February 2017 – SUPPORT Summary of a systematic review

Do financial incentives improve the quality of healthcare provided by primary care physicians?

The use of financial incentives to directly reward performance and quality has been proposed as a strategy to improve the quality of care provided by primary care physicians. An increasing number of countries, like the USA and UK, use financial incentives.

Key messages

➔ **The effects of financial incentives to improve the quality of healthcare provided by primary care physicians are uncertain.**

➔ **If financial incentives for quality improvement are used, they should be carefully designed and evaluated.**

➔ **Unintended consequences and economic consequences should be evaluated, as well as impacts on the quality of care and access to care.**

Who is this summary for?

People making decisions concerning the use of financial incentives to improve the quality of healthcare provided by primary care physicians

! 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:

Scott A, Sivey P, Ait Ouakrim D, et al. The effect of financial incentives on the quality of health care provided by primary care physicians. Cochrane database Syst Rev 2011 (9): CD008451.

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

A variety of methods can be used to pay primary care physicians. Payments can be made in exchange for different outputs, including: working for a specified time period (salary), providing specific services (fee-for-service), providing care for a specific population (capitation), or providing a pre-specified level of quality of care (pay for performance). Payments can also be unconditional, for each additional output, or they can be conditional on reaching a threshold or target. Payments can also be prospective (providing a fixed budget) or retrospective. With retrospective payments, there may or may not be a cap.

The level of payment for primary physicians can also vary in several ways. The level can be fixed in advance, physicians can have varying degrees of discretion as to the amount of money they can charge, and the amount of payment can be reduced or withheld if physicians do not comply with what is required (financial penalties). The amount of payment can also vary depending on administrative rules (e.g. depending on qualifications of the physicians, where they practice, or the types of patients they see).

Changes in any of these characteristics of how physicians are paid or the level of payment alters their financial incentives. If physicians respond to these changes in incentives, it can affect the quality of the care that they provide.

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/how-support-summaries-are-prepared/

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 examine the effect of changes in the method and level of payment on the quality of care provided by primary care physicians (PCPs)

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised trials, controlled before-after studies (CBA), and interrupted time series studies (ITS) evaluating the impact of changes in the method or level of payment for primary care physicians	7 studies, including: cluster-randomised trials (3), CBA studies (2), ITS study (1), and controlled ITS study (1). The studies evaluated: single-threshold target payments (3); a fixed fee per patient achieving a specified outcome (1); payments based on the relative ranking of medical groups' performance (tournament-based pay) (1); a mix of tournament-based pay and threshold payments (1); and changing from a blended payments scheme to salaried payment (1).
Participants	Primary care physicians	Five studies took place in large private health plans in the US; One study in 20 PCP medical groups in England; and one study in 82 medical practices in Germany.
Settings	Primary care	The studies were from US (5), the UK (1), and Germany (1).
Outcomes	Quality of care was defined as patient reported outcome measures, clinical behaviours, and intermediate clinical and physiological measures.	Studies examined: smoking cessation (3); patients' assessment of the quality of care (1); cervical cancer screening, mammography screening, and HbA1 (2 studies, 1 of them also childhood immunisation, chlamydia screening, and appropriate asthma medication); and four outcomes in diabetes (1).
Date of most recent search: August 2009		
Limitations: This is a well-conducted systematic review with only minor limitations.		

Scott A, Sivey P, Ait Ouakrim D, et al. The effect of financial incentives on the quality of health care provided by primary care physicians. Cochrane database Syst Rev 2011 (9): CD008451.

Summary of findings

Seven studies were included in this review. Three of the studies evaluated single-threshold target payments, one examined a fixed fee per patient achieving a specified outcome, one study evaluated payments based on the relative ranking of medical groups' performance (tournament-based pay), one study examined a mix of tournament-based pay and threshold payments, and one study evaluated changing from a blended payments scheme to salaried payment. Six out of the seven studies used schemes that paid medical groups rather than individual physicians. For those studies that involved payments to medical groups, none reported how the payments were used or distributed within the medical group.

Outcome measures included targeted preventive interventions (support for smoking cessation, screening, immunizations) and management goals for chronic conditions (asthma and diabetes).

Six of the seven studies showed positive but modest effects on quality of care for some primary outcome measures, but not all. Physicians were able to select into or out of the incentive schemes or health plans and there was a high risk of bias in all of the studies.

➔ **The effects of financial incentives on the quality of healthcare provided by primary care physicians is uncertain. The certainty of this evidence is very low.**

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.

The effects of financial incentives on the quality of health care provided by primary care physicians

People	Primary care physicians
Settings	Primary care in the US, UK, and Germany
Intervention	Different types of financial incentives (see above), mostly paid to medical groups rather than individuals
Comparison	Only three out of the seven studies described the payment scheme used in the control group or before the intervention occurred, and only two studies reported estimates of the size of payments as a percentage of total revenue

Outcomes	**Median difference*** Interquartile range	Certainty of the evidence (GRADE)	Comments
Professional practice achievement of targeted goals for preventive interventions and management of chronic conditions	1.7% 0.3 to 4.7%	⊕◯◯◯ Very low†	The apparent size of the effects were small and varied from 3.1% worse to 7.7% more achievement of desired practice.

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

* The difference in achievement of targeted goals for physicians who received financial incentives compared to physicians who did receive the same financial incentives, adjusted for baseline differences in achievement of those goals in non-randomised studies. Calculated by the author of this Summary.

† All seven studies had a high risk of bias and the effects were inconsistent.

Relevance of the review for low-income countries

➔ Findings	▷ Interpretation*
APPLICABILITY	
➔ **The studies included in this systematic review were all from high-income countries.**	▷ *The impacts of financial incentives for primary care physicians are likely to vary depending on clinical, demographic and organisational factors, as well as on the magnitude of the incentives and payment methods.* ▷ *Some payment methods require sophisticated information and billing systems that are not available in some settings.*
EQUITY	
➔ **The systematic review did not report impacts on equity or disadvantaged populations.**	▷ *The impact of financial incentives on equity are uncertain and might depend on the design of the incentives.* ▷ *It is uncertain whether incentives targeted at improving the quality of care for disadvantaged populations are effective.*
ECONOMIC CONSIDERATIONS	
➔ **The systematic review did not report costs or cost-effectiveness.**	▷ *The costs of financial incentives can be expected to increase with the level of the incentives, whereas any savings and impacts on the quality of care or with increasing levels of incentives are uncertain.* ▷ *The sustainability of financial incentives and the sustainability of any effects that they may have on the quality of care are uncertain.*
MONITORING & EVALUATION	
➔ **The systematic review found only seven studies evaluating different incentives and measures of quality of care. All of the studies had a high risk of bias.**	▷ *The use of financial incentives to improve the quality of care provided by primary care physicians should be carefully designed and evaluated using randomised trials.* ▷ *Unintended consequences and economic consequences should be evaluated, as well as impacts on the quality of care and access to care.*

*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

This systematic review assessed the effects of paying for performance on the provision of health care and health outcomes in low- and middle-income countries:
Witter S, Fretheim A, Kessy FL, et al. Paying for performance to improve the delivery of health interventions in low- and middle-income countries. Cochrane Database syst Rev 2012 (2): CD007899.

These two systematic reviews assessed the effects of different methods of paying primary care physicians:
Giuffrida A, Gosden T, Forland F, et al. Target payments in primary care: effects on professional practice and health care outcomes. Cochrane Database syst Rev 2000 (3): CD000531.

Gosden T, Forland F, Kristiansen IS, Sutton M, Leese B, Giuffrida A, et al. Capitation, salary, fee-for-service and mixed systems of payment: effects on the behaviour of primary care physicians. Cochrane Database syst Rev 2000 (3): CD002215.

Petersen LA, Woodard LD, Urech T, et al. Does pay-for-performance improve the quality of health care? Ann Intern Med 2006; 145(4): 265-72.

Houle SK, McAlister FA, Jackevicius CA, et al. Does performance-based remuneration for individual health care practitioners affect patient care? A systematic review. Ann Intern Med 2012; 157(12): 889-99.

Chaix-Couturier C, Durand-Zaleski I, Jolly D, Durieux P. Effects of financial incentives on medical practice: results from a systematic review of the literature and methodological issues. Int J Qual Health Care 2000; 12(2): 133-42.

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Conflict of interest

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

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This review should be cited as

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The summary should be cited as

Ciapponi A, García Martí S. Do financial incentives improve the quality of healthcare provided by primary care physicians? A SUPPORT Summary of a systematic review. February 2017.
www.supportsummaries.org

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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