April 2015 – SUPPORT Summary of a systematic review

Do educational, organisational or financial interventions improve referrals from primary care to secondary care?

Primary care physicians act as gatekeepers for patient referrals to specialist care, diagnosis and management advice, or when specialist procedures are needed. However, unexplained variations in referral rates by primary care physicians have been noted. Inappropriate referrals have negative implications for patients, for the costs of care and for healthcare systems. This summary describes the evidence on interventions to improve referrals from primary care to secondary care.

Key messages

➔ **Professional education that includes guidelines, checklists, video materials and educational outreach by specialists probably improve the quantity and quality of referrals**

➔ **Joint primary care practitioner and consultant sessions probably result in improved patient outcomes**

➔ **Organisational interventions that may improve referral rates and referral appropriateness include:**

- The provision of physiotherapy services in primary care
- Obtaining a second, in-house assessment of referrals
- Dedicated appointment slots at secondary levels for each primary care practice

➔ **Professional education that only includes the passive dissemination of referral guidelines probably leads to little or no difference in both the quantity and quality of referrals**

➔ **The effects of financial incentives on referral rates are uncertain**

Who is this summary for?

People making decisions about referrals between primary care and secondary care levels

! This summary includes:

- **Key findings** from research based on a systematic review
- **Considerations about the relevance of this research** for low-income countries

X Not included:

- Recommendations
- Additional evidence not included in the systematic review
- Detailed descriptions of interventions or their implementation

This summary is based on the following systematic review:

Akbari A, Mayhew A, Al-Alawi MA, Grimshaw J, Winkens R, Glidewell E, Pritchard C, Thomas R, Fraser C. Interventions to improve outpatient referrals from primary care to secondary care. *Cochrane Database of Systematic Reviews* 2008, Issue 4.

What is a systematic review?

A summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise the relevant research, and to collect and analyse data from the included studies

SUPPORT was an international project to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries, funded by the European Commission (FP6) and the Canadian Institutes of Health Research.

Glossary of terms used in this report: www.supportsummaries.org/glossary-of-terms

Background references on this topic: See back page

Background

Primary care providers make decisions about which patients to refer to specialists for advice on diagnosis or management, and for specialised procedures and care. However, evidence suggests that such referral processes could be improved. Some patients may be referred inappropriately or they may not be referred when they ought to be; others are referred for unnecessary tests or procedures.

A previous systematic review by Grimshaw (1998) found relatively little research evaluating interventions to improve referral behaviour. Several subsequent studies have been completed, and the summary presented here is based on an update of Akbari et al's review in which the effectiveness of interventions to improve referrals from primary care to specialist care was assessed.

How this summary was prepared

After searching widely for systematic reviews that can help inform decisions about health systems, we have selected ones that provide information that is relevant to low-income countries. The methods used to assess the reliability of the review and to make judgements about its relevance are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review might not find any studies from low-income countries or might not find any well-designed studies. Although that is disappointing, it is important to know what is not known as well as what is known.

A lack of evidence does not mean a lack of effects. It means the effects are uncertain. When there is a lack of evidence, consideration should be given to monitoring and evaluating the effects of the intervention, if it is used.

About the systematic review underlying this summary

Review objective: To assess the effects of interventions to change primary care outpatient referral rates or improve outpatient referral appropriateness

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised trials, nonrandomised trials, controlled before-after studies, and interrupted time series of interventions to change outpatient referral rates or improve outpatient referral appropriateness.	17 studies were found, of which 9 evaluated professional educational interventions, 4 evaluated organisational interventions, and 4 evaluated financial interventions. Of the 17 studies identified, 10 were randomised trials, 1 was a nonrandomised trial, 5 were controlled before-after studies, and 1 was an interrupted time series study.
Participants	**Primary care physicians, including** general practitioners, family doctors, family physicians, family practitioners, and other physicians working in primary healthcare settings, who fulfil primary healthcare tasks. Specialist physicians working in hospitals or community outpatient settings.	Primary care physicians and specialist physicians.
Settings	Primary care and hospitals.	12 of the studies were located in the UK, 2 in the USA, and 1 each in the Netherlands, Palestine, and Finland.
Outcomes	Objectively measured provider performance in a healthcare setting (for example, referral rates or appropriateness of referral) or health outcomes.	Number of primary care visits, referral rates, appropriateness of referrals, case mix of referrals, appropriateness of specialist investigations, costs of prescriptions.

Date of most recent search: October 2007

Limitations: This is a well-conducted systematic review with only minor limitations.

Akbari A, Mayhew A, Al-Alawi MA, Grimshaw J, Winkens R, Glidewell E, Pritchard C, Thomas R, Fraser C. Interventions to improve outpatient referrals from primary care to secondary care. *Cochrane Database of Systematic Reviews* 2008, Issue 4.

Summary of findings

The review identified 17 studies and, in total, 23 separate comparisons were made. Nine studies (14 comparisons) evaluated professional educational interventions, 4 studies evaluated organisational interventions and 4 studies (5 comparisons) evaluated financial interventions. The majority of the studies (16) were from high-income settings.

1) Professional education

Interventions included: the passive dissemination of local specialist referral guidelines; the dissemination of referral guidelines using structured referral sheets (using checklists designed to be completed at the point of referral as a way to prompt primary care physicians about the key elements of their own pre-referral investigations and patient management); and secondary care, provider-led, educational strategies.

➔ **The passive dissemination of referral guidelines and checklists probably results in little or no improvement in the quantity or quality of referrals. The certainty of this evidence is moderate.**

➔ **The combination of referral guidelines and structured checklists, together with video materials or educational outreach, probably improves referral rates, referral appropriateness, and pre-referral patient management by primary care physicians. The certainty of this evidence is moderate.**

➔ **Referral guidelines with structured referral sheets probably result in little or no change in patient outcomes. The certainty of this evidence is moderate.**

➔ **Joint primary care practitioner and consultant sessions probably result in improved patient outcomes. The certainty of this evidence is moderate.**

About the certainty of the evidence (GRADE) *

⨁⨁⨁⨁
High: This research provides a very good indication of the likely effect. The likelihood that the effect will be substantially different† is low.

⨁⨁⨁◯
Moderate: This research provides a good indication of the likely effect. The likelihood that the effect will be substantially different† is moderate.

⨁⨁◯◯
Low: This research provides some indication of the likely effect. However, the likelihood that it will be substantially different† is high.

⨁◯◯◯
Very low: This research does not provide a reliable indication of the likely effect. The likelihood that the effect will be substantially different† is very high.

* This is sometimes referred to as 'quality of evidence' or 'confidence in the estimate'.

† Substantially different = a large enough difference that it might affect a decision

See last page for more information.

Professional education

People Primary care physicians
Settings Primary care services referring to secondary care for specialised services
Intervention Referral guideline dissemination, with or without structural referral sheets or secondary care provider-led education
Comparison Routine referrals, i.e. no intervention

Outcomes	Impact	Certainty of the evidence (GRADE)
Referral rates	Passive guideline dissemination alone (2 studies) and referral guidelines with structured referral sheets (2 studies) resulted in little or no change in referral rates. Secondary provider-led education resulted in increased referrals for dyspepsia (relative change: +54%) (1 study); decreased referrals for orthopaedic surgery (relative change: -47.9%) (1 study); and no changes in referrals for tracer conditions (1 study).	⨁⨁⨁◯ Moderate
Patient load	A multi-faceted intervention including guidelines, education, referral sheets, new staff and equipment changes, resulted in a 50% referral reduction (1 study). Referral guidelines, structured referral sheets, educational meetings, and open-access investigations for the assessment of urological conditions resulted in no differences in number of primary care consultations, but reduced waiting times for first specialist appointments (Ratio of means of waiting times: 0.7, 95% CI 0.55 to 0.89) and increased the probability of a management decision being reached after one hospital appointment (OR 5.8; 95%CI 2.9 to 11.5)(1 study).	⨁⨁⨁◯ Moderate
Appropriateness of referrals	The use of a checklist and video by general practitioners probably improves referral appropriateness (1 study). Educational outreach led by secondary care providers probably improves referral appropriateness for specialised investigations of dyspepsia (1 study). Passive guideline dissemination, with or without outreach, probably leads to little or no difference in referral appropriateness for tracer conditions (1 study).	⨁⨁⨁◯ Moderate
Patient management	Passive guideline dissemination, with or without outreach, probably leads to little or no difference in hospital patient management of tracer conditions (1 study). Referral guidelines together with structured referral sheets probably improve pre-referral assessments and management of fertility problems by primary care practitioners (2 studies); this form of intervention also resulted in improved compliance with urological referral guidelines, and reduced waiting times for hospital outpatient appointments (1 study). Educational outreach by secondary care providers resulted in no changes in the number of investigations of orthopaedic patients, but did result in an increase in the use of injection therapy by primary care practitioners (30.6% study vs. 11.7% control, p<0.001) (1 study).	⨁⨁⨁◯ Moderate
Patient outcomes	Referral guidelines with structured referral sheets resulted in little or no change in patient outcomes for urological conditions at 12 months (1 study). Joint primary care practitioner and orthopaedic consultant sessions resulted in an increase in patients who were disorder-free after a year (35.7% study vs. 23.7% control, p<0.05) (1 study).	⨁⨁⨁◯ Moderate

GRADE: GRADE Working Group grades of evidence (see above and last page)

2) Organisational interventions

Organisational interventions include changes in who delivers healthcare, and how such care is organised or delivered. Four studies evaluated the effects of organisational changes on referrals to secondary care. These included an evaluation of physician disciplines (for example, whether the physicians were trained in family medicine or internal medicine), the provision of physiotherapy services in primary care, obtaining a second opinion in-house on referrals, and providing appointment slots within secondary care services in proportion to the size of the referring primary practice.

➔ **The provision of physiotherapy services at the primary care level may decrease the number of referrals to orthopaedic and rheumatology specialist services. The certainty of this evidence is low.**

➔ **Second opinions in-house may reduce referral rates and improve referral appropriateness. The certainty of this evidence is low.**

➔ **Dedicated appointment slots at secondary levels for each primary care practice may decrease referral rates to specialist care. The certainty of this evidence is low.**

➔ **Practices in which physicians are trained in family medicine compared to practices in which physicians are trained in internal medicine may result in a reduction in referrals and fewer visits to acute and emergency care. The certainty of this evidence is low.**

Oraganisational interventions

People	Primary care physicians
Settings	Primary care services referring to secondary care for specialised services
Intervention	Healthcare organisation and delivery interventions
Comparison	No intervention

Outcomes	Impact	Certainty of the evidence (GRADE)
Referral rates	Providing physiotherapy in primary care may decrease orthopaedic and rheumatology referral rates (1 study); allocation of specialist appointment slots for primary care practices may improve referral rates (1 study); 30% of referrals were evaluated as "unnecessary" according to in-house, second opinions (1 study)	⨁⨁◯◯ Low
Patient load	Family medicine practices referred less, had fewer emergency room attendances, fewer acute care clinic visits, and fewer other non-primary care clinic attendances compared with internal medicine physicians (1 study)	⨁⨁◯◯ Low

GRADE: GRADE Working Group grades of evidence (see above and last page)

3) Financial interventions

Four studies evaluated financial interventions: these included changes in provider remuneration, participation in fundholding schemes (UK National Health Service), and charging patients equivalent rates for being seen by a private specialist as by a hospital-based specialist. The certainty of the evidence provided by these studies was very low.

➔ **The effects of financial interventions on referral rates are uncertain. The certainty of this evidence is very low.**

Relevance of the review for low-income countries

➔ Findings	▷ Interpretation*
APPLICABILITY	
➔ **Most of the included studies were conducted in high-income countries and within particular health systems. These system included, for example, the publicly funded National Health System in the UK, and Medicaid in the USA.**	▷ *The studies were based in well-resourced environments in which primary care services were provided by an adequate number of practitioners, and relatively easy access was available to specialist services. Such scenarios are not necessarily available or possible in many low-income countries. The study findings therefore need to be interpreted with caution when applied to low-income countries.*
EQUITY	
➔ **The studies were based largely in urban settings, in populations with relative equity in health and access to health care.**	▷ *The interventions may increase inequity if they are not applied or adapted to populations in rural or remote areas or if there are substantial socio-economic variations or discrepancies amongst those receiving the intervention.*
ECONOMIC CONSIDERATIONS	
➔ **Costings were included in several studies but full economic evaluations were seldom reported.**	▷ *Limited information is available on the cost-effectivenes of the interventions. Local costings should therefore be undertaken, particularly in settings differing from the original investigations.*
MONITORING & EVALUATION	
➔ **Studies were conducted over relatively short time periods (a maximum, for example, of two years), and in health systems in high-income countries. The studies focused on the measurement of process outcomes; very few studies assessed patients' health outcomes.**	▷ *Any interventions implemented based on the review findings should include a monitoring component to assess the performance of the intervention within the context. Evaluations should measure the appropriateness of the referrals, not only the number of referrals. Patient outcomes should also be considered.*

*Judgements made by the authors of this summary, not necessarily those of the review authors, based on the findings of the review and consultation with researchers and policymakers in low-income countries. For additional details about how these judgements were made see: www.supportsummaries.org/methods

Additional information

Related literature

Grimshaw JM, Shirran L, Thomas R, Mowatt G, Fraser C, Bero L, Grilli R, Harvey E, Oxman AD, O'Brien M. Changing provider behavior: An overview of systematic reviews of interventions. Medical Care 2001; 39:Supplement 2, II-2 - II-45.

Getting evidence into practice. Effective Health Care 1999; 5:(1). www.york.ac.uk/inst/crd/pdf/ehc51.pdf

Grimshaw JM, Thomas RE, MacLennan G, Fraser C, Ramsay C, Vale L et al. Effectiveness and efficiency of guideline dissemination and implementation strategies. Health Technol Assess 2004; 8:(6). www.hta.nhs.uk/fullmono/mon806.pdf

NorthStar – How to design and evaluate quality improvement interventions in healthcare: NorthStar is a tool providing a range of information, checklists, examples and tools based on current research on how best to design and evaluate quality improvement interventions. www.rebeqi.org/?pageID=36&ItemID=18

Coulter A. Does the referral system work? Roland M, Coulter A, editor(s). Hospital Referrals. Oxford: Oxford University Press, 1992.

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Conflict of interest

None declared. For details, see: www.supportsummaries.org/coi

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Akbari A, Mayhew A, Al-Alawi MA, Grimshaw J, Winkens R, Glidewell E, Pritchard C, Thomas R, Fraser C. Interventions to improve outpatient referrals from primary care to secondary care. Cochrane Database of Systematic Reviews 2008, Issue 4. Art. No.: CD005471. DOI: 10.1002/14651858.CD005471.pub2.

The summary should be cited as

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Keywords

All Summaries:
evidence-informed health policy, evidence-based, systematic review, health systems research, health care, low and middle-income countries, developing countries, primary health care, primary care referral, patient referral, specialist referral, referral behaviour

About certainty of the evidence (GRADE)

The "certainty of the evidence" is an assessment of how good an indication the research provides of the likely effect; i.e. the likelihood that the effect will be substantially different from what the research found. By "substantially different" we mean a large enough difference that it might affect a decision. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the study design (randomised trials versus observational studies), factors that reduce the certainty (risk of bias, inconsistency, indirectness, imprecision, and publication bias) and factors that increase the certainty (a large effect, a dose response relationship, and plausible confounding). For each outcome, the certainty of the evidence is rated as high, moderate, low or very low using the definitions on page 3.

For more information about GRADE: www.supportsummaries.org/grade

SUPPORT collaborators:

The Cochrane Effective Practice and Organisation of Care Group (EPOC) is part of the Cochrane Collaboration. The Norwegian EPOC satellite supports the production of Cochrane reviews relevant to health systems in low- and middle-income countries . www.epocoslo.cochrane.org

The Evidence-Informed Policy Network (EVIPNet) is an initiative to promote the use of health research in policymaking in low- and middle-income countries. www.evipnet.org

The Alliance for Health Policy and Systems Research (HPSR) is an international collaboration that promotes the generation and use of health policy and systems research in low- and middle-income countries. www.who.int/alliance-hpsr

Norad, the Norwegian Agency for Development Cooperation, supports the Norwegian EPOC satellite and the production of SUPPORT Summaries. www.norad.no

The Effective Health Care Research Consortium is an international partnership that prepares Cochrane reviews relevant to low-income countries. www.evidence4health.org

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