de García Icazbalceta.* Barcelona: Herederos de J.Gili, 1914.

Motolinía, Fray Toribio de Benavente. *Motolinia's History of the Indians of New Spain*. Edited and translated by E. Andros Foster. University of New Mexico: The Cortés Society, 1950.

Muñoz, Miguel Eugenio, ed. *Recopilación de las leyes, pragmáticas, reales decretos, y acuerdos del Real Proto-Medicato.* Valencia, 1751 http://books.google.co.uk/books?id=W714k4A48xoC&printsec=frontcover&dq=miguel+eugenio+munoz+recopilacion&hl=en&ei=J9PGTpmfIYLD8QOl591d&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDsQ6AEwAg#v=onepage&q=miguel%20eugenio%20munoz%20recopilacion&f=false (12 November 2011).

Oviedo y Valdés Gonzalo Fernández de. *Historia general y natural de las Indias* [1535], http://www.ems.kcl.ac.uk/content/etext/e026-copyright.html (12 November 2011)

Paso y Troncoso, Francisco del, ed. *Papeles de Nueva España.* 2a serie, Geográfica y estadística. 7 vols. Madrid: Establecimiento tip. "sucesores de Rivadeneya," 1905.

Recopilación de leyes de los reynos de las Indias...3 vols, Madrid, 1681. http://www.congreso.gob.pe/ntley/LeyIndiaP.htm (12 November 2011)

Sahagún, Fray Bernardino de. *Florentine Codex: a general history of the things of New Spain.* 12 vols. Edited and translated by Arthur Anderson and Charles Dibble. Salt Lake City: University of Utah Press, 1950-1966.

Santos, Fray Juan. *Cronología hospitalaria y resumen historial de la sagrada religion del glorioso patriarca San Juan de Dios. Aprobada por san Pio Quinto, y confirmada por Sisto Quinto, Paulo Quinto, y Urbano Octavo, pontifices maximos.* Madrid : Impr. de F.A. de Villadiego, 1715-1716.

Valle y Caviedes, Juan del. *Obras completas.* Edited by Daniel R. Reedy. Caracas: Biblioteca Ayacucho, 1984. http://books.google.co.uk/books?id=5XY_Lej48OwC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false (12 November 2011)

Varey, Simon, ed. *The Mexican treasury: the writings of Dr. Francisco Hernández.* Translated by Rafael Chabrán, Cynthia Chamberlin and Simon Varey. Stanford, California: Stanford University, 2000.

Vargas Machuca, Captain Bernardo de. *The Indian Milicia and description of the Indies.* Edited and introduced by Kris Lane and translated by Timothy F. Johnson. Durham and London: Duke University Press, 2008.

Vázquez de Espinosa, Antonio. *Compendium and description of the West Indies.* In *Smithsonian Miscellaneous Collection Vol 102*, translated by Charles Upson Clark. Washington: Smithsonian Institution, 1942. http://www.archive.org/stream/smithsonianmisce1021942smit/ (12 November 2011)

SECONDARY SOURCES

Aguirre Beltrán, Gonzalo. *La población negra de México.* México: Fondo de Cultura Económica, 1972.

Aguirre Beltrán, Gonzalo. *Medicina y magia: el proceso de aculturación en la estructura colonial.* 1963. Revised. [1963]. 1st rev. ed. México: Universidad Veracruzana, Instituto Nacional Indigenista, 1992.

Aitken, J.T., Fuller, H.W.C, and Johnson, D., eds. *The influence of Christians in medicine.* London: Christian Medical Fellowship, 1984.

Alberro, Solange. *Apuntes para la historia de la Orden Hospitalaria de San Juan de Dios en la Nueva- España-México, 1604-200.* México: Colegio de México, Orden Hospitalaria de San Juan de Dios, 2005.

Alberro, Solange. *Del gachupín al criollo: o de cómo los españoles de México dejaron de serlo*. México: El Colegio de México, Centro de Estudios Históricos, 1992.

Alberro, Solange. "Herejes, brujas y beatas: mujeres ante el tribunal del Santo Oficio de la Inquisición en la Nueva España." In *Presencia y transparencia: la mujer en la historia de México.* Edited by Carmen Ramos Escandon *et al.,* 79-94. México: El Colegio de México, 1987.

Alberro, Solange. "Negros y mulatos en los documentos inquisitoriales: rechazo e integración." In *El trabajo y los trabajadores en la historia de México.* Edited by Elsa Frost, 132-165. México: Colegio de México, 1979.

Altman, Ida. "Spanish society in Mexico City after the conquest." *Hispanic American Historical Review* 71 (1991): 413-446.

Aquado Vázquez, Juan Carlos and Xóchitl Martínez Barbosa, "El concepto de caridad como fundamento de la atención médica en la Nueva España." In *Medicina novohispana siglo XVI: historia general de la medicina en México, Tomo II,* coordinated by Gonzalo Aguirre Beltrán and Roberto Moreno de los Arcos, 272-278. México: UNAM, Academia Nacional de Medicina, 1990.

Arnold, David. "Introduction." In *Imperial Medicine and Indigenous Societies.* Edited by David Arnold. Manchester: Manchester University Press, 1988.

Ashburn, Percy. *The ranks of death: a medical history of the conquest of America.* Edited by Frank D. Ashburn. New York: Coward Mc-Cann, 1947.

Barbot, Jean. *Barbot on Guinea: the writings of Jean Barbot on West Africa 1678-1712.* Vol I. Edited by P.E.H. Hair, Adam Jones and Robin Law. London: The Hakluyt Society, 1992.

Barrera-Osorio, Antonio. "Knowledge and empiricism in the sixteenth-century Spanish Atlantic world." In *Science in the Spanish and Portuguese empires, 1500-1800.* Edited by Daniela Bleichmar *et al,* 219-232. Stanford, California: Stanford University Press, 2009.

Bazarte Martínez, Alícia. *Las cofradías de españoles en la ciudad de México (1526-1860).* Mexico: Universidad Autónoma Metropolitana, Unidad Azcapotzalco, División de Ciencias Sociales y Humanidades, 1989.

Behar, Ruth "The visions of a Guachichil witch in 1599: a window of the subjugation of Mexico's hunter-gatherers" *Ethnohistory* 34 (1987): 115-138.

Berte, Jean-Pierre "Les epidemies au Méxique au XVIe siècle." *Asclepio* 35 (1983): 257-263.

Blanton, Wyndham B. "Medical references in Bernal Diaz's account of the discovery and conquest of Mexico." *Annals of Medical History* 4 (1942): 339-405.

Blécourt, Willem J.C. de. "Witch doctors, soothsayers and priests: on cunning folk in European historiography and tradition.' *Social History* 19 (1994): 285-303.

Bleichmar, Daniela. "Books, bodies and fields: sixteenth-century transatlantic encounters with New World *materia medica.*" In *Colonial botany: science, commerce, and politics in the early modern world.* Edited by Londa Schiebinger and Claudia Swan, 83-99. Philadelphia: University of Pennsylvania Press, 2005.

Boxer, Charles. *Two pioneers of tropical medicine: Garcia d'Orta and Nicolás Monardes.* London: The Hispanic and Luso-Brazilian Council, 1963.

Bray, Warwick. *The everyday life of the Aztecs.* London: Batsford, 1968.

Bristol, Joan. "From curing to witchcraft: Afro-Mexicans and the mediation of authority." *Journal of Colonialism and Colonial History* 7 (2006): 1-37.

Brooks, Francis. "Impact of disease." In *Technology, disease and colonial conquest sixteenth to eighteenth century: essays reappraising the guns and germs theories.* Edited by George Raudzens, 127-165. Boston and Leiden: Brill Academic Publishing, 2003.

Burkhart, Louise. *The slippery earth: Nahua-Christian moral dialogue in sixteenth-century Mexico.* 2nd ed. Tucson: University of Arizona Press, 2000.

Cardenas de la Peña, Enrique. *Historia de la medicina en la ciudad de México.* México: METROpolitana, 1976.

Caro Baroja, Julio. *The world of the witches.* Translated by Nigel Glendinning. Chicago: Chicago University Press, 1964.

Cervantes, Fernando. *The idea of the devil and the problem of the Indian: the case of Mexico in the sixteenth century.* London: ILAS research paper no.24, 1991.

Comas, Juan. "Influencia de la medicina Azteca en la obra de Fray Agustín Farfán." In *Proceedings of the international congress of Americanists* 31, 27-30. San Salvador: Ministerio de la Cultura, 1955.

Comas, Juan. "Influencia indígena en la medicina hipocrática en la Nueva España del siglo XVI." *America Indígena* 14 (1954): 327-361.

Campos-Navarro, Roberto and Adriana Ruiz-Llanos. "Adecuaciónes interculturales en los hospitales para indios en Nueva España." *Gaceta Médica de México* 137 (2001): 596-609.

Conniff, Michael L. and Thomas Davis. *Africans in the Americas.* New York: San Martin's Press, 1994.

Conrad, Lawrence I. *et al.*, eds. *The western medical tradition 800 BC to AD 1800.* Cambridge and New York: Cambridge University Press, 1995.

Cook, David Noble. *Born to die: disease and New World conquest, 1492-1650.* 2nd ed. Cambridge: Cambridge University Press, 1998.

Court, W.E. "The doctrine of signatures or similitudes." *Trends in pharmacological sciences* 6 (1985): 225-227.

Crosby, Alfred. "The early history of syphilis: a reappraisal" In *Culture, disease and healing: studies in medical anthropology.* Edited by David Landy, 107-113. New York: Macmillan, 1977.

Crosby, Alfred. *The Columbian exchange: biological and cultural consequences of 1492.* Westport, CT: Greenwood Publishing Co., 1972.

Cunningham, Andrew and Bridie Andrews, eds. "Introduction." In *Western medicine as contested knowledge.* Edited by Andrew Cunningham and Bridie Andrews. Manchester and New York: Manchester University Press, 1997.

Davidson, Judith and Bernard Ortiz de Montellano. "The antibacterial properties of an Aztec wound remedy." *Journal of Ethnopharmacology* 8 (1983): 149-161.

De Vos, Paula Susan. "The art of pharmacy in seventeenth- and eighteenth-century Mexico*"* PhD diss., University of California at Berkeley, 2001.

Dean, Carolyn. *Inka bodies and the body of Christ: Corpus Christi in colonial Cuzco, Peru.* Durham, N.C.: Duke University Press, 1999.

Diamond, Jared. *Guns, germs and steel: the fates of human societies* (London: Jonathan Cape, 1997)

Ehrenreich, Barbara and Deidre English. *Witches, midwives and nurses: a history of women healers.* New York: The Feminist Press at City University of New York, 1976.

Estes, J. Worth, "The reception of American drugs in Europe, 1500-1650." In *Searching for the secrets of nature: the life and works of Dr. Francisco Hernández.* Edited by Simon Varey, Rafael Chabrán and Dora Weiner, 111-121. Stanford, California: Stanford University Press, 2000.

Estes, J. Worth. "The European reception of the first drugs from the New World" *Pharmacy in History* 37 (1995): 3-23.

Fajardo Ortiz, Guillermo. *Breve Historia de los hospitales de la ciudad de México.* Mexico City: Asociación Mexicana de Hospitales; Sociedad Mexicana de Historia y Filosofía de la Medicina, 1980.

Fernández-Carrión, Mercedes and José Luis Valverde. *Farmacia y sociedad en Sevilla en el siglo XVI.* Seville: Servicio de Publicaciónes de Ayuntamiento de Sevilla, 1985.

Few, Martha. *Women who live evil lives: gender, religion and the politics of power in colonial Guatemala.* Austin: University of Texas Press, 2002.

Fields, Sherry. *Pestilence and headcolds: encountering illness in colonial Mexico.* New York: Columbia University Press, 2008. http://www.gutenberg-e.org/fields/index.html (12 November 2011)

Figueroa Marroquin, Horacio. *Las enfermedades de los conquistadores.* San Salvador: Ministerio de la Cultura, 1957.

Flores, Francisco. *Historia de la medicina en México desde la época de los indios hasta la presente.* 3 vols. México: Oficina tip. de la Secretaria de Fomento, 1886-1888.

Forbes, Thomas. "Midwifery and witchcraft." *Journal of the History of Medicine* 17 (1962): 264-283.

Foster, George. *Hippocrates' Latin American legacy: humoral medicine in the New World.* Longhorn, PA: Gordon and Breach, 1994.

Freedman, Paul. *Out of the East: spices and the medieval imagination.* New Haven and London: Yale University Press, 2008.

García-Ballester, Luis. “Minorities and medicine in sixteenth-century Spain: judaizers, ‘moriscos’ and the Inquisition.” In *Medicine and medical ethics in medieval and early modern Spain.* Edited by Samuel Kottek and Luis García-Ballester, 119-135. Jerusalem: The Magres Press, The Hebrew University, 1996.

García-Ballester, Luis. “The Inquisition and minority medical practitioners in Counter-Reformation Spain: judaizing and morisco practitioners, 1560-1610.” In *Medicine and the Reformation.* Edited by Ole Peter Grell and Andrew Cunningham, 156-191. London: Routledge, 1993.

García-Ballester, Luis. “Academicism versus empiricism in practical medicine in sixteenth-century Spain with regard to morisco practitioners.” In *The medical renaissance of the sixteenth century.* Edited by Andrew Wear, Roger French and Iain Lonie, 246-342. Cambridge: Cambridge University Press, 1985.

Garrison, Fielding H. “An epitome of the history of Spanish medicine.” *Bulletin of the New York Academy of Medicine* 7 (1931): 589-634.

Gerste, Aquiles. *Notes sur la medicine et la botanique des anciens Mexicaines.* Rome: Imprimerie Polyglotte Vaticane, 1909.

Gibson, Charles. *The Aztecs under Spanish rule: a history of the Indians of the Valley of Mexico, 1519-1810.* Stanford, California: Stanford University Press, 1964.

Gimmel, Millie. “Hacia una reconsideración del Codice de la Cruz Badianus.” In *Colonial Latin American Review* 17 (2008): 273-284.

Goldin, Grace. “Juan de Dios and the hospital of Christian charity.” *Journal of the History of Medicine* 33 (1978): 6-34.

González-Ulloa, Mario. *La medicina en México*. México: Cyanamid de México, División Lederle, 1959.

Granjel, Luis. “Las repurcusiones médicas del descubrimiento.” In *Medicina en el descubrimiento.* Edited by Juan Riera, 29-41. Valladolid: Universidad de Valladolid, Ediciones del Seminario de Historia y Medicina, 1991.

Granjel, Luis. *La medicina española renacentista*. Salamanca: Ediciones Universidad de Salamanca, 1980.

Granjel, Luis. *El ejercicio médico y otros capítulos de la medicina española.* Salamanca: Instituto de Historia de la Medicina Española, Universidad de Salamanca, 1974.

Granjel, Luis. *Historia de la medicina española.* Barcelona: Sayman, 1962.

Greilsammer, Miriam. "The midwife, the priest and the physician: the subjugation of midwives in the Low Countries at the end of the Middle Ages." *Journal of Medieval and Renaissance Studies* 21 (1991): 285-329.

Grell, Ole Peter and Andrew Cunningham, eds., *Medicine and the Reformation.* London and New York: Routledge, 1993.

Gruzinski, Serge. *The conquest of Mexico: the incorporation of Indian societies into the western world, 16th – 18th centuries.* Cambridge: Polity Press, 1993.

Gruzinski, Serge. *Man-gods in the Mexican highlands: Indian power and colonial society, 1520-1800.* Translated by Eileen Corrigan. Stanford, California: Stanford University Press, 1989.

Guerra, Francisco *El Hospital en Hispanoamerica y Filipinas, 1492-1898.* Madrid: Ministerio de Sanidad y Consumo, 1994.

Francisco Guerra."Medical Folklore in Spanish America." Offprint from *American Folk Medicine: a symposium.* Edited by Debs Hand Wayland, 169-174. Berkeley and London: University of California Press, 1976.

Guerra, Francisco. "The role of religion in Spanish American medicine." In *Medicine and culture: proceedings of a historical symposium organised by the Wellcome Institute of the History of Medicine, London and the Wenner-Gren Foundation for Anthropological Research.* Edited by F. Poynter, 179-188. London: Wellcome Institute for the History of Medicine, 1969.

Guerra, Francisco "Aztec Medicine." *Medical History* 10 (1966): 315-338

Guijarro Oliveras, José. "Historia de los hospitales coloniales españoles en América durante los siglos XVI, XVII y XVIII." In *Archivos Iberoamericanos de Historia,* Vol II, 529-599. México: Archivos Iberoamericanos de Historia de la Medicina, 1950.

Gutiérrez-Colomer, Leonardo. "Médicos y farmacéuticos con Hernan Cortés." *Revista de Indias* 31-32 (1948): 331-337.

Harner, Michael J. "The role of hallucinogenic plants in European witchcraft." In *Hallucinogens and shamanism.* Edited by Michael J. Harner, 127-150. New York and Oxford: Oxford University Press, 1973.

Hernández-Sáenz, Luz María and George Foster. "Curers and their cures in colonial New Spain and Guatemala: the Spanish component." In *Mesoamerican healers.* Edited by Brad Huber and Alan Sandstrom, 19-46. Austin, Texas: University of Texas, 2001.

Horsley, Richard A. “Who were the witches? The social roles of the accused in the European witch trials.” *Journal of Interdisciplinary History* 9 (1979): 689-715.

Huguet-Termes, Teresa “New World materia medica in Spanish Renaissance medicine: from scholarly reception to practical impact.” *Medical History* 44 (2001): 359-376.

Hume, Edgar Erskine. “Spanish colonial medicine.” *Bulletin of the Institute of the History of Medicine* 2 (1934): 215-230.

Icazbalceta, Joaquín Garcia. *Don fray de Zumárraga: primer obispo y arzobispo de México*. México: Antigua Librería de Andrade y Morales, 1881.

Jarcho, Saul. “Medicine in sixteenth century New Spain as illustrated in the writings of Bravo, Farfán and Vargas Machuca.” *Bulletin of the History of Medicine* 31 (1957): 427-431.

Kamen, Henry. *Inquisition and society in Spain in the sixteenth- and seventeenth-centuries.* London: Weidenfeld and Nicolson, 1985.

Kidwell, Clara S. “Aztec and European medicine in the New World, 1521-1600.” In *The anthropology of medicine: from culture to method.* Edited by Lola Romanucci-Ross, Daniel E. Moerman and Laurence R. Tancredi, 20-31. New York: Praeger, 1983.

Kiple, Kenneth F., ed. *Cambridge world history of human disease.* Cambridge: Cambridge University Press, 1993.

Klein, Herbert. “Blacks.” In *The countryside in colonial Latin America.* Edited by Louisa Schell Hoberman and Susan Migden Socolow, 167-186. Albuquerque: University of New Mexico Press, 1996.

Klein, Norman. *Culture, curers and contagion: readings for medical social science.* Novato, California: Chandler and Sharp Publishers, 1979.

Lanning, John Tate. *The royal protomedicato: the regulation of the medical profession in the Spanish empire.* Edited by John Jay Tepaske. Durham: Duke University Press, 1985.

Lanning, John Tate. “Legitimacy and *limpieza de sangre* in the practice of medicine in the Spanish empire.” *Jahrbruch für Geschichte von Stat, Wirtschaft und Gesell-schaft Lateinamerikas* 4 (1967): 46-52.

Leiby, John S. “The Royal Indian Hospital of Mexico City, 1553-1680.” *The Historian* 57 (1995): 573-580.

León Portilla, Miguel. "Comunidades mesoamericanas ante la institución de los hospitales para indios." In *Medicina novohispana siglo XVI: historia general de la medicina en México: Tomo II*, coordinated by Gonzalo Aguirre Beltrán and Roberto Moreno de los Arcos, 217-227. México: UNAM, 1990.

Lépicard, Etienne. "Medical licensing and practice in medieval Spain: a model of interfaith relationships?" In *Medicine and medical ethics in medieval and early modern Spain.* Edited by Samuel Kottek and Luis García-Ballester, 50-60. Jerusalem: The Magres Press, 1996.

Lewis, Laura. *Hall of mirrors: power, witchcraft and caste in colonial Mexico.* Durham: Duke University Press, 2003.

Lockhart, James. *The Nahuas after the conquest: a social and cultural history of the Indians of central Mexico, sixteenth through eighteenth century* Stanford, California: Stanford University Press, 1992.

López Austin, Alfredo. *The human body and ideology: concepts of the ancient Nahuas,* 2 vols. Translated by Thelma Ortiz de Montellano and Bernard Ortiz de Montellano. Salt Lake City: University of Utah Press, 1988.

López Austin, Alfredo. *Textos de medicina Nahuatl.* 2nd ed. México: Universidad Nacional Autonoma de México, Instituto de Investigaciones Históricos, 1975.

López Austin, Alfredo and Carlos Viesca Treviño, eds. *Historia general de medicina en México: México antiguo,* vol. I. México: UNAM, Academia Nacional de Medicina, 1984.

López Piñero, José María. *Breve historia de la medicina.* Madrid: Alianza Editorial, 2000.

López Piñero, José María. *Historia de la medicina.* Madrid: Biblioteca Historia 16, 1990.

López Piñero, José María. "The medical profession in 16th century Spain." In *The town and state physician in Europe from the Middle Ages to the Enlightenment.* Edited by Andrew Russell, 85-98. Wolfenbüttel: Herzog August Bibliotek, 1981.

López Piñero, José María. *Ciencia y técnica en la sociedad española de los siglos XVI y XVII.* Barcelona: Editorial Labor, SA, 1979.

López Piñero, José María. "Tradición y renovación en la medicina española del siglo XVI." *Asclepio* 30-31 (1978-1979): 285-306.

López Piñero, José María. *Medicina, historia, sociedad: antología de clásicos médicos.* Barcelona, Ediciones Ariel: 1969.

MacLeod, Roy. "Introduction." In *Disease, medicine and empire: perspectives on western medicine and the experience of European expansion*. Edited by Roy MacLeod and Milton Lewis. London and New York: Routledge, 1988.

Machline, Vera Cecília. "Cristóbal Méndez medical ideas about the influence of joy and pleasure (rather than humour) upon health." In *Revista de Humanidades: Tecnológico de Monterrey*, número 17, Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM): 115-128. http://redalyc.uaemex.mx/pdf/384/38401706.pdf (12 November 2011)

Madsen, Claudia. *A study of change in Mexican folk medicine.* Tulane, New Orleans: Middle American Research Institute,1965.

Malvido, Elsa. "Representaciones y textos de la primera pandemia de viruela en los códices mexicanos." *Annuario Estudios Americanos* 64 (2007): 2-25.

Matos Moctezuma, Eduardo and Felipe Solís Olguín. *Aztecs.* London: Royal Academy Publications, 2003.

Maya Restrepo, Luz Adriana. "Botánica y medicina: africanas en la Nueva Granada, siglo XVII." *Historia Crítica* 19 (2000): 27-47.

McKnight, Kathryn Joy. '"En su tierra lo aprendió:' an African *curandero*'s defence before the Cartagena Inquisition." *Colonial Latin American Review* 12 (2003): 63-84.

Memarzadeh, Maher. "Medical practitioners in early colonial Mexico." PhD diss., University of California, Los Angeles, 2005.

Mörner, Magnus. *Race mixture in the history of Latin America.* Boston, Mass.: Little, Brown, 1967.

Muriel, Josefina. *Hospitales de la Nueva España, Tomo I: fundaciones del siglo XVI.* México: UNAM, Cruz Roja, 1990.

- "Los hospitales de la Nueva España en el siglo XVI." In *Medicina novohispana siglo XVI: historia general de la medicina en México, Tomo II*, coordinated by Gonzalo Aguirre Beltrán and Roberto Moreno de los Arcos, 228-254. México: UNAM, Academia Nacional de Medicina, 1990.

Naranjo, Plutarco. "On the American Indian origin of syphilis; fallacies and errors." In *Columbus and the New World: medical implications.* Edited by Guy Settipane, 33-42. Providence, Rhode Island: Ocean Side Publications, Inc., 1995.

Newson, Linda "Medical practice in early colonial Spanish America: a prospectus." *Bulletin of Latin American Research* 25 (2006): 367-391.

Newson, Linda. "Pathogens, places and peoples: geographical variations in the impact of disease in early Spanish America and the Philippines." In *Technology, disease and colonial conquests sixteenth to eighteenth centuries: essays reappraising the guns and germs theory*. Edited by George Raudzens, 167-210. Boston and Leiden: Brill Academic Publishing, 2003.

Newson, Linda and Susie Minchin. *From capture to sale: the Portuguese slave trade to Spanish South America in the early seventeenth century.* Leiden and Boston: Brill, 2007.

Nutton, Vivian. "Medicine in Medieval Western Europe 1000-1500." In *The western medical tradition 800 BC to AD 1800.* Edited by Lawrence Conrad *et al*, 139-205. Cambridge and New York: Cambridge University Press, 1995.

Nutton, Vivian "Roman Medicine, 250BC to AD200." In *The western medical tradition 800 BC to AD 1800.* Edited by Lawrence Conrad *et al*, 39-70. Cambridge and New York: Cambridge University Press, 1995.

Ocaranza, Fernando. *Historia de la medicina en México.* México: Laboratorios Midy, 1934.

Onwuanibe, Richard "The philosophy of African medical practice." *A Journal of Opinion* 9 (1979): 25-28.

Ortiz de Montellano, Bernard. *Aztec medicine, health and nutrition.* New Brunswick: Rutgers University Press, 1990.

Ortiz de Montellano. "Empirical Aztec medicine." In *Culture, curers and contagion.* Edited by Norman Klein, 209-215. California, Chandler and Sharp Publishers, 1979.

Palmer, Colin. *Slaves of the White god: Blacks in Mexico, 1570-1650.* London: Harvard University Press, 1976.

Park, Katharine. "Medicine in society and medieval Europe, 500-1500." In *Medicine in society: historical essays.* Edited by Andrew Wear, 59-90. Cambridge and New York: Cambridge University Press, 1992.

Pastor Frechoso, Félix. "La materia médica americana en Castilla." In *La medicina en el descubrimiento.* Edited by Juan Riera, 43-64. Valladolid: Universidad de Valladolid, Ediciónes del Seminario de Historia y Medicina, 1991.

Porter, R. ed. *The Cambridge illustrated history of medicine.* Cambridge: Cambridge University Press, 1996.

Prem, Hanns J. “Disease outbreaks in central Mexico during the sixteenth-century.” In *Secret judgments of god: Old World disease and colonial Spanish America.* Edited by David Noble Cook and George W. Lovell, 20-48. Norman, University of Oklahoma Press, 1991.

Prescott, William. *History of the conquest of Mexico.* London: Swan Sonnenschein and Co, 1889.

Price, Robin. “La medicina española en la edad de oro.” *Boletín mexicano de historia y filosofía de la medicina* 10 (1987): 3-12.

Quezada, Noemí. *Enfermedad y maleficio: el curandero en el México colonia.* 2nd ed. México: Universidad Nacional Autónoma de México, Instituto de Investigaciones Antropológicas, 2000.

Raudzens, George. “Introduction.” In *Technology, disease and colonial conquests sixteenth to eighteenth centuries: essays reappraising the guns and germs theories.* Edited by George Raudzens. Boston: Brill Academic publishers, 2003.

Restall, Matthew. *Seven myths of the Spanish conquest.* Oxford and New York: Oxford University Press, 2003.

Riera, Juan. “La medicina precolombina.” In *La medicina en el descubrimiento.* Edited by Juan Riera, 9-28. Valladolid: Universidad de Valladolid, Ediciones del Seminario de Histoira de Medicina, 1991.

Risse, Guenter B. “Medicine in New Spain.” In *Medicine in the New World.* Edited by Ronald Numbers, 12-63. Knoxville: The University of Tennessee Press, 1987.

Robertson, Donald. “Mexican Indian art and the Atlantic filter: sixteenth to eighteenth centuries.” In *First images of America.* Edited by Fredi Chiappelli, 483-494. Berkeley, California: University of California Press, 1976.

Rodríguez Sala, María Luisa. “Convento Real de Nuestra Señora de la Concepción, la atención médico-quirurgica de su población femenina.” *Cirugía y cirujanos* 75 (2007): 507-513. http://redalyc.uaemex.mx/pdf/662/66275616.pdf (12 November 2011)

- *Los cirujanos de hospitales de la Nueva España (siglos XVI y XVII): miembros de un estamento profesional o de una comunidad científica?* México: UNAM, Instituto de Investigaciones Sociales, 2005.

- *El Hospital Real de Los Naturales, sus administradores y sus cirujanos. ¿Miembros de un estamento ocupaciónal o de una comunidad científica?* Mexico: UNAM, Instituto de Investigaciónes Sociales, 2005.

Rojo Vega, Anastasio. *Enfermos y sanadores en el Castilla del siglo XVI.* Valladolid: Universidad de Valladolid, 1993.

Rojo Vega, Anastasio. "Exportaciónes de libros a América en el siglo XVI." In *La medicina en el descubrimiento.* Edited by Juan Riera, 65-78. Valladolid, Universidad de Valladolid, Ediciónes del Seminario de Historia y Medicina, 1991.

Rubel, Arthur J. "The epidemiology of a folk illness: *susto* in Hispanic America." In *Culture, disease and healing: studies in medical anthropology.* Edited by David Landy, 119-128. New York and London: Macmillan, 1977.

Scarre Geoffrey and John Callow. *Witchcraft and magic in sixteenth- and seventeenth-century Europe.* 2nd ed. London: Palgrave, 2001.

Schendel, Gordon. *Medicine in Mexico: from Aztec herbs to betatrons.* Austin, Texas: University of Texas Press, 1968.

Sigerist, Henry. "Foreword." In *The Badianus manuscript: (Codex Barberini, Latin 241, Vatican Library) an Aztec herbal of 1552.* Edited by Emily Walcott Emmart. Baltimore: The John Hopkins Press, 1940.

Simpson, George Eaton. *Black religions in the New World.* New York: Columbia University Press, 1978.

Siraisi, Nancy. *Medieval and early Renaissance medicine: an introduction to knowledge and practice*. Chicago: University of Chicago Press, 1990.

Slotkin, J.S. "Peyotism, 1521-1891." *American Anthropologist* 57 (1955): 202-230.

Somolinos d'Ardois, Germán. "Los médicos y los cirujanos." In *Medicina novohispana siglo XVI: historia general de la medicina en México: Tomo II*, coordinated by Gonzalo Aguirre Beltrán and Roberto Moreno de los Arcos, 279-294. México: UNAM, 1990.

Somolinos d'Ardois, Germán. *Capitulos de historia medica mexicana: el fenómeno de fusión cultural y su trascendencia médica*. México: Sociedad Mexicana de Historia y Filosofía de la Medicina, 1979.

Somolinos d'Ardois, Germán. *El cirujano López de Hinojosos, su obra quirurgica y la Compañia de Jesus,* 525-576. México: Editorial Sur, 1975.

Somolinos Palencia, Juan. "Suma medica de dos mundos." In Pedro Arias de Benavides, *Secretos de cirugía*, 1-17. México: Academia Nacional de Medicina, 1992.

Somolinos Palencia, Juan. "Cristóbal Méndez: médico y científico del siglo XVI." *Boletín de la sociedad mexicana de historia y filosofía de la medicina* 6 (1982): 43-47.

Soustelle, Jacques. *The daily life of the Aztecs on the eve of conquest.* Translated by Patrick O'Brian. Stanford, California: Stanford University Press, 1961.

TePaske, John Jay "Regulation of medical practitioners in the age of Francisco Hernández." In *Searching for the secrets of nature: the life and works of Doctor Francisco Hernández.* Edited by Simon Varey, Rafael Chabrán and Dora B. Weiner, 55-64. Stanford, California: University of Stanford Press, 2000.

Ugent, Donald. "Medicine, Myths and magic: the folk healers of the Mexican market." *Economic Botany* 52 (2000): 427-438.

Varey, Simon Rafael Chabrán and Dora Weiner, eds. *Searching for the Secrets of Nature: The Life and Works of Dr. Francisco Hernández.* Stanford, California: Stanford University Press, 2000.

Venegas Ramírez, Carmen *Régimen hospitalario para indios en la Nueva España.* México: Instituto Nacional de Antropología y Historia, Departamento de Investigaciones Históricas, 1973.

Viesca Treviño, Carlos. "*Curanderismo* in Mexico and Guatemala: its historical evolution from the sixteenth to the nineteenth century." In *Mesoamerican Healers.* Edited by Brad Huber and Alan Sandstrom, 47-65. Austin, Texas: University of Texas, 2001.

Viesca Treviño, Carlos. "Antecedentes para el estudio de la clasificación de las enfermedades en la medicina Náhuatl prehispánica." *Estudios de cultura Náhuatl* 30 (1999): 183-201.

Viesca Treviño, Carlos. "Los médicos indígenas frente a la medicina europea." In *Medicina novohispana siglo XVI: historia genera de la medicina en México: Tomo II*, coordinated by Gonzalo Aguirre Beltrán and Roberto Moreno de los Arcos, 132-153. México: UNAM, 1990.

Voeks, Robert. *Sacred leaves of Candomblé: African magic, medicine and religion in Brazil.* Austin, Texas: University of Texas Press, 1997.

Voeks, Robert. "African medicine and magic in the Americas." *Geographical Review* 83 (1993): 66-78.

Wangensteen, Owen and Sarah Wangensteen, *The rise of surgery: from empiric craft to scientific discipline.* Folkstone, Kent: Dawson, 1978.

Watts, Sheldon, *Epidemics and history: disease, power and imperialism.* New Haven and London: Yale University Press, 1997.

Wear, Andrew. "Medicine in early modern Europe, 1500-1700." In *The western medical tradition 800 BC to AD 1800.* Edited by Lawrence Conrad *et al.*, 215-362. Cambridge: Cambridge University Press, 1995.

Wear, Andrew Roger French and Iain Lonie, eds. *The medical renaissance of the sixteenth century*. Cambridge and New York: Cambridge University Press, 1985.

Zedillo, Antonio. *Historia de un hospital: el Hospital Real de los Naturales.* México: Instituto Mexicano de Seguro Social, 1984.