

What is the evidence on interventions to manage referral from primary to specialist non-emergency care? A systematic review and logic model synthesis

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Scientific summary

Interventions to manage referral

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Background

Demand management, although often thought of as a means solely to limit the volume of referrals from primary to secondary care, is a term which is used in a much broader way to refer to any method that has the aim of monitoring, directing or regulating patient referrals. Several strategies have been developed in order to manage the referral of patients to secondary care. These interventions may target primary care or specialist services, or, alternatively, a whole health-care-system infrastructure. It is increasingly recognised that most interventions in health care can be considered to be complex. The increasing complexity of the intervention is accompanied by a corresponding growth in the challenges presented for standard methods of evaluation and synthesis. New methods of systematic review have been developed in response to the need to go beyond reporting the effectiveness of experimental studies, to exploring how and why interventions may work, and the assumptions underpinning the processes whereby an intervention may effect change in a particular context. Logic model methods are a form of theory-based evaluation that focus on relating hypothesised links between an intervention and its constituent parts to its outcomes and long-term impacts. They are a useful method for synthesising review findings, in particular when examining complex interventions which may operate at a whole-system level. A logic model diagram enables the pathway between an intervention and its intended outcomes to be constructed in detail, thereby uncovering assumptions and processes that need to be considered when designing and evaluating interventions, and when considering the applicability of findings to a local context.

Objectives

The study aimed to examine the available literature in order to answer the following research questions:

- What can be learned from the international evidence on interventions to manage referral from primary to specialist care?
- How can international evidence on interventions to manage referral from primary to specialist care be applied in a UK context?
- What factors affect the applicability of international evidence in the UK?
- What are the pathways from interventions to improved outcomes?

Methods

The study employed conventional rigorous systematic review methods for the identification of evidence. Systematic searches of published and unpublished (grey literature) sources from health care and other industries were undertaken to identify recent, relevant studies. An iterative (i.e. a number of different searches) and emergent (i.e. the understanding of the question develops throughout the process) approach was taken to identify evidence. Citation searches of included articles and systematic reviews were also undertaken, as was hand-checking of reference lists of all included articles.

The included studies were examined and data were synthesised via tabulating and comparison and a narrative summary detailing types of intervention and outcomes. In addition, the data were used to construct a diagram illustrating the change pathway (a logic model).

Inclusion and exclusion criteria

- Participants: all primary care medical physicians, hospital specialists and their patients.
- Interventions: interventions that aim to influence and/or affect referral from primary care to specialist services by having an impact on the referral practices of the primary physician. In addition, interventions that aim to improve referral between specialists where they also have the potential to impact on primary care to specialist referrals.
- Comparators: the main comparator condition for intervention studies was the usual method of referral practice which is undertaken in the location where the intervention is being implemented. However, alternative comparators were not excluded. We also included studies with no concurrent comparator (e.g. non-controlled before-and-after studies), as well as qualitative studies where comparators are not relevant.
- Outcomes: all outcomes relating to referral were considered, including referral rate, referral quality, appropriateness of referral, impact on existing service provision, costs, mortality and morbidity outcomes, length of stay in hospital, safety, effectiveness, patient satisfaction, patient experience and process measures (such as referral variation and conversion rates). All qualitative outcomes were also considered for the relevant papers.
- Study design: no restrictions were placed on study design. The criterion for inclusion in the review was that a study is able to answer or inform the research questions. However, we evaluated the quality of study design and execution and how these may affect the reliability of the results generated.

Results

In total, our searches generated a database of 8327 unique papers. We included 290 full papers in the review and excluded a total of 286 papers which were obtained as full papers but were subsequently found to be outside the scope of the review. The included papers consisted of 140 intervention papers and 154 non-intervention 'views and predictors' papers, that is, papers that looked at the views of patients and professionals on the referral process and at factors that predict referral.

We first scrutinised the papers reporting interventions, examining the content of each, the process whereby the intervention was delivered and the intended outcomes in order to begin to characterise and sort the data. The intervention studies were grouped into four categories: education interventions ($n = 50$ papers); process change interventions ($n = 49$ papers); system change interventions ($n = 38$ papers); and patient-focused interventions ($n = 3$ papers). The studies used a wide range of outcomes to determine effectiveness, encompassing referral rate ($n = 62$), service usage ($n = 18$), appropriateness of referral measures ($n = 24$), referral quality indicators ($n = 10$), appropriate actioning of referral measures ($n = 10$), waiting-time period ($n = 8$), costs of providing the service ($n = 12$), and practitioner or patient satisfaction/attitudes ($n = 27$).

An examination of the strength of evidence underpinning these interventions and outcomes indicated that there was stronger evidence of effect for interventions comprising peer review/feedback; improvement of referral information; specialist contact prior to referral; electronic referral; provision of specialist services by community medical practitioners; and community provision of specialists. There was conflicting or weaker evidence for other interventions reported.

As outlined above, the interventions used a range of outcomes to evaluate effectiveness. The process whereby these interventions led to the intended system-level demand management outcomes was unclear, however, with a need for a detailed exploration regarding how exactly the intervention would act on participants and systems in order to produce the expected demand management outcomes. This understanding of the pathway underpinning the effectiveness of interventions was a key aspect in exploring the applicability of this evidence to a UK and local NHS context.

In logic model methods, this element in construction of a pathway is typically called the theory of change, sometimes referred to as the programme theory, which sets out the key change mechanisms following an intervention. We further examined the intervention papers in order to identify exactly what mechanisms were intended to lead to the demand management effect. As will be seen from the outcomes listed above, few interventions examined these immediate (or short-term) outcomes; instead, studies used measures relating to the impact on referral quantity or quality. There was thus a gap in the intervention literature concerning how exactly these interventions might operate in order to have an effect on referrals. This gap, however, is key to understanding how the available evidence on referral management can be applied in a UK context. The non-intervention literature provided insights into these missing elements of the pathway. Factors highlighted as key in any change process in this literature were those relating, first, to the general practitioner [(GP) including GP knowledge, GP attitudes and beliefs and GP referral behaviour], second, to the patient (including patient knowledge and patient attitudes and beliefs) and, third, to the influence of the doctor–patient relationship. In addition to these elements at an individual level which interventions need to act upon, studies reported a number of moderating factors (or barriers and facilitators) which could impact on the success of any intervention relating to the local health-care context and system (such as waiting times, size of practice, location of services and availability of specialists). These elements will influence the applicability of and potential effectiveness of any intervention in a local health-care context.

Conclusions

This systematic review and logic model synthesis demonstrates the complexity of the referral process and multiple elements that will impact on intervention outcomes. It illustrates the multitude of assumptions that are made between interventions and demand management outcomes and that successful referral outcomes are highly dependent on the individuals involved in the referral and also the context in which the referral is taking place. Furthermore, in relation to context, the complexity of the intervention-outcomes pathway highlights that, in order to tackle demand management of primary-care services, the focus cannot be on primary care alone – a whole-systems approach is needed as the introduction of interventions in primary care is often just the starting point of the referral process.

The findings suggested that, although individual-level interventions may be popular, the stronger evidence relates only to peer-review and feedback interventions. Process change interventions appeared to be more effective when the change resulted in the specialist being provided with more or better quality information about the patient. System changes, including the community provision of specialist services by GPs, outreach provision by specialists and the return of inappropriate referrals, appeared to have evidence of effect.

Our research questions focused on the applicability of the evidence that we found to the UK NHS context. Although the evidence identified was international in nature and some of it originates from countries with very different health-care systems and processes from the UK, the vast majority of studies had relevance in the UK within a universal health-care setting such as the NHS, in which it is possible to influence and indeed manage the whole range of provision from GP to secondary-care provider. The international evidence suggests that individual peer-review/feedback interventions, and some process change and system change interventions, may be effective and applicable in the UK. The review, however, highlighted the role of local factors such as waiting times, access to specialists and workload, which may influence the success of any intervention. It is likely that local differences between specialties, UK demographic variation and elements that the review identified relating to individual patients and practitioners will have a stronger impact on the effectiveness and applicability of the interventions identified than country of origin. Possible exceptions to this consideration of applicability in the UK are two types of system change interventions, namely the addition or removal of gatekeeping systems and changes to health-care payment systems. It might take more fundamental revision of existing NHS management and procedures to make these types of changes within the UK. However, the review identified few studies evaluating these systems, with evidence of their effectiveness in managing demand conflicting.

Study registration

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