**Applying models of co-production in the context of health and wellbeing. A narrative review to guide future practice**

**Abstract**

*Background*: Recent years have seen a dramatic growth in interest in the nature and extent of co-production in the health and social care sectors. Due to the intense proliferation of work on co-production, there is intense variation in practice in how co-production is defined, understood and used in practice. *Methods*: We conducted a narrative review to explore, and provide an overview of, which models of health and social care co-production have been developed, applied and critiqued over the last few decades. *Results*: Seventy-three peer reviewed articles met our inclusion criteria. In this set of articles, we identified three broad types of models: conceptual/theoretical; practice-oriented; and presenting a typology. We found that practice-oriented models, predominantly from the Health Services Research and Quality Improvement literature, had largely not drawn on conceptual/theoretical models from the disciplinary fields of Public Administration & Management and Sociology. In particular, they have largely neglected theoretical perspectives on relationships and power and agency in co-production work, as well as the concepts of Service-Dominant Logic and Public Service-Dominant Logic as ways to think about the joint, collaborative process of producing new value, particularly in the context of the use of a service. *Conclusion*: Our review has identified distinct literatures which have contributed a variety of models of health and social care co-production. Our findings highlight under-explored dimensions of co-production that merit greater attention in the health and social care contexts. The overview of models of co-production we provide aims to offer a useful platform for the integration of different perspectives on co-production in future research and practice in health and social care.

Keywords: co-production; narrative review; models.

**Introduction**

Co-production is an umbrella term used to refer to the collaborative nature of work and particularly how the interactions between providers and users of a service are intrinsically linked to the value and outcomes of that service.[1] Recent years have seen a dramatic growth in interest in the nature and extent of co-production in the health and social care sectors.[2] As part of a 6-year international research programme,[3] here we explore what models of co-production have been developed and whether (and how) they have been applied in the contexts of health and social care.

Interest in co-production has waxed and waned over the past five decades. Today there are multiple, and sometimes contested, definitions, which has led to co-production being described as a ‘fragmented set of activities, expectations and rationales’ used in various ways.[4] Such ambiguities as to what constitutes co-production have led to significant variations in practice. What unites many is a recognition that users create value through their interaction with services and that organisations co-produce this with them.[5-7] Our aim is to review any models developed, applied and/or critiqued in the context of the coproduction of health and wellbeing which may be helpful in considering future practices in these sectors.

**Methods**

We conducted a narrative review of articles discussing models of co-production in health and social care. Our systematic search strategies and methods are detailed in full elsewhere.[2] These searches generated a subset of 979 records which: referred to or included co-production or codesign; had a focus on or connection with health and social care; involved community members, patients or users of services in the co-production/codesign work discussed. Authors xx and yy screened titles and abstracts of these 979 publications to establish how many of these were potentially relevant to the identification of models. As well as conference papers, they excluded articles that: did not include a model of co-production/codesign; dealt exclusively with co-production of research; were practical applications of a codesign model with no further development of that model. In identifying the relevant literature to include in the review, we adopted a broad definition of ‘model’, focusing on whether a publication offered a conceptual or practical analysis of co-production in ways that aimed to organise, describe, link, and/or critique its dimensions. xx and yy discussed all publications for which they were uncertain about inclusion and finalised a list of 129 publications for full-text examination. They developed, agreed and used an extraction table to facilitate data management. The data extraction process led to the identification of 73 articles for inclusion in the review. Quality appraisal did not determine inclusion. All selected articles were read in depth to identify broad overarching themes. We categorised the articles as primarily offering: conceptual/theoretical models (providing theoretical insights and/or conceptual links with the aim of better understanding and/or explaining co-production principles and mechanisms); practice-oriented models (offering guidance for practical implementation of co-production, e.g. as toolkits, analysis of barriers and facilitators, ‘tips’ for practice); typology models (mapping and/or classifying different forms or features of co-production).

We found this classification practically useful and use it here for ease of reference. However, we also acknowledge that classifications have the potential to mislead. These categories are not intended to suggest that these types of models are independent of one another. We are also mindful that no orientation of practice can exist in the absence of theoretical developments and no typology would be needed if there was no proliferation of conceptual and practical implications of co-production experiences.

**Results**

Of the 73 articles reviewed, 42 (58%) offered some level of theorisation to explain co-production, whether producing or drawing upon specific theories, or making conceptual links that amounted to theorisation. Twenty-two (30%) papers were primarily practice-orientated in that they highlighted implications for health and/or social care practice, identified barriers and/or facilitators to practising co-production in this context or focused on context-specific approaches to co-production (e.g. the Recovery Model in community mental health care[8]). Seven (10%) papers primarily provided a typology relating to the different forms and/or nature of coproduction. Finally, two articles (3%) cut across the boundaries of our mapping. Below we provide brief overviews of the literature we reviewed relating to each of the three discrete types of models. Because of the large number of sources identified, we only cite illustrative studies as they relate to a particular theme.

*Conceptual/theoretical*

The 43 largely conceptual/theoretical papers drew upon a variety of theories and analytical lenses. In terms of disciplinary perspectives, the largest number of papers related to Public Administration & Management (PAM) and sociology. Within PAM, publications centred on governance, value co-creation (informed by Service-dominant logic -SDL- and Public Service-dominant logic -PSDL), and community-based co-production. Within sociology, publications centred on social relations -including structure-agency configurations, symbolic and social boundaries, and inclusion- and power. There were contributions also from the fields of philosophy, service research and co-design.

Governance in the PAM literature

We found that the predominantly conceptual/theoretical models tended to discuss configurations of relationships brought about by or characterising co-production. These elaborations referred to governance relationships between citizens and state, different government tiers, and multi-actor governance settings, although some focussed on power relations, the epistemological dimension of co-production interactions, and on the community relations that are most conducive to co-production. For example, Meijer views co-production as an amendment to the existing division of roles and responsibilities between citizens and the state.[9] The author argues that co-production of public services has the potential to lead to a configuration of governance in which not only do citizens provide resources and legitimacy to the state in exchange for the protection of their rights but also, increasingly, provide their time, effort and knowledge through practices of co-production. Looking more specifically at relationships between organisational entities involved in co-production, Sicilia et al. explore the conditions that can help to spread co-production along the whole range of actors, government tiers, organizations, and phases that occur in the cycle of public services in multi-level and multi-actor governance settings based on a case study of services for autistic children in Lombardy, Italy.[10] Other authors, like Fledderus et al., focus on specific dimensions of the relationships of co-production dynamics such as trust.[11]

Value co-creation in the PAM literature

The articles exploring the value co-creation (or co-destruction) in co-production were grounded in an understanding of SDL as a logic in which value is co-created by a service organisation and a customer benefitting from each other.[12-13] Central to SDL - and to its extension to public service dominant logic (PSDL) - is the tenet that users of a service inherently co-produce the service, therefore contributing (whether voluntarily or involuntarily) to value co-creation and/or co-destruction.

Focusing on co-production in public services and drawing upon earlier work, [14-16] Osborne et al. present a framework to understand the types of value “that are co-created in public service delivery by the iterative interactions of service users and service professionals with public service delivery systems” and the forms of co-production that correspond to them.[17] Alford et al. also ground their conceptual analysis in Osborne and colleagues’ earlier work on PDSL and further explore how public services are different from other services and therefore how the extent of co-production and value co-creation may vary in relation to the ‘publicness’ of a service.[18]

Jaspers and Steen examine a case of co-production of social care and tease out the value tensions for different groups of participants: public servants, steering committee members, and the citizen-co-producers.[19] Finally, from a service design perspective, McColl-Kennedy et al. They examine data from two oncology centres to look at what people actually do in practice to co-create value, proposing a matrix of different value co-creation practice styles.[20]

Community-based co-production: PAM and community engagement literature crossovers

Pestoff’s work links themes that are more commonly found in the PAM literature and those concerning more practice-orientated studies of community organising/engagement (see below). Pestoff suggests that organised collectives will increasingly have a key role to play in the sustained co-production of public services and that this should encourage ways to organise with a view to promoting/advocating for co-production. [21-22] Sancino, too, focuses on public outcomes at the community level and argues that local government should play a meta co-production role because community outcomes result from a sum of peer production, co-production and inter-organizational collaboration across the public, third and private sectors. [23]

Social relations of co-production and power: sociological perspectives

Sociologically oriented work makes an important contribution to understanding the power relations of co-production. For example, one ethnographic study of community mental health services in two Danish municipalities, in which co-production formed the framework for psychosocial rehabilitative mental health services, [24] – drew on a relational sociological perspective,[25] and on Goffman’s work on everyday interactions.[26] In this work, the authors explore how participants translated co-production into everyday interactions and argue that the blurring of categories (i.e. users, volunteers, professionals) which takes place in co-production projects needs to have some correspondence in the social boundaries between categories for the efforts to be generative.[24] Rutten et al. also draw upon sociological concepts of structure and agency and explore the co-production of active lifestyles in four sub-projects of a publicly funded German health promotion research network.[27] Research exploring the role of community health workers in developing countries, shows that a collaborative environment and a mobilised community facilitate the start-up and sustainability of co-production.[28]

*Practice-oriented*

We mapped 20 of the 73 papers to be primarily practice-oriented models. Eight of these explore barriers and facilitators to the co-production of health and/or social care, offering tips and suggestions for ‘how to’ co-produce health and/or social care. For example, a study exploring the ‘health practices’ of co-production in three HIV clinics in New York highlighted the significance of predicted and unpredictable activities and that relationships, defined in several ways, are critical to patients’ activities, both within and beyond service settings. [29] These authors suggest patients and providers could work together at planning stage and identify the kinds of activities performed by everyone to coproduce services, thus infusing ‘normal’ coproduction with programmatic commitment into the clinical everyday as much as possible.

Five papers were practice-oriented with a focus on community organising. As an example, Bolton et al. report on an innovative approach to community engagement using the community-organizing methodology (a broad-based model of community organizing that involves benefitting from social capital in civic institutions), applied in an intervention of social support to increase social capital, reduce stress and improve well-being in mothers who were pregnant and/or with infants aged 0–2 years.[30] The approach involved working with local member civic institutions in south London to facilitate social support to a group of 15 new mothers. In this study, community control had the outcome that the original general idea of providing social support evolved to include other components, particularly health educational workshops. There were also signs that the intervention had intended effects on some key outcomes of interest, specifically increases in social capital at least of a circumscribed kind associated with the project, and a decrease in levels of maternal distress. [30]

*Typologies*

Eight of the reviewed articles primarily tried to organise thinking around co-production through the development of a typology. All these categorisations had something to offer in relation to how we understand co-production and how different services may approach it. For example, Nabatchi and colleagues explain the origins of the term, the various definitions that exist and propose a typology that combines ‘levels’ of co-production (which the authors identify as individual, group, collective) and ‘type’ of co-production in relation to the specific phase of the service it concerns (which for the authors are essentially co-commissioning, co-designing, co-delivering, co-assessing).[31] Adinolfi et al. configure their typology around two dimensions: the ‘breadth’ of the recognised health-related needs and the ‘intensity’ of health care co-production, using the case of a personalised health budgets programme in Italy to illustrate their approach.[32] Drawing on both the service management and public administration literature around co-production,[33] Strokosch and Osborne present a more complex mapping of co-production.[34] They argue that these two different bodies of literature offer useful perspectives on co-production and suggest that they can be combined to arrive at the identification of three fundamental modes of co-production for the individual service user – consumer, participative and enhanced.[34]

Closer to the boundary between the typology group of papers reviewed and those more directly aimed at guiding practice, is a paper presenting a “roadmap” which identifies different groups of people who can potentially be involved in co-production, the outcomes the initiative can be aimed at, the activities in which participation can take place, and the indicators intended to document each outcome.[35]

*Boundary-spanning papers*

Two articles set out to attend to all three aspects - conceptual/theoretical, practice-oriented, and typology - almost equally. We therefore explore each of these in more detail below.

Essén et al. offer a conceptual model offered based on a qualitative empirical study of a long-term co-production process in rheumatology care in Sweden. [36] Writing from management and marketing perspectives, the authors examine people’s interaction with a Patient Self-Registration (PER) service to explain how the ostensive and performative dimensions of co-production may lead to exploitation or empowerment of service users. Based on the findings that some patients felt ‘exploited’ (in terms of feeling obliged to carry out the task to save time for healthcare professionals rather than for any personal benefit) and others patients claimed to feel ‘empowered’ (in terms of acquiring knowledge about their health condition and better understanding of how practitioners operate, and feeling that their lay expertise is valued), the authors represent these findings in a new model. They also present a typology for ‘unpacking a co-production process’ and offer lessons for practice.

The second paper to span all three model types is by Batalden and colleagues.[37] As well as presenting a conceptualisation of co-production in the context of healthcare Quality Improvement and Health Services Research, this paper also offers ‘how to’ suggestions and guiding principles for practice, as well as an overview of ‘challenges and limitations’. In keeping with SDL, the authors’ argument is that healthcare is a service which is cocreated by healthcare professionals in relationship with one another and with people seeking help to restore or maintain health for themselves and their families. This partnership is facilitated or hindered by many forces operating at the level of the healthcare system and the wider community. The authors illustrate key features of the model’s implications and limitations by discussing its application as a ‘design principle’ to three healthcare service delivery innovations and identify four implications for practice.

**Discussion**

An observation in our review was the limited sharing of ideas and concepts between different bodies of scholarly work. Such sharing mainly occurred in the subset of articles which drew a link between PAM and the community organizing/engagement literatures. This, in our view, raises another important question, one around how co-production is viewed in relation to the system in which it is enacted. Whilst QI and HSR studies largely view co-production as potentially changing systems from within, the community organising literature sees co-production as being a force for change which act upon systems from the outside. Stewart’s recent sociologically-informed work presents a model of ‘fugitive co-production’ - where individuals and groups within communities collaborate with local healthcare staff in ways which significantly shape the provision of local services, without permission or authorisation from relevant authorities – which offers a potentially rich avenue for further research relating to power and agency.[38]

 Within the practice-oriented literature offering models of co-production in particular, we also note a lack of critical engagement with theories relating to considerations of value (albeit with rare recent exceptions in work not concerned with models [39]); and the under-theorising of social relationships and interactions, particularly around power and agency, in HSR and QI work. Whilst there is little consensus about the nature, meaning and measurement of value in the specific contexts of health and social care, the discussion of value co-creation (and also co-destruction) as a fundamental aspect of co-production was a central feature in only a few of the articles reviewed. Traditional understandings of value in healthcare are based on economic calculations of outcomes relative to costs, thus encompassing dimensions such as efficiency.[40] In this perspective, standard sets of outcomes for each medical condition are key to accelerating value improvement.[41] In the context of co-production, however, the understanding of value is more complex, extending to interactional and experiential dimensions of services. Value, then, is inherently tied to the experiences of ‘beneficiaries’ of service, and therefore contextual and meaning-laden.[13, 42] With the notable exception of Batalden and colleagues’ work,[37, 43] the literature on HSR and QI does not really approach co-production in terms of ‘value-in-use’, or of the inherently co-produced nature of all public services from a SDL/PSDL perspective, as widely discussed and commonly accepted in PAM scholarship. It may be that the language around value and integration of resources is relatively unfamiliar outside of PAM disciplinary boundaries. This observation raises an important question: what are the implications for mainstream discussions and practices of co-production in health and social care of the lack of a sophisticated understanding of what counts as ‘value’ in this context?

**Conclusion**

We found that most of the articles which conceptualised and/or theorised co-production in relation to health and social care were published in the PAM literature, although there were instances where scholars in this field had also distilled lessons to orient practice. The HSR and QI scholarship more commonly described the ‘how to’ of co-production and/or the barriers and facilitators to realising co-production the context of health care service improvement, but largely neglected theoretical considerations of value and of social relationships and interactions. We hope that this overview of approaches to configuring ‘models’ of co-production in health and social care will be of translational relevance and help bridge understandings of ‘value’ and relationships in co-production in different scholarly traditions that have much to offer to one another.

*Author contributions*: all authors participated substantially in the conception and design of the work. GR and SD led the execution of the work and analysis of the data. With other authors, DM provided contribution to methodology and writing the method section. All authors contributed to the writing of the manuscript and approved the final version.

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*Data availability statement*: the data underlying this article will be shared on reasonable request to the corresponding author.

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Supplementary file 1. Search strategy for each database from Masterson et al. (2022).

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| --- |
| **Search terms to be included in title, abstract or key words**  |
| (Co-produc\* OR coproduc\* OR co-design\* OR codesign\*) **AND** (health OR social OR "Public Service\*" OR “public sector”) **AND NOT** (engineer\* OR biomass OR bioproduct\* OR osmosis OR microalgae OR ecosystems OR hydrogen OR Brand OR Algebra) |

**CINAHL with Full Text (EBSCOHost) – 588 hits on March 18, 2019**

TI ( ( co-produc\* OR coproduc\* OR co-design\* OR codesign\* ) AND ( health OR social OR “public service\*” OR “public sector\*” ) NOT ( engineer\* OR biomass OR chemic\* OR bioproduct\* OR osmosis OR microalgae OR ecosystems OR hydrogen OR brand OR algebra ) ) OR AB ( ( co-produc\* OR coproduc\* OR co-design\* OR codesign\* ) AND ( health OR social OR “public service\*” OR “public sector\*” ) NOT ( engineer\* OR biomass OR chemic\* OR bioproduct\* OR osmosis OR microalgae OR ecosystems OR hydrogen OR brand OR algebra ) )

**Limiters** - Peer Reviewed; English Language

**Cochrane Central Register of Controlled Trials (Wiley) – 47 hits on March 19, 2019**

(co-produc\* OR coproduc\* OR co-design\* OR codesign\*):ti,ab,kw AND (health OR social OR “public service\*” OR “public sector\*”):ti,ab,kw NOT (engineer\* OR biomass OR chemic\* OR bioproduct\* OR osmosis OR microalgae OR ecosystems OR hydrogen OR brand OR algebra):ti,ab,kw

**MEDLINE (EBSCOHost) – 793 hits on March 18, 2019**

TI ( ( co-produc\* OR coproduc\* OR co-design\* OR codesign\* ) AND ( health OR social OR “public service\*” OR “public sector\*” ) NOT ( engineer\* OR biomass OR chemic\* OR bioproduct\* OR osmosis OR microalgae OR ecosystems OR hydrogen OR brand OR algebra ) ) OR AB ( ( co-produc\* OR coproduc\* OR co-design\* OR codesign\* ) AND ( health OR social OR “public service\*” OR “public sector\*” ) NOT ( engineer\* OR biomass OR chemic\* OR bioproduct\* OR osmosis OR microalgae OR ecosystems OR hydrogen OR brand OR algebra ) )

**Limiters** – English Language

**PsycINFO (ProQuest) – 403 hits on March 18, 2019**

ti((co-produc\* OR coproduc\* OR co-design\* OR codesign\*) AND (health OR social OR "public service\*" OR "public sector\*") NOT (engineer\* OR biomass OR chemic\* OR bioproduct\* OR osmosis OR microalgae OR ecosystems OR hydrogen OR brand OR algebra)) OR ab((co-produc\* OR coproduc\* OR co-design\* OR codesign\*) AND (health OR social OR "public service\*" OR "public sector\*") NOT (engineer\* OR biomass OR chemic\* OR bioproduct\* OR osmosis OR microalgae OR ecosystems OR hydrogen OR brand OR algebra))

**Limits** – Peer reviewed; Language: English

**PubMed (legacy) – 898 hits on March 18, 2019**

Search (((co-produc\*[Title/Abstract] OR coproduc\*[Title/Abstract] OR co-design\*[Title/Abstract] OR codesign\*[Title/Abstract])) AND (health[Title/Abstract] OR social[Title/Abstract] OR “public service\*”[Title/Abstract] OR “public sector\*”[Title/Abstract])) NOT (engineer\*[Title/Abstract] OR biomass[Title/Abstract] OR chemic\*[Title/Abstract] OR bioproduct\*[Title/Abstract] OR osmosis[Title/Abstract] OR microalgae[Title/Abstract] OR ecosystems[Title/Abstract] OR hydrogen[Title/Abstract] OR brand[Title/Abstract] OR algebra[Title/Abstract])

**Filters:** English

**Scopus (Elsevier) – 2462 hits on March 18, 2019**

( TITLE-ABS ( co-produc\* OR coproduc\* OR co-design\* OR codesign\* ) AND TITLE-ABS ( health OR social OR "public service\*" OR "public sector\*" ) AND NOT TITLE-ABS ( engineer\* OR biomass OR chemic\* OR bioproduct\* OR osmosis OR microalgae OR ecosystems OR hydrogen OR brand OR algebra ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) )

**Supplementary file 2 Included articles: Conceptual/theoretical models (n=42)**

| **First author, year** | **Author country** | **Discipline** | **Contribution of conceptual/theoretical model** |
| --- | --- | --- | --- |
| Andreasson, 2017 | Norway | Social policy | Illustrates how thinking about the institutional logics underpinning different models of citizen involvement can highlight key distinctions between different types of involvement in health and social care |
| Boccacin, 2017 | Italy | Sociology | Represents interactions between (a) multi-dimensionality of personal needs (b) activities, services and practices, and (c) social complexity. Highlights importance of social relations (partnerships) that unite resources and expertise |
| Bracci, 2014 | UK | Management | Explores how different forms of accountability and roles of different actors change when social services are coproduced, i.e. who is to accountable to whom, for what, and by what means |
| Cepiku, 2014 | Italy | Public administration | Shows how a collaborative environment and a mobilized community facilitate the start up and sustainability of coproduction |
| Cramm, 2016 | The Netherlands | Health policy | Demonstrates how quality of services provided to patients with chronic care needs is closely related to relational coproduction of care (interdependencies between healthcare professionals and patients in terms of (a) goal-setting and (b) treatment choices) |
| De Couvreur, 2013 | Belgium | Design | Theorises ‘co-experience’ and ‘making together’ in context of participatory design projects, and identifies conditions to enable these processes |
| Farmer, 2018 | Australia | Health policy | Social innovation theory as an analytical frame for analysing and improving community coproduced healthcare initiatives |
| Farr, 2015 | UK | Sociology | Theorises and analyses different processes of coproduction and value cocreation at a strategic level |
| Fledderus, 2014 | The Netherlands | Public management | Identifies specific forms of trust that are fostered through coproduction, through specific mechanisms and under specific conditions. Also highlights conditions which may hinder as well as encourage these mechanisms |
| Fledderus 2015a | The Netherlands | Public management | Organizational support and user commitment shown to be important conditions for building trust |
| Fledderus, 2015b | The Netherlands | Public management | Suggests the need of organisations to reduce uncertainty caused by coproduction diminishes the possibilities for users to coproduce |
| Glynos, 2012 | UK | Public management | Draws distinction between additive (choice-based) and transformative (recognition-based) forms of coproduction, and how these link to broader notions of social justice |
| Haynes, 2019 | Australia | Health Services Research | A logic model providing a theory of change relating to empowerment mechanisms within a Community Based Participatory Action Research approach |
| Heaton, 2016 | UK | Health Services Research | Examines processes of knowledge creation and translation in applied health services research through lens of coproduction |
| Jakobsen, 2013 | Denmark | Public administration | Illustrates how citizen coproduction is moderated by motivation (need for a service), being invited and allowed to participate and time available |
| Jaspers, 2019 | Belgium | Public management | Describes and explains the value tensions experienced by different stakeholders and how these are managed and/or resolved |
| Kirkegaard, 2018 | Denmark | Social sciences | Explains the mechanisms underlying the occurrence (or lack) of a blurring of boundaries between social role/power positions when coproduction materialised as an organisational intervention to blur boundaries between participant categories |
| Laitinen, 2017 | Finland | Management | Understanding of co-design as a social learning/action learning process |
| Laitinen, 2018 | Finland | Management | Explores how and in what form New Public Governances emerge during service integration processes, highlighting importance of trust, role of middle managers and learning ability in shaping extent and form of emergent governances |
| Lindsay, 2018 | UK | Public management | Demonstrates how co-governance and co-management are important facilitators of user coproduction, and distinguishes coproduction from the norms of New Public Management |
| Lindsay, 2018 | UK | Public management | Represents ways in which citizens and the third sector cooperate and collaborate with the public sector through co-governance and co-management |
| Macaulay, 2016 | UK | Health Services Research | Investigates co-governance and co-management of health services between the public sector and social enterprises |
| McColl-Kennedy, 2012 | Australia | Marketing | Matrix of customer value co-creation practice styles linked to desired outcomes (e.g. quality of life) |
| Marks, 2005 | US | Social welfare | Views coproduction as a transaction-based model but within a community strengthening frame |
| Meijer, 2016 | Netherlands | Public management | Relates coproduction to New Public Governance and ways of understanding social contracts between citizens and the state |
| Osborne, 2016 | UK | Public management | Provides a heuristic for understanding and locating coproduction activities and value creation/destruction from Service-Dominant Logic perspective |
| Owens, 2012 | UK | Philosophy  | Offers stratified conception of health (as per critical realism) as means to avoid reductionism and conflicting dualisms in coproduction efforts |
| Palmer, 2018 | Australia | Health Services Research | Theorises on mechanisms of coproduction drawing on narrative theory and epistemic justice, ialogical ethics and narrative contract, cooperative theory, empowerment and design theories |
| Perrott, 2013 | Australia | Marketing | Explores role and value of codesign from a Service-dominant logic perspective |
| Pestoff, 2012 | Sweden | Management | Proposes that organised collectives (e.g. third sector) have an important role in coproduction of public services and suggests ways to organise with a view to advocating/promoting coproduction |
| Pestoff, 2014 | Sweden | Management | Explores what makes coproduction sustainable in the provision of public services with focus on contribution of collective action |
| Redwood, 2016 | UK | Health Services research | Explores the coproduction of healthcare knowledge within the wider economy and how organisational models can facilitate this |
| Rütten, 2019 | Germany | Public health/health promotion | Explores the interactions between four main social actors – research, professionals, policymakers and population groups – and proposes a model for these interactions from which models for interventions are developed |
| Sancino, 2016 | UK | Management | Considers institutional, managerial and organisational implications of coproduction which call for new roles for public managers |
| Sharma, 2016 | Australia | Health Services Research | Maps the key values and behaviours for cocreation in healthcare from a Service-dominant logic perspective |
| Sicilia, 2016 | Italy | Management | Covers coproduction in entire service cycle and from multi-level perspective, suggesting coproduction is prompted by inter-organisational arrangements and that trust-building among actors is pivotal |
| Spanjol, 2015 | US | Marketing | Provides a model for understanding coproduction (in the form of medication adherence) from a behavioural perspective |
| Tuurnas, 2015 | Finland | Management | Explores how complex network structures interact with the coproduction process and how these can be managed in a service delivery system |
| Verschuere, 2012 | Belgium | Public administration | Distinguish three broad frameworks for conceptualising the relationship between government and nonprofit sectors and relate these to the why, how and effects of corproduction |
| Voorberg, 2014 | The Netherlands | Public administration | Explores the types, objectives, outcomes and conditions under which cocreation and coproduction with citizens take place in innovation processes in the public sector |
| Waller, 2017 | UK | Public administration | Offers a model for public policy intervention design and the role of government when governmental and non-governmental actors combine to achieve a social outcome |
| Williams, 2016 | US | Public administration | Explores the public value challenges associated with coproduction and illustrates process of co-contamination in which public values are negatively impacted as a consequence of activities by regular producers and users |

**Supplementary file 3 Included articles: practice-oriented models (n=22)**

| **Author, Year** | **Country of author** | **Discipline** | **Guidance for practitioners** |
| --- | --- | --- | --- |
| Baim‐Lance, 2019 | US | Public Health/Health Policy | Suggests to intentionally elevate and integrate co-delivery, improvement planning should include explicit acknowledgement of patients pre-existing and ongoing actions and insights (‘normal’ coproduction) |
| Barrett, 2014 | UK | Sociology | Describes the experiences of a self-organising group of mental health service users as a social movement approach to co-production |
| Bolton, 2016 | UK | Community organizing/psychology | Describes an innovative approach to community engagement using the community-organising methodology |
| Bruce, 2011 | UK | Third sector | Summary of lessons from community involvement in design and delivery of integrated health and wellbeing services |
| Chisholm, 2018 | UK | Health Services Research | Presents barriers and facilitators to implementation of ‘Experience-based Co-design’ approach |
| de Andrade, 2016 | UK | Social justice | Offers a social justice framework to structure thinking and practice around coproduction with seldom heard groups |
| Doherty, 2006 | US | Health Services Research | Presents set of core principles for implementing a Citizen Healthcare Project aiming to configure healthcare production as horizontally as possible |
| Farmer, 2017 | Australia | Primary care | A roadmap to help practitioners and managers to align participants, activities and desired effects with appropriate outcome indicators that can be assessed quantitatively |
| Farr, 2018 | UK | Sociology/Health Services Research | Illustrates how service coproduction theory can support patients to co-implement a technology |
| Gillard, 2016 | UK | Health Services Research | Presents advantages and challenges of a social movement, network type approach to peer support |
| Jagri, 2017 | Ghana | Development Studies | Presents advantages and challenges of a community-based and volunteer-led service delivery point |
| Kayser, 2018 | Denmark | Health Informatics | Presents a step-by-step process to design digital applications, tools and techniques including consideration of traditionally under-served or marginalised individuals and communities |
| Koivisto, 2015 | Finland | Public management | Explores a systemic innovation model (web-based, open and collaborative) and its translation into public sector innovation practice in the health and welfare sector |
| Locock, 2014a | UK | Health Services Research | Describes use of a national video and audio archive of patient experience narratives within a rapid patient-centred service improvement approach called ‘Accelerated Experience-based Co-design’ |
| Locock, 2014b | UK | Health Services Research | Reports on an evaluation of a rapid patient-centred service improvement approach called ‘Accelerated Experience-based Co-design’ |
| Nicol, 2011 | UK | Health Services Research/Health policy | Outlines a health leadership model that encompasses both a clinical and citizen/user perspective |
| Ottmann, 2011 | Australia | Nursing | Describes and reflects on an action research-inspired coproduction process, highlighting obstacles and potential as well as lessons learnt |
| Ridente, 2016 | Italy | Mental health | Describes and investigates the use of personal health budgets to support the social integration of people with mental illness |
| Robert, 2015 | UK | Health Services Research | Outlines the ‘Experience-based Co-design’ approach as a form of healthcare quality improvement and highlights strengths and weaknesses through case studies |
| Seid, 2018 | US | Health Services Research | Sets out the steps needed to be taken to co-design a Collaborative Chronic Care model |
| Szkuta, 2014 | Spain | Information Technology | Explores the main features of collaborative e-government and illustrates different ways in which e-coproduction can work |
| Yokota, 2018 | India | Transdisciplinary | Identifies key factors that shape effective co-design and co-production in context of service delivery in LMICs |

**Supplementary file 4 Included articles: typology (n=7)**

| **First author, year** | **Country of author** | **Discipline** | **Typology** |
| --- | --- | --- | --- |
| Adinolfi, 2016 | Italy | Organizational studies | For mapping (a) intensity of co-production and (b) breadth of service provision |
| Alford, 2016 | Australia | Public management | Types of co-productive contributions by citizens and service users |
| Bovaird, 2016 | UK | Public administration | Individual and collective coproduction |
| Brandsen, 2015 | The Netherlands | Public administration | Types of coproduction can be distinguished based on the extent to which citizens are involved in the design of services that they individually receive and whether the coproduction concerns core services of the organization or complementary activities |
| Linders, 2012 | US | Public administration | A typology for IT-supported co-production of government services |
| Nabatchi, 2017 | International | Public administration | Typology involving three levels (individual, group, collective) and 4 types (co-commissioning, co-designing, co-delivering, co-assessing) |
| Strokosch, 2016  | UK | Public administration/service management  | Classification of (a) consumer co-production (inherent to services and inevitable), (b) participative co-production, and (c) enhanced coproduction  |