

# From programme theory to logic models for multispecialty community providers: a realist evidence synthesis

Rod Sheaff,<sup>1\*</sup> Sarah L Brand,<sup>2</sup> Helen Lloyd,<sup>3</sup>  
Amanda Wanner,<sup>3</sup> Mauro Fornasiero,<sup>3</sup> Simon Briscoe,<sup>4</sup>  
Jose M Valderas,<sup>4</sup> Richard Byng<sup>3</sup> and Mark Pearson<sup>4</sup>

<sup>1</sup>School of Law, Criminology and Government, University of Plymouth, Plymouth, UK

<sup>2</sup>Y Lab Public Service Innovation Lab for Wales, School of Social Sciences, Cardiff University, Cardiff, UK

<sup>3</sup>Community and Primary Care Research Group, Peninsula Schools of Medicine and Dentistry, University of Plymouth, Plymouth, UK

<sup>4</sup>NIHR CLAHRC for the South West Peninsula (PenCLAHRC), Institute of Health Research, University of Exeter Medical School, Exeter, UK

\*Corresponding author [R.Sheaff@plymouth.ac.uk](mailto:R.Sheaff@plymouth.ac.uk)

**Declared competing interests of authors:** none

Published June 2018

DOI: 10.3310/hsdr06240

## Scientific summary

### Multispecialty community providers: realist evidence synthesis

Health Services and Delivery Research 2018; Vol. 6: No. 24

DOI: 10.3310/hsdr06240

NIHR Journals Library [www.journalslibrary.nihr.ac.uk](http://www.journalslibrary.nihr.ac.uk)

# Scientific summary

## Background

Multispecialty community providers (MCPs) are proposed as a means by which the English NHS can reduce demand pressures on hospitals and general practices while improving the quality, especially in terms of continuity, of care for people with complex, chronic or multiple health problems, all the while contributing substantial savings to the NHS budget. This policy rests on a complex set of assumptions about what mechanisms will achieve these ambitious and complex policy outcomes, and in what contexts. The proposed mechanisms include new NHS organisational structures, working practices and interorganisational collaboration. The purpose of this realist synthesis was to elicit an initial programme theory (IPT) about MCPs from policy-makers' assumptions and to use secondary evidence to evaluate which parts of the IPT are supported by evidence, under which conditions and for which populations. We also identify which parts are not supported by evidence. From that, we propose revisions to the IPT. The revisions yield a more fully evidence-based logic model for achieving the policy outcomes that MCPs are intended to achieve.

## Objectives

We addressed the following research questions:

1. How do policy-makers and top NHS managers predict that MCPs will generate the policy outcomes stated in the *Five Year Forward View* (Stevens S. *Five Year Forward View*. London: NHS England; 2014)? What variants of MCPs are they creating?
2. Internationally (including in the UK), what equivalents to, or components of, MCPs exist?
3. How do these equivalents and their mechanisms compare with those proposed for MCPs in the NHS?
4. What policy outcomes (comparable with those required of MCPs) are these equivalents reported to produce?
5. What is the evidence for the ways in which these mechanisms depend on specific contexts (e.g. the presence of non-hospital beds for frail older people), that is, how do the different components of the MCP models of care produce different outcomes in different contexts?
6. What do the answers to the above questions imply for the organisational design (logic models of governance structures, internal management and working practices) of MCPs in the NHS?

## Methods

The overall research design was a realist synthesis. Our rationale for using this method was that we wished to test from secondary evidence (which was likely to be very varied in quality, types and sources) a set of assumptions about how a policy (the creation of MCPs) would produce various outcomes (better care co-ordination, etc.) in a NHS context. The research design consisted of three stages:

1. Elaboration of NHS policy-makers' assumptions in an IPT regarding the mechanisms by which MCPs bring about their intended outcomes and in what contexts, elicited from policy documents and 'think tanks' with stakeholders. The policy documents were found by searching the Health Management Information Consortium (HMIC) database (via Ovid), which indexes policy content from the Department of Health and Social Care (DHSC) database (DHSC Data) and The King's Fund database. HMIC indexes all the relevant policy papers. The elaboration of the policy-makers' assumptions (the IPT) about MCPs provided search terms for the second stage.

2. A systematic review (SR), that is, a search for published evidence relevant to the 'causal links' in the IPT. Because MCPs are new, no studies about them had been published at the time of our searches and so we searched for studies of MCP equivalents, that is, organisations and networks serving the same functions as MCPs [horizontal co-ordination, i.e. the co-ordination of primary (including community) health, mental health and social care; care 'integration'; and substituting primary for inpatient care]. Relevant published evidence was found by searching topically appropriate databases, including MEDLINE, MEDLINE In-Process & Other Non-Indexed Citations, PsycINFO (all via Ovid), Cumulative Index to Nursing and Allied Health Literature (CINAHL; via EBSCOhost) and Applied Social Sciences Index and Abstracts (ASSIA; via ProQuest). A total of 1319 titles and abstracts were reviewed in two rounds, and 116 were selected (from 2014 to the search date) for full-text data extraction. Inclusion criteria were:

- relevance to key terms and assumptions in the IPT
- contained data about an Organisation for Economic Co-operation and Development country
- published since 2013.

Secondary data from included studies were extracted and synthesised by collating them into a formal framework in which the categories reflected the causal links in the IPT. As applicable, we used the Mixed Methods Appraisal Tool and the Assessment of Multiple Systematic Reviews tools to assess the quality and validity of the included primary studies and SRs, respectively.

3. Logic analysis systematically comparing the IPT with the evidence review findings. We removed from the IPT those causal links for which the review found no evidential support. Using evidence from the review, we elaborated and supplemented the remaining parts of the programme theory. This produced a revised, more strongly evidence-based revised logic model of MCPs.

## Results

The IPT of MCPs contained 13 key components linked through 28 interconnected context–mechanism–outcome (CMO) relationships ('causal links'), although few of the policy sources specified what contexts the policy mechanisms required. The main causal links and their evidential status in the light of the review were as listed below. We categorised their evidential status as follows. 'Substantial evidence' means that SRs and (other) primary studies support the causal link. 'Supporting evidence' means that multiple primary studies support the causal link. 'Minimal evidence' means that we found just a single primary study supporting the causal link. 'Partial support' means that we found evidence supporting the causal link with qualifications. 'Equivocal evidence' means that we found evidence both for, and against, the causal link. Other causal links were supported by 'no evidence' that we found.

1. IF NHS managers establish MCPs, THEN:

- a. Network management will develop PROVIDED that the specified contextual conditions apply. This assumption had partial support.
- b. Planned referral networks will develop. This assumption had supporting evidence.

2. IF network management develops, THEN:

- a. Multidisciplinary teams (MDTs) will be established. This assumption had supporting evidence.
- b. Care co-ordination through health information technology (HIT) use will develop. This assumption had supporting evidence.

3. IF MDTs are established, THEN:

- a. Reciprocally planned referral networks will develop. This assumption had supporting evidence.
- b. Preventative health care will develop. This assumption had supporting evidence.

4. IF organisational culture changes in the participating organisations, THEN:
  - a. MDTs will develop. There was substantial evidence for this assumption.
  - b. Demand management systems will develop. We found no evidence for this assumption.
  - c. Preventative care will develop. There was substantial evidence for this assumption.
5. IF the voluntary sector becomes involved in MCPs, THEN:
  - a. Demand management systems will develop. We found no evidence for this assumption.
  - b. Preventative health care will develop. This assumption had supporting evidence.
  - c. Patient outcomes and experience of care will improve. There was minimal evidence for this assumption.
6. IF HITs are used to strengthen informational continuity of care, THEN:
  - a. Planned referral networks will develop. We found equivocal evidence for this assumption.
  - b. Care planning at the patient level will become more prevalent. We found equivocal evidence for this assumption.
  - c. Patients will be diverted from inpatient services to primary health care (PHC). We found equivocal evidence for this assumption.
7. IF planned referral networks develop, THEN:
  - a. Demand management systems will develop. We found no evidence for this assumption.
  - b. Care planning for individual patients will become more prevalent. We found equivocal evidence for this assumption.
  - c. More patients will be diverted from inpatient to other services. There was substantial evidence for this assumption.
8. IF demand management systems develop, THEN:
  - a. Preventative care will develop, which will reciprocally develop demand management systems. We found equivocal evidence for this assumption.
  - b. Care planning for individual patients will become more prevalent. We found no evidence for this assumption.
  - c. More patients will be diverted from inpatient services to PHC. We found equivocal evidence for this assumption.
9. IF preventative health care develops, THEN:
  - a. More patients will be diverted from inpatient services to PHC. We found no evidence for this assumption.
10. IF care planning for individual patients becomes more prevalent, THEN:
  - a. Preventative care will develop. This assumption had supporting evidence.
  - b. More patients will be diverted from inpatient to primary care. There was substantial evidence for this assumption.
  - c. Patient experience of care will improve. This assumption had supporting evidence.
11. IF patients are diverted from inpatient care, THEN:
  - a. Patient experience of care will improve. There was minimal evidence for this assumption.
  - b. NHS costs will reduce. We found equivocal evidence for this assumption.

Most studies in the review specified mechanism–outcome relationships, but few of them also specified what contexts the mechanisms required. We also found evidence for further mechanisms (with their contexts and outcomes) that are also relevant to MCPs.

1. IF MDTs are established, THEN:
  - a. organisational culture is likely to change
  - b. voluntary involvement in care is likely to increase
  - c. informational continuity of care is likely to develop
  - d. demand management systems are likely to develop
  - e. care planning for individual patients is likely to become more prevalent
  - f. more patients will be diverted from inpatient to primary care
  - g. patient experience of care is likely to improve.
2. IF organisational culture changes in the participating organisations, THEN:
  - a. planned referral networks are likely to develop
  - b. patient experience of care is likely to improve.
3. IF the voluntary sector becomes involved in MCPs, THEN:
  - a. patient experience of care is likely to improve.
4. IF HITs are used to strengthen informational continuity of care, THEN:
  - a. MDTs are likely to develop
  - b. demand management systems are likely to develop
  - c. preventative care is likely to develop
  - d. NHS costs are likely to be saved.
5. IF planned referral networks develop THEN:
  - a. staff well-being and satisfaction are likely to increase.

Adding these new CMO relationships produced an elaborated programme theory, with a stronger evidence base than the IPT for MCPs. It was possible to focus and simplify the revised logic model by removing redundant (effectively duplicate) sets of links.

## Conclusions

The revised logic model itself has implications for health-care management. MDTs are likely to be the central mechanism by which MCPs work, provided that the MDTs include the relevant professions (hence, organisations) and, for care planning, the individual patients. The evidence that we found suggests that doing so would involve:

1. setting up new MDTs as a core component of a managed referral network, such as the locality teams, which many MCP are setting up to manage admission avoidance, for long-term care management and for well-being promotion, including social prescribing
2. enhancing existing teams [e.g. in general practices that follow the primary care medical home (PCMH) model] that already co-ordinate care for individual patients
3. supporting interprofessional links and collaborative working practices within existing MDTs at both of the above levels

4. creating roles, primarily of care co-ordinators, that span the boundaries between organisations and professions and use 'boundary objects' (e.g. agreed referral criteria, care compacts, shared documentation) to do so.

Important facilitating contexts appear to include a strong culture of mutual knowledge and respect between professions; the existence of primary care and social services into which can be diverted suitable patients as alternatives to hospital; and the colocation and co-employment of MDT members.

### **Future work**

At the time of this review, no empirical studies of MCPs were available, so, instead, the review studied how MCPs might be predicted to work in the light of the evidence about MCP-like networks and organisations elsewhere. Further primary research would be required to test elements of the revised programme theory; in the research that we reviewed, a number of gaps were apparent that indicate further research needs. We judge them to be in the following descending order of importance.

They concerned:

1. How, and in what circumstances, MDT-based locality teams and enhanced general practice (the PCMH, and general practice 'at scale') compare and interact, or can be combined, to manage referral networks so as to reduce workload for other health-care providers.
2. Whether or not, and, if so, how, and in what circumstances, diverting patients from hospital into enhanced primary care does indeed:
  - a. reduce the overall cost of health care
  - b. improve patients' experiences of care.
3. How general practices are affected and have to adapt if larger numbers of patients are diverted from hospital to enhanced primary care.
4. How the other new models of care (above all, the primary and acute care system) that are being developed concurrently with MCPs interact with MCPs. The work would compare and synthesise the findings from this studies with those from the concurrent studies of the other new models of care.
5. How urgent care services will be affected and have to adapt if more patients are diverted from hospital to enhanced primary care.
6. How care co-ordination, through HIT, supports (or not):
  - a. the management of interorganisational referral networks
  - b. the diversion of suitable patients from hospital into enhanced primary care services
  - c. the production and use of care plans for individual patients.
7. How the resources and mechanisms deployed in MCPs will contribute to changing care for different groups of people [defined by morbidity (e.g. single major condition such as cancer), multiple low functional impact morbidities (e.g. diabetes mellitus, coronary heart disease) and high functional impact multimorbidity (e.g. stroke, arthritis, dementia)].
8. How referral networks are established and managed in such a way as to establish referral management systems.
9. How, and in what circumstances, the management of referral networks promotes (or not) the use of care plans for individual patients.
10. How, and under what circumstances, the voluntary sector and MCP-like networks and organisations collaborate in pursuit of the ends for which MCPs were set up.
11. How organisational culture is produced and changes in MCP-like contexts (an area lacking research despite the abundance of studies in hospital and non-health-care settings).

## Study registration

This study is registered as PROSPERO CRD42016038900.

## Funding

Funding for this study was provided by the Health Services and Delivery Research Programme of the National Institute for Health Research (NIHR) and it was supported by the NIHR Collaboration for Leadership in Applied Health Research and Care South West Peninsula.





# Health Services and Delivery Research

ISSN 2050-4349 (Print)

ISSN 2050-4357 (Online)

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) ([www.publicationethics.org/](http://www.publicationethics.org/)).

Editorial contact: [journals.library@nihr.ac.uk](mailto:journals.library@nihr.ac.uk)

The full HS&DR archive is freely available to view online at [www.journalslibrary.nihr.ac.uk/hsdr](http://www.journalslibrary.nihr.ac.uk/hsdr). Print-on-demand copies can be purchased from the report pages of the NIHR Journals Library website: [www.journalslibrary.nihr.ac.uk](http://www.journalslibrary.nihr.ac.uk)

## Criteria for inclusion in the *Health Services and Delivery Research* journal

Reports are published in *Health Services and Delivery Research* (HS&DR) if (1) they have resulted from work for the HS&DR programme or programmes which preceded the HS&DR programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

## HS&DR programme

The Health Services and Delivery Research (HS&DR) programme, part of the National Institute for Health Research (NIHR), was established to fund a broad range of research. It combines the strengths and contributions of two previous NIHR research programmes: the Health Services Research (HSR) programme and the Service Delivery and Organisation (SDO) programme, which were merged in January 2012.

The HS&DR programme aims to produce rigorous and relevant evidence on the quality, access and organisation of health services including costs and outcomes, as well as research on implementation. The programme will enhance the strategic focus on research that matters to the NHS and is keen to support ambitious evaluative research to improve health services.

For more information about the HS&DR programme please visit the website: <http://www.nets.nihr.ac.uk/programmes/hsdr>

## This report

The research reported in this issue of the journal was funded by the HS&DR programme or one of its preceding programmes as project number 15/77/34. The contractual start date was in July 2016. The final report began editorial review in July 2017 and was accepted for publication in November 2017. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HS&DR editors and production house have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the final report document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the HS&DR programme or the Department of Health and Social Care. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the HS&DR programme or the Department of Health and Social Care.

**© Queen's Printer and Controller of HMSO 2018. This work was produced by Sheaff *et al.* under the terms of a commissioning contract issued by the Secretary of State for Health and Social Care. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK.**

Published by the NIHR Journals Library ([www.journalslibrary.nihr.ac.uk](http://www.journalslibrary.nihr.ac.uk)), produced by Prepress Projects Ltd, Perth, Scotland ([www.prepress-projects.co.uk](http://www.prepress-projects.co.uk)).

## NIHR Journals Library Editor-in-Chief

**Professor Tom Walley** Director, NIHR Evaluation, Trials and Studies and Director of the EME Programme, UK

## NIHR Journals Library Editors

**Professor Ken Stein** Chair of HTA and EME Editorial Board and Professor of Public Health, University of Exeter Medical School, UK

**Professor Andrée Le May** Chair of NIHR Journals Library Editorial Group (HS&DR, PGfAR, PHR journals)

**Dr Martin Ashton-Key** Consultant in Public Health Medicine/Consultant Advisor, NETSCC, UK

**Professor Matthias Beck** Professor of Management, Cork University Business School, Department of Management and Marketing, University College Cork, Ireland

**Dr Tessa Crilly** Director, Crystal Blue Consulting Ltd, UK

**Dr Eugenia Cronin** Senior Scientific Advisor, Wessex Institute, UK

**Dr Peter Davidson** Director of the NIHR Dissemination Centre, University of Southampton, UK

**Ms Tara Lamont** Scientific Advisor, NETSCC, UK

**Dr Catriona McDaid** Senior Research Fellow, York Trials Unit, Department of Health Sciences, University of York, UK

**Professor William McGuire** Professor of Child Health, Hull York Medical School, University of York, UK

**Professor Geoffrey Meads** Professor of Wellbeing Research, University of Winchester, UK

**Professor John Norrie** Chair in Medical Statistics, University of Edinburgh, UK

**Professor John Powell** Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), UK

**Professor James Raftery** Professor of Health Technology Assessment, Wessex Institute, Faculty of Medicine, University of Southampton, UK

**Dr Rob Riemsma** Reviews Manager, Kleijnen Systematic Reviews Ltd, UK

**Professor Helen Roberts** Professor of Child Health Research, UCL Great Ormond Street Institute of Child Health, UK

**Professor Jonathan Ross** Professor of Sexual Health and HIV, University Hospital Birmingham, UK

**Professor Helen Snooks** Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, UK

**Professor Jim Thornton** Professor of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences, University of Nottingham, UK

**Professor Martin Underwood** Director, Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick, UK

Please visit the website for a list of editors: [www.journalslibrary.nihr.ac.uk/about/editors](http://www.journalslibrary.nihr.ac.uk/about/editors)

**Editorial contact:** [journals.library@nihr.ac.uk](mailto:journals.library@nihr.ac.uk)