Vedlegg

Til rapport:
Fretheim A, Flottorp S, Oxman AD. Tiltak for implementering av kliniske retningslinjer: Oppsummering av funn fra systematiske oversikter. Rapport fra Kunnskapssenteret nr. 10–2015. Oslo: Nasjonalt kunnskapssenter for helsetjenesten, 2015.

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Vedlegg 1. Søkestrategi i Cochrane-rapporten

Vi gjengir her søkestrategien som forfatterne av Cochrane-rapporten – som vi i stor grad har basert oss på – benyttet:

Search methods for identification of reviews

We searched Health Systems Evidence (http://www.mcmasterhealthforum.org/hse/) in November 2010 using the following filters:

- health system topics = implementation strategies;
- type of synthesis = systematic review or Cochrane review;
- type of question = effectiveness;
- publication date range = 2000 – 2010.

In March 2013, we searched PDQ ("pretty darn quick")-Evidence (http://www.pdq-evidence.org/) using the filter "Systematic Reviews" with no other restrictions. We will update that search periodically, excluding records that were entered into PDQ-Evidence prior to the date of the last previous search.

PDQ-Evidence is a database of evidence for decisions about health systems. It includes systematic reviews, overviews of reviews (including evidence-based policy briefs) and studies included in systematic reviews. The following databases are searched for PDQ-Evidence with no language or publication status restrictions:

- Cochrane Database of Systematic Reviews (CDSR);
- Database of Abstracts of Reviews of Effectiveness (DARE);
- Health Technology Assessment Database;
- PubMed;
- LILACS;
- Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) Evidence Library;
- 3ie Systematic Reviews and Policy Briefs;
- World Health Organization (WHO) Database;
- Campbell Library;
- Supporting the Use of Research Evidence (SURE) Guides for Preparing and Using Evidence-based Policy Briefs;
- European Observatory on Health Systems and Policies;
- UK Department for International Development (DFID);
- National Institute for Health and Care Excellence (NICE) public health guidelines and systematic reviews;
- Guide to Community Preventive Services;

- Canadian Agency for Drugs and Technologies in Health (CADTH) Rx for Change;
- McMaster Plus KT+;
- McMaster Health Forum Evidence Briefs.

The detailed search strategies for PubMed and LILACS can be found in Appendix 1. All records in the other databases were screened.

In addition we screened all of the Cochrane Effective Practice and Organisation of Care (EPOC) Groups reviews in Archie (the Cochrane Collaboration's central server for managing documents) (http://archie.cochrane.org/) and the reference lists of relevant policy briefs and overviews of reviews.

We performed an updated search in PDQ-Evidence in June 2014.

Appendix 1. PubMed and LILACS search strategies

PubMed

From 2000 to present. Update: weekly
#1. MEDLINE[Title/Abstract]
#2. (systematic[Title/Abstract] AND review[Title/Abstract])
#3. meta analysis[Publication Type]
#4. #1 OR #2 OR #3 **(Methods filter for systematic reviews-Clinical Queries-Max Specificity)**
#5. overview[Title] AND (reviews[Title] OR systematic[Title]
#6. meta-review[Title]
#7. review of reviews[Title]
#8. review[Title] AND systematic reviews[Title]
#9. umbrella[Title] AND (review[Title] OR reviews[Title] OR systematic[Title])
#10. policy[Title] AND (brief[Title] OR evidence[Title])
#11. #5 OR #6 OR #7 OR #8 OR #9 OR #10 **(Methods filter for overviews)**
#12. #4 OR #11 **(Methods filter for systematic reviews and for overviews)**

LILACS

From 2000 to present. Update: weekly
(TW:“revision sistematica” OR TW:“revisao sistematica” OR TW:“systematic review” OR MH:“review literature as topic” OR MH:
“meta-analysis as topic” OR PT:“meta-analysis”)
OR
(PT: revision **AND** (TW:metaanal$ OR TW:“meta-analysis” OR TW:“metaanalise” OR TW:“meta-analisis” OR TI:overview$ OR
TW:“estudio sistematico” OR TW:“systematic study” OR TW:“estudo sistematico” OR TI:review OR TI:revisao OR TI:revision OR
TI:systematic OR TI:sistematico))
OR
((TW:overview OR TW:“estudio sistematico” OR TW:“systematic study” OR TW:“estudo sistematico”) **AND** (TI:review OR TI:
revisao OR TI:revision OR TI:systematic OR TI:sistematico))

Vedlegg 2. Sjekkliste for vurdering av kvalitet av systematiske oversikter

SUPPORT Summaries checklist for making judgements about how much confidence to place in a systematic review

Review:
Assessed by:
Date:

Section A: *Methods used to identify, include and critically appraise studies*

A.1 Were the criteria used for deciding which studies to include in the review reported? Did the authors specify: ☐ Types of studies ☐ Participants ☐ Intervention(s) ☐ Outcome(s) *Coding guide - check the answers above* *YES: All four should be yes*	☐ Yes ☐ Can't tell/partially ☐ No
Comments (note important limitations or uncertainty)	
A.2 Was the search for evidence reasonably comprehensive? Were the following done: ☐ Language bias avoided (no restriction of inclusion based on language) ☐ No restriction of inclusion based on publication status ☐ Relevant databases searched (including Medline + Cochrane Library) ☐ Reference lists in included articles checked ☐ Authors/experts contacted *Coding guide - check the answers above:* *YES: All five should be yes* *PARTIALLY: Relevant databases and reference lists are both ticked off*	☐ Yes ☐ Can't tell/partially ☐ No
Comments (note important limitations or uncertainty)	

A.3 Is the review reasonably up-to-date? *Were the searches done recently enough that more recent research is unlikely to be found or to change the results of the review?* *Coding guide – consider how many years since the last search (e.g. if more than 10 years the review is unlikely to be up-to-date) and whether there is ongoing research*	☐ Yes ☐ Can't tell/not sure ☐ No
Comments (note important limitations or uncertainty)	
A.4 Was bias in the selection of articles avoided? Did the authors specify: ☐ Explicit selection criteria ☐ Independent screening of full text by at least 2 reviewers ☐ List of included studies provided ☐ List of excluded studies provided *Coding guide - check the above* *YES: All four should be yes*	☐ Yes ☐ Can't tell/partially ☐ No
Comments (note important limitations or uncertainty)	
A.5 Did the authors use appropriate criteria to assess the risk for bias in analysing the studies that are included?† **(See Appendix for an example of criteria - Assessing Risk of Bias Criteria for EPOC Reviews)** ☐ The criteria used for assessing the risk of bias were reported ☐ A table or summary of the assessment of each included study for each criterion was reported ☐ Sensible criteria were used that focus on the risk of bias (and not other qualities of the studies, such as precision or applicability) *Coding guide - check the above* *YES: All four should be yes*	☐ Yes ☐ Can't tell/partially ☐ No
Comments (note important limitations or uncertainty)	
A.6 Overall – how would you rate the methods used to identify, include and critically appraise studies? *Summary assessment score A relates to the 5 questions above.* *If the "No" or "Partial" option is used for any of the questions above, the review is likely to have important limitations.* *Examples of major limitations might include not reporting explicit selection criteria, not providing a list of included studies or not assessing the risk of bias in included studies.*	☐ **Major limitations** (limitations that are important enough that the results of the review are not reliable and they should not be used in the policy brief) ☐ **Important limitations** (limitations that are important enough that it would be worthwhile to search for another systematic review and to interpret the results of this review cautiously, if a better review cannot be found) ☐ **Reliable** (only minor limitations)

Comments (note any major or important limitations).

Section B: *Methods used to analyse the findings*

B.1 Were the characteristics and results of the included studies reliably reported? Was there: ☐ Independent data extraction by at least 2 reviewers ☐ A table or summary of the characteristics of the participants, interventions and outcomes for the included studies ☐ A table or summary of the results of the included studies. *Coding guide - check the answers above* *YES: All three should be yes*	☐ Yes ☐ Partially ☐ No ☐ Not applicable (e.g. no included studies)
Comments (note important limitations or uncertainty)	
B.2 Were the methods used by the review authors to analyse the findings of the included studies reported?	☐ Yes ☐ Partially ☐ No ☐ Not applicable (e.g. no studies or no data)
Comments (note important limitations or uncertainty)	
B.3 Did the review describe the extent of heterogeneity? ☐ Did the review ensure that included studies were similar enough that it made sense to combine them, sensibly divide the included studies into homogeneous groups, or sensibly conclude that it did not make sense to combine or group the included studies? ☐ Did the review discuss the extent to which there were important differences in the results of the included studies? ☐ If a meta-analysis was done, was the I^2, chi square test for heterogeneity or other appropriate statistic reported?	☐ Yes ☐ Can't tell/partially ☐ No ☐ Not applicable (e.g. no studies or no data)
Comments (note important limitations or uncertainty)	

B.4 Were the findings of the relevant studies combined (or not combined) appropriately relative to the primary question the review addresses and the available data? How was the data analysis done? ☐ Descriptive only ☐ Vote counting based on direction of effect ☐ Vote counting based on statistical significance ☐ Description of range of effect sizes ☐ Meta-analysis ☐ Meta-regression ☐ Other: specify ☐ Not applicable (e.g. no studies or no data) How were the studies weighted in the analysis? ☐ Equal weights (this is what is done when vote counting is used) ☐ By quality or study design (this is rarely done) ☐ Inverse variance (this is what is typically done in a meta-analysis) ☐ Number of participants ☐ Other, specify: ☐ Not clear ☐ Not applicable (e.g. no studies or no data) Did the review address unit of analysis errors? ☐ Yes - took clustering into account in the analysis (e.g. used intra-cluster correlation coefficient) ☐ No, but acknowledged problem of unit of analysis errors ☐ No mention of issue ☐ Not applicable - no clustered trials or studies included *Coding guide - check the answers above* *If narrative OR vote counting (where quantitative analyses would have been possible) OR inappropriate table, graph or meta-analyses OR unit of analyses errors not addressed (and should have been) the answer is likely NO.* *If appropriate table, graph or meta-analysis AND appropriate weights AND the extent of heterogeneity was taken into account, the answer is likely YES.* *If no studies/no data: NOT APPLICABLE* *If unsure: CAN'T TELL/PARTIALLY*	☐ Yes ☐ Can't tell/partially ☐ No ☐ Not applicable (e.g. no studies or no data)
Comments (note important limitations or uncertainty)	
B.5 Did the review examine the extent to which specific factors might explain differences in the results of the included studies? ☐ Were factors that the review authors considered as likely explanatory factors clearly described? ☐ Was a sensible method used to explore the extent to which key factors explained heterogeneity? ☐ Descriptive/textual ☐ Graphical ☐ Meta-regression ☐ Other	☐ Yes ☐ Can't tell/partially ☐ No ☐ Not applicable (e.g. too few studies, no important differences in the results of the included studies, or the included studies were so dissimilar that it would not make sense to explore heterogeneity of the results)

Comments (note important limitations or uncertainty)	
B.6 Overall - how would you rate the methods used to analyse the findings relative to the primary question addressed in the review? *Summary assessment score B relates to the 5 questions in this section, regarding the analysis.* *If the "No" or "Partial" option is used for any of the 5 preceding questions, the review is likely to have important limitations. Examples of major limitations might include not reporting critical characteristics of the included studies or not reporting the results of the included studies.*	☐ **Major limitations** (limitations that are important enough that the results of the review are not reliable and they should not be used in the policy brief) ☐ **Important limitations** (limitations that are important enough that it would be worthwhile to search for another systematic review and to interpret the results of this review cautiously, if a better review cannot be found) ☐ **Reliable** (only minor limitations)
Use comments to specify if relevant, to flag uncertainty or need for discussion	

Section C: Overall assessment of the reliability of the review

C.1 Are there any other aspects of the review not mentioned before which lead you to question the results?	☐ Additional methodological concerns ☐ Robustness ☐ Interpretation ☐ Conflicts of interest (of the review authors or for included studies) ☐ Other ☐ No other quality issues identified

C.2 **Based on the above assessments of the methods how would you rate the reliability of the review?**

☐ **Major limitations** (exclude); briefly (and politely) state the reasons for excluding the review by completing the following sentence: *This review was not included in this policy brief for the following reasons:*

Comments (briefly summarise any key messages or useful information that can be drawn from the review for policy makers or managers):

☐ **Important limitations**; briefly (and politely) state the most important limitations by editing the following sentence, if needed, and specifying what the important limitations are: *This review has important limitations.*

☐ **Reliable**; briefly note any comments that should be noted regarding the reliability of this review by editing the following sentence, if needed: *This is a well-conducted systematic review with only minor limitations.*

NOTES

†**Risk of bias** is the extent to which bias may be responsible for the findings of a study.

Bias is a systematic error or deviation from the truth in results or inferences. In studies of the effects of health care, the main types of bias arise from systematic differences in the groups that are compared (selection bias), the care that is provided, or exposure to other factors apart from the intervention of interest (performance bias), withdrawals or exclusions of people entered into a study (attrition bias) or how outcomes are assessed (detection bias). Reviews of studies may also be particularly affected by reporting bias, where a biased subset of all the relevant data is available.

Assessments of the risk of bias are sometimes also referred to as assessments of the **validity** or **quality** of a study.

Validity is the extent to which a result (of a measurement or study) is likely to be true.

Quality is a vague notion of the strength or validity of a study, often indicating the extent of control over bias.

Vedlegg 3. Systematiske oversikter i Cochrane-rapporten, som vi ekskluderte

Her lister vi opp systematiske oversikter som inngår Cochrane-rapporten «Implementation strategies for health systems in low-income countries: an overview of systematic reviews», som vi vurderte til ikke å være relevante for vår problemstilling. Begrunnelsen er angitt i parentes etter hver referanse.

Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Viera A, Crotty K, Holland A, Brasure M, Lohr KN, Harden E, Tant E, Wallace I, Viswanathan M. Health Literacy Interventions and Outcomes: An Updated Systematic Review. Evidence Report/Technology Assesment No. 199. (Prepared by RTI International–University of North Carolina Evidence-based Practice Center under contract No. 290-2007-10056-I. AHRQ Publication Number 11-E006. Rockville, MD. Agency for Healthcare Research and Quality. March 2011.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Dwamena F, Holmes-Rovner M, Gaulden CM, Jorgenson S, Sadigh G, Sikorskii A, et al. Interventions for providers to promote a patient-centred approach in clinical consultations. Cochrane Database of Systematic Reviews 2012, Issue 12.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Everett T, Bryant A, Griffin MF, Martin-Hirsch PP, Forbes CA, Jepson RG. Interventions targeted at women to encourage the uptake of cervical screening. The Cochrane database of systematic reviews. 2011(5):CD002834.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Gould DJ, Moralejo D, Drey N, Chudleigh JH. Interventions to improve hand hygiene compliance in patient care. Cochrane Database Syst Rev. 2010(9):CD005186.
(Tiltak innen et avgrenset område – håndvask).

Haynes RB, Ackloo E, Sahota N, McDonald HP, Yao X. Interventions for enhancing medication adherence. Cochrane Database of Systematic Reviews 2008, Issue 2. Art. No.: CD000011.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Horsley T, Hyde C, Santesso N, Parkes J, Milne R, Stewart R. Teaching critical appraisal skills in healthcare settings. Cochrane Database Syst Rev 2011; 9(11) :CD001270.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Horvath T, Azman H, Kennedy GE, Rutherford GW. Mobile phone text messaging for promoting adherence to antiretroviral therapy in patients with HIV infection. Cochrane Database of Systematic Reviews 2012, Issue 3. Art. No.: CD009756. DOI:10.1002/14651858.CD009756.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Jia L, Yuan B, Lu Y, Garner P, Meng Q, Huang F. Strategies for expanding health insurance coverage in vulnerable populations. Cochrane Database of Systematic Reviews 2014, Issue 1. Art. No.: CD008194. DOI: 10.1002/14651858.CD008194.pub2.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Khunpradit S, Tavender E, Lumbiganon P, Laopaiboon M, Wasiak J, Gruen RL. Non-clinical interventions for reducing unnecessary caesarean section. Cochrane Database of Systematic Reviews 2011, Issue 6. Art. No.: CD005528. DOI: 10.1002/14651858.CD005528.pub2.
(Tiltak innen et avgrenset området – bruk av keisersnitt).

Lee ACC, Lawn JE, Cousens S, Kumar V, Osrin D, Bhutta ZA, et al. Linking families and facilities for care at birth: What works to avert intrapartum-related deaths? Int J Gynecol Obstet 2009;107:65-88.
(Tiltak innen et avgrenset området – fødselshjelp/nyfødtmedisin).

Legare F, Ratte S, Stacey D, Kryworuchko J, Gravel K, Graham ID, et al. Interventions for improving the adoption of shared decision making by healthcare professionals. Cochrane Database Syst Rev. 2010 (5):CD006732.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Lutge EE, Wiysonge CS, Knight SE, Volmink J. Material incentives and enablers in the management of tuberculosis. Cochrane Database of Systematic Reviews 2012, Issue 1. Art. No.: CD007952. DOI: 10.1002/14651858.CD007952.pub2.
(Tiltak innen avgrenset området – tuberkulose).

Nglazi MD, Bekker LG, Wood R, Hussey GD, Wiysonge CS. Mobile phone text messaging for promoting adherence to anti-tuberculosis treatment: a systematic review. BMC Infect Dis. 2013 Dec 2;13:566. doi: 10.1186/1471-2334-13-566.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Nicolson DJ, Knapp P, Raynor DK, Spoor P. Written information about individual medicines for consumers. Cochrane Database of Systematic Reviews 2009, Issue 2. Art. No.: CD002104
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Opiyo N, English M. In-service training for health professionals to improve care of the seriously ill newborn or child in low and middle-income countries (Review). Cochrane Database of Systematic Reviews 2010, Issue 4. Art. No.: CD007071.
(Tiltak innen avgrenset området – behandling av alvorlig syke barn).

Oyo-Ita A, Nwachukwu CE, Oringanje C, Meremikwu MM. Interventions for improving coverage of child immunization in low and middle-income countries. Cochrane Database of Systematic Reviews 2011, Issue 7.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Pande S. A systematic review of the effectiveness of pharmacist provided services on patient outcomes, health-service utilisation and costs in low- and middle-income countries. MPH Dissertation University of Adelaide, Australia, 2010. Draft EPOC review.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Perrier L, Mrklas K, Shepperd S, Dobbins M, McKibbon KA, Straus SE. Interventions encouraging the use of systematic reviews in clinical decision-making: a systematic review. Journal of general internal medicine. 2011;26(4):419-26.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Polec AL, O'Neill J, Welch V, Ueffing E, Tanjong Ghogomu E, Pardo Pardo J, et al. Strategies to increase the ownership and use of insecticide-treated bednets to prevent malaria. Cochrane Database of Systematic Reviews, Issue xxx . Art. No.: xxx
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Ranji SR, Steinman M, Shojania K, Gonzalez R. Interventions to Reduce Unnecessary Antibiotic Prescribing. A Systematic Review and Quantitative Analysis. Med Care 2008;46: 847- 862.
(Tiltak innen avgrenset området – antibiotikaforskrivning).

Sibley LM, Sipe TA, Barry D. Traditional birth attendant training for improving health behaviours and pregnancy outcomes. Cochrane Database of Systematic Reviews 2012, Issue 8.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Simoni JM, Pearson CR, Pantalone DW, Marks G, Crepaz N. Efficacy of interventions in improving highly active antiretroviral therapy adherence and HIV-1 RNA viral load. A meta-analytic review of randomized controlled trials. J Acquir Immune Defic Syndr. 2006;43 Suppl 1:S23-35.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Simoni JM. Antiretroviral adherence interventions: translating research findings to the real world clinic. Curr HIV/AIDS Rep. 2010;7(1):44-51.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Sorsdahl K, Ipser JC, Stein DJ. Interventions for educating traditional healers about STD and HIV medicine. Cochrane Database of Systematic Reviews 2009, Issue 4. Art. No.: CD007190. DOI: 10.1002/14651858.CD007190.pub2.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Vidanapathirana J, Abramson MJ, Forbes A, Fairley C. Mass media interventions for promoting HIV testing. Cochrane Database of Systematic Reviews 2005, Issue 3. Art. No.: CD004775.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Yakoob MY, Ali MA, Ali MU, et al. The effect of providing skilled birth attendance and emergency obstetric care in preventing stillbirths. BMC public health. 2011;11 Suppl 3:S7.
(Ikke tiltak for å endre spesifikk klinisk praksis blant helsepersonell).

Vedlegg 4: Systematiske oversikter fra PDQ-søket, som vi så bort fra etter nærmere vurdering

Her lister vi opp de systematiske oversiktene fra PDQ-søket som i første runde ble vurdert som aktuelle å ta inn i rapporten, men som likevel ble droppet. Begrunnelsen er oppgitt i parentes under hver referanse.

Rosen, M. A., et al. (2012). "In situ simulation in continuing education for the health care professions: A systematic review." The Journal of continuing education in the health professions 32(4): 243-254.
(Dekket av andre systematiske oversikter: Forsetlund 2009 og Reeves 2013).

Reeves, S., et al. (2010). "The effectiveness of interprofessional education: key findings from a new systematic review." Journal of interprofessional care 24(3): 230-241.
(Dekket av Reeves 2013).

Ferguson, J., et al. (2014). "Factors influencing the effectiveness of multisource feedback in improving the professional practice of medical doctors: a systematic review." BMC medical education 14(1): 76.
(Spesialtilfelle av «audit & feedback». Antas tilstrekkelig dekket av Ivers 2012).

Kawamoto, K., et al. (2005). "Improving clinical practice using clinical decision support systems: a systematic review of trials to identify features critical to success." BMJ (Clinical research ed.) 330(7494): 765.
(Foreligger flere nyere systematiske oversikter).

Fung, C. H., et al. (2008). "Systematic review: the evidence that publishing patient care performance data improves quality of care." Annals of internal medicine 148(2): 111-123.
(Foreligger to nyere systematiske oversikter, inkludert én Cochrane-oversikt).

Veloski, J., et al. (2006). "Systematic review of the literature on assessment, feedback and physicians' clinical performance: BEME Guide No. 7." Medical teacher 28(2): 117-128.
(Dekket av nyere Cochrane-oversikt (Ivers 2012)).

Rosenthal, M. B. and R. G. Frank (2006). "What is the empirical basis for paying for quality in health care?" Medical care research and review : MCRR 63(2): 135-157.
Foreligger nyere systematiske oversikter, inkluderte én Cochrane-oversikt (Scott 2011)).

Petersen, L. A., et al. (2006). "Does pay-for-performance improve the quality of health care?" Annals of internal medicine 145(4): 265-272.
(Foreligger nyere systematiske oversikter, inkluderte én Cochrane-oversikt – Scott 2011).

Van Herck, P., et al. (2010). "Systematic review: Effects, design choices, and context of pay-for-performance in health care." BMC health services research 10: 247.
(Dekket av nyere Cochrane-oversikt (Schott 2011)).

Jamal, A., et al. (2009). "The impact of health information technology on the quality of medical and health care: a systematic review." The HIM journal 38(3): 26-37.
(Vurdert å ha «major limitations»).

Berger, Z. D., et al. (2013). "Can public reporting impact patient outcomes and disparities? A systematic review." Patient education and counseling.
(Dreier seg I første rekke ikke om endring av klinisk praksis, men på generelle pasientutfall. Altså ikke spesifikt implementering av retningslinjer, men generell kvalitetsforbedring. Den type tiltak er dessuten dekket av en Cochrane-oversikt med mer relevant vinkling – Ketelaar 2011).

Thomassen, O., et al. (2013). "The effects of safety checklists in medicine: a systematic review." Acta anaesthesiologica Scandinavica.
(Vanskelig å vurdere kvaliteten på dokumentasjonen ettersom risiko for feildkilder – «bias» - ikke er vurdert. Vi har dessuten en noenlunde fersk Cochrane-oversikt på samme tema: Ko 2011).

Houle, S. K., et al. (2012). "Does performance-based remuneration for individual health care practitioners affect patient care?: a systematic review." Annals of internal medicine **157**(12): 889-899.
(Overlapper med eksisterende og praktisk talt like ny Cochrane review: Ketelaar 2011).

Totten, A. M., et al. (2012). "Closing the quality gap: revisiting the state of the science (vol. 5: public reporting as a quality improvement strategy)." Evidence report/technology assessment(208.5): 1-645.

(Overlapp med eksisterende Cochrane-oversikt som kun er litt eldre: Ketelaar 2011. Dessuten var også resultatene til Totten inkonklusive, slik også Ketelaar 2011 er det).

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Vedlegg 5: Systematiske oversikter om organisatoriske endringer, generell kvalitetsforbedring m.m.

Her følger ei liste over systematiske oversikter vi identifiserte gjennom vårt litteratursøk i PDQ-databasen, om generelle kvalitetsforbedringstiltak, organisatoriske endringer, pasientsikkerhet o.l. Vi vurderte disse ikke som tiltak for implementering av spesifikke kliniske retningslinjer. Noen av disse gjelder spesifikk fagområder eller pasientgrupper, andre er mer generelle.

Dette er systematiske oversikter som vi ekskluderte fra vår rapport basert på gjennomlesning av kun titler og sammendrag – de er altså ikke nærmere vurdert av oss.

Organisatoriske endringer

Teamorganisering

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Chan, P. S., et al. (2010). "Rapid Response Teams: A Systematic Review and Meta-analysis." Archives of internal medicine **170**(1): 18-26.

Coory, M., et al. (2008). "Systematic review of multidisciplinary teams in the management of lung cancer." Lung cancer (Amsterdam, Netherlands) **60**(1): 14-21.

Dietz, A. S., et al. (2014). "A systematic review of teamwork in the intensive care unit: What do we know about teamwork, team tasks, and improvement strategies?" Journal of critical care.

Niven, D. J., et al. (2013). "Critical Care Transition Programs and the Risk of Readmission or Death After Discharge From an ICU: A Systematic Review and Meta-Analysis." Critical care medicine **42**(1): 179-187.

Proia, K. K., et al. (2014). "Team-based care and improved blood pressure control: a community guide systematic review." American journal of preventive medicine **47**(1): 86-99.

Speed, L. and K. E. Harding (2013). "Tracheostomy teams reduce total tracheostomy time and increase speaking valve use: a systematic review and meta-analysis." Journal of critical care **28**(2): 216.e211-210.

Samhandling, tverrfaglig samarbeid etc.

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Janine, A., et al. (2012). "Collaborative care for depression and anxiety problems." Cochrane Database of Systematic Reviews **10**(2): CD006525.

Nazir, A., et al. (2013). "Systematic review of interdisciplinary interventions in nursing homes." Journal of the American Medical Directors Association **14**(7): 471-478.

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"Disease management programs" o.l. (pasientopplæring, bruk av retningslinjer, hensiktsmessige konsultasjoner, adekvat bruk av medisiner m.m.)

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di Dante, A. and A. Checchi (2008). "Implementation of Clinical Pathway in the management of patients with diabetic foot." International Nursing Perspectives **8**(3): 109-112.

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Pasientsikkerhet (redusere risiko for feil)

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Nicolay, C. R., et al. (2012). "Systematic review of the application of quality improvement methodologies from the manufacturing industry to surgical healthcare." The British journal of surgery **99**(3): 324-335.

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Vedlegg 6: Systematiske oversikter om tiltak for spesifikke problemstillinger, visse pasientgrupper eller fagfelt etc.

Her følger en opplisting av systematiske oversikter om tiltak for kvalitetsforbedring og implementering av retningslinjer som er begrenset til spesifikke problemstillinger (visse pasientgrupper, utvalgte typer helsepersonell, spesifikke kliniske områder, avgrensete deler av helsetjenesten etc.). Disse ble identifisert gjennom vårt generelle, brede søk i PDQ-databasen. I og med at vi ikke søkte spesifikt etter systematiske oversikter for visse problemstillinger, kan det ikke tas for gitt at denne liste er uttømmende. Det gjelder f.eks. om tiltak for implementering av anbefalinger for utredning og diagnostikk (som er tema for en separat rapport fra Kunnskapssenteret, som vil bli publisert i løpet av 2015).

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Slag

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Palliativ behandling

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Vedlegg 7. «SUPPORT-summaries»

Vedlegg 7-1
Bright TJ, Wong A, Dhurjati R, Bristow E, Bastian L, Coeytaux RR, et al. Effect of clinical decision-support systems: a systematic review. Annals of internal medicine. 2012;157(1):29-43.

Vedlegg 7-2
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Vedlegg 7-1

Bright TJ, Wong A, Dhurjati R, Bristow E, Bastian L, Coeytaux RR, et al. Effect of clinical decision-support systems: a systematic review. Annals of internal medicine. 2012;157(1):29-43.

Do clinical decision-support systems improve care?

Clinical decision-support systems are electronic systems designed to aid health professionals directly in clinical decision-making. They use information about individual patients to generate patient-specific assessments or recommendations.

Key messages

➔ **Clinical decision-support systems improve adherence to clinical practice recommendations.**

Clinical decision-support systems probably lead to a modest improvement in morbidity outcomes.

Clinical decision-support systems may reduce treatment costs and total costs (low certainty of the evidence), but their cost-effectiveness is uncertain.

Who is this summary for?

People making decsions concering the use of clinical decision-support systems in health care.

! This summary includes:

– **Key findings** from research based on a systematic review

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:

Bright TJ, Wong A, Dhurjati R, Bristow E, Bastian L, Coeytaux RR, et al. Effect of clinical decision-support systems: a systematic review. Annals of internal medicine. 2012;157(1):29-43

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

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

Background references on this topic:

Background

There are many types of clinical decision-support systems. This systematic review examined three categories of decision-support systems:
1) "Classic systems" that typically include alerts, reminders, order sets, or drug-dose calculations which automatically remind the clinician of a specific action, or care summary dashboards that provide performance feedback on quality indicators.
2) Information retrieval tools – e.g. an "infobutton" embedded in a clinical information system – designed to aid clinicians in the search and retrieval of context-specific knowledge from information sources based on patient-specific information from a clinical information system.
3) Knowledge resources – e.g. UpToDate, Epocrates, and MD Consult – that consist of distilled primary literature that allows selection of content relevant to a specific patient to facilitate decision making at the point of care.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review 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 effectiveness of clinical decision-support systems

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised trials of clinical decision-support systems	148 randomised trials
Participants	Healthcare providers	Healthcare providers
Settings	Real clinical settings	Many studies (51) were conducted in environments with established health information technology, and many (46) were multisite studies involving multiple institutions.
Outcomes	Clinical, health care process, user workload and efficiency, relationship centred, economic	128 studies assessed healthcare process measures, 29 assessed clinical outcomes, and 22 measured costs.
Date of most recent search: January 2011		
Limitations: Only English language publications were included.		

Bright TJ, Wong A, Dhurjati R, Bristow E, Bastian L, Coeytaux RR, et al. Effect of clinical decision-support systems: a systematic review. Annals of internal medicine. 2012;157(1):29-43

Summary of findings

148 studies were included in this review. Most studies (128) assessed whether clinical decision-support systems influenced clinicians' decision making, and 29 studies assessed clinical outcomes. Costs were reported in in 22 studies.

The studies found that clinical decision-support systems improve clinical decision making (adherence to recommendations). Furthermore, such systems probably have a modest effect on health outcomes. The certainty of this evidence was moderate. Evidence from academic and community inpatient and ambulatory settings showed that locally and commercially developed clinical decision-support systems may reduce treatment costs and total costs, but the findings of six cost-effectiveness studies were inconsistent. None of the studies reported effects of clinical decision-support systems on the number of patients seen per unit time or clinician workload.

Clinical decision-support systems increase adherence to clinical practice recommendations. The certainty of this evidence is high.

Clinical decision-support systems probably lead to a modest improvement in morbidity outcomes. The certainty of this evidence is moderate.

Clinical decision-support systems may reduce treatment costs and total costs (low certainty of the evidence), but their cost-effectiveness is uncertain because the certainty of the evidence is very low.

About the certainty of the evidence (GRADE) *

⊕⊕⊕⊕
High: It is very likely that the effect will be close to what was found in the research.

⊕⊕⊕◯
Moderate: It is likely that the effect will be close to what was found in the research, but there is a possibility that it will be substantially different.

⊕⊕◯◯
Low: It is likely that the effect will be substantially different from what was found in the research, but the research provides an indication of what might be expected.

⊕◯◯◯
Very low: The anticipated effect is very uncertain and the research does not provide a reliable indication of what might be expected.

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

See last page for more information.

The effects of clinical decision-support systems on qualty of care provided by health professionals

People Health care providers
Settings Clinical settings
Inter-vention Clinical decision-support systems
Com-parison Usual care or no clinical decision-support system, or compared to the same system with additional features.

Outcomes	Absolute effect*		Relative effect (95% CI)	Certainty of the evidence (GRADE)
	Without clinical decision-support system	**With clinical decision-support system**		
	Difference (Margin of error)			
Recommended preventive care service ordered or completed	Moderate adherence* 60 per 100	68 per 100	OR 1.42 (1.27 to 1.58)	⨁⨁⨁⨁ High
	Difference: 8 more patients receiving recommended care per 100 patient encounters (Margin of error: 6 to 10 more patients)			
	Low adherence* 20 per 100	26 per 100		
	Difference: 6 more patients receiving recommended care per 100 patient encounters (Margin of error: 4 to 8 more patients)			
Recommended test ordered or completed	Moderate adherence* 60 per 100	72 per 100	OR 1.72 (1.47 to 2.00)	⨁⨁⨁◯ Moderate
	Difference: 12 more patients receiving recommended care per 100 patient encounters (Margin of error: 9 to 15 more patients)			
	Low adherence* 20 per 100	30 per 100		
	Difference: 10 more patients receiving recommended care per 100 patient encounters (Margin of error: 7 to 13 more patients)			

The effects of clinical decision-support systems on qualty of care provided by health professionals – continued

Outcomes	Absolute effect*		Relative effect (95% CI)	Certainty of the evidence (GRADE)
	Without clinical decision-support system	**With clinical decision-support system**		
	Difference (Margin of error)			
Recommended treatment ordered or prescribed	Moderate adherence*		OR 1.57 (1.35 to 1.82)	⊕⊕⊕⊕ High
	60 per 100	70 per 100		
	Difference: 10 more patients receiving recommended care per 100 patient encounters (Margin of error: 7 to 13 more patients)			
	Low adherence*			
	20 per 100	28 per 100		
	Difference: 8 more patients receiving recommended care per 100 patient encounters (Margin of error: 5 to 11 more patients)			

Margin of error = Confidence interval (95% CI) OR: Odds ratio GRADE: GRADE Working Group grades of evidence (see above and last page)
* The assumed adherence WITHOUT a clinical decision-support system were selected to help interpret the overall odds ratio in situations in which there is low adherence (20% desired practice) and moderate adherence (60% desired practice). The corresponding adherence WITH a clinical decision-support system (and the 95% confidence interval for the difference) is based on the overall odds ratio (and its 95% confidence interval).

Additional information

Related literature

Arditi C, Rege-Walther M, Wyatt JC, Durieux P, Burnand B. Computer-generated reminders delivered on paper to healthcare professionals; effects on professional practice and health care outcomes. The Cochrane database of systematic reviews. 2012;12:CD001175.

Shojania KG, Jennings A, Mayhew A, Ramsay CR, Eccles MP, Grimshaw J. The effects of on-screen, point of care computer reminders on processes and outcomes of care. The Cochrane database of systematic reviews. 2009(3):CD001096.

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Conflict of interest

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

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A Fretheim. Do clinical decision-support systems improve care? A SUPPORT Summary of a systematic review. March 2015. 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:

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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

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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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Vedlegg 7-2

Arditi C, Rege-Walther M, Wyatt JC, Durieux P, Burnand B. Computer-generated reminders delivered on paper to healthcare professionals; effects on professional practice and health care outcomes. The Cochrane database of systematic reviews. 2012;12:CD001175.

What are the effects of computer-generated reminders delivered on paper to healthcare professionals on professional practice and health care outcomes?

Reminders may provide important information or advice to healthcare professionals in an accessible and relevant format at a particularly appropriate time. For example, when a doctor sees a patient for an annual check-up, she might receive the patient's chart with a reminder section detailing the screening tests that are due that year.

Key messages

Computer-generated reminders delivered on paper probably improve professional practice.

If the reminders provide space to enter a response and if they provide an explanation, they may be more effective than if they do not.

Reminders may be more effective for providing vaccinations than other reminders, while reminders to discuss issues with patients may be less effective.

Who is this summary for?

For decisions makers considering to use computer-generated reminders delivered on paper, to healthcare professionals

This summary includes:

- **Key findings** from research based on a systematic review

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:

Arditi C, Rège-Walther M, Wyatt JC, Durieux P, Burnand B. Computer-generated reminders delivered on paper to healthcare professionals; effects on professional practice and health care outcomes. Cochrane Database of Systematic Reviews 2012, Issue 12. Art. No.: CD001175. DOI: 10.1002/14651858.CD001175.pub3.

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

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

Background references on this topic:

Background

Clinical practice does not always reflect best practice and evidence, partly because of subconscious acts of omission, information overload, or inaccessible information. Reminders might help clinicians overcome these problems by prompting the doctor to recall information that they already know or would be expected to know and by providing information or guidance in a more accessible and relevant format, at a particularly appropriate time.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review 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 effects of computer-generated reminders delivered on paper to healthcare professionals on processes of care and outcomes of care

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised trials and non-randomised trials	27 randomised trials and 5 non-randomised trials
Participants	Qualified healthcare professionals	Mainly physicians, but some studies targeted other healthcare professionals
Settings	Not specified	All studies were conducted in the USA (29) or Canada (3), and mostly in outpatient settings
Outcomes	Processes of care or outcomes of care	Most trials measured processes of care, such as prescribing or test ordering. Five studies also reported outcomes of care such as blood pressure.

Date of most recent search: June 2012

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

Arditi C, Rège-Walther M, Wyatt JC, Durieux P, Burnand B. Computer-generated reminders delivered on paper to healthcare professionals; effects on professional practice and health care outcomes. Cochrane Database of Systematic Reviews 2012, Issue 12. Art. No.: CD001175. DOI: 10.1002/14651858.CD001175.pub3.

Summary of findings

The review included 32 trials, all conducted in North America. The reminders were mostly for physicians, and reported prescribing, test ordering and other processes of care.

1) Computer-generated reminders delivered on paper compared usual care

In 24 trials, the comparison was between computer-generated reminders and usual care, i.e. no specific comparison intervention.

Computer-generated reminders delivered on paper probably improve professional practice.

About the certainty of the evidence (GRADE) *

⊕⊕⊕⊕
High: It is very likely that the effect will be close to what was found in the research.

⊕⊕⊕◯
Moderate: It is likely that the effect will be close to what was found in the research, but there is a possibility that it will be substantially different.

⊕⊕◯◯
Low: It is likely that the effect will be substantially different from what was found in the research, but the research provides an indication of what might be expected.

⊕◯◯◯
Very low: The anticipated effect is very uncertain and the research does not provide a reliable indication of what might be expected.

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

See last page for more information.

Computer-generated reminders delivered on paper compared usual care

People	Healthcare professionals
Settings	Outpatient care in North America (USA and Canada)
Intervention	Computer-generated reminders delivered on paper
Comparison	Usual care

Outcomes	**Median improvement (interquartile range)**	Number of studies	Certainty of the evidence (GRADE)
Processes of care	Median 11.2% (6.5% to 19.6%)	24	⊕⊕◯◯ Moderate*

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

*The review authors downgraded the level of quality of the evidence from high to moderate because of methodological limitations in the included studies and possible publication bias. They did not find other serious limitations in the other factors (indirectness of evidence, inconsistency of results, and imprecision of results).

2) Computer-generated reminders delivered on paper with additional interventions compared with the same additional interventions alone

In 11 trials, computer-generated reminders with additional interventions as part of a multifaceted intervention were compared to the same additional interventions alone (without reminders).

Adding computer-generated reminders delivered on paper to other interventions probably improves professional practice.

Computer-generated reminders delivered on paper with one or more co-interventions, compared with co-intervention(s) for improving professional practice			
People	Healthcare professionals		
Settings	Outpatient care in North America		
Intervention	Computer-generated reminders delivered on paper with one or more co-interventions		
Comparison	Co-interventions		
Outcomes	**Median improvement (interquartile range)**	Number of studies	Certainty of the evidence (GRADE)
Processes of care	Median 4.0% (3.0% to 6.0%)	13 comparisons from 11 studies	⨁⨁◯◯ Moderate*

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

*The review authors downgraded the level of quality of the evidence from high to moderate because of methodological limitations in the included studies and possible publication bias. They did not find other serious limitations in the other factors (indirectness of evidence, inconsistency of results, and imprecision of results).

Additional information

Related literature

Grimshaw JM, Thomas RE, MacLennan G, Fraser C, Ramsay CR, Vale L, et al. Effectiveness and efficiency of guideline dissemination and implementation strategies. Health technology assessment. 2004;8(6):iii-iv, 1-72.
Shojania KG, Jennings A, Mayhew A, Ramsay CR, Eccles MP, Grimshaw J. The effects of on-screen, point of care computer reminders on processes and outcomes of care. The Cochrane database of systematic reviews. 2009(3):CD001096.
Bright TJ, Wong A, Dhurjati R, Bristow E, Bastian L, Coeytaux RR, et al. Effect of clinical decision-support systems: a systematic review. Annals of internal medicine. 2012;157(1):29-43.
Damiani G, Pinnarelli L, Colosimo SC, Almiento R, Sicuro L, Galasso R, et al. The effectiveness of computerized clinical guidelines in the process of care: a systematic review. BMC health services research. 2010;10:2.

This summary was prepared by

Atle Fretheim, Norwegian Knowledge Centre for the Health Services

Conflict of interest

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

Acknowledgements

This summary has been peer reviewed by: Andrew D. Oxman, Norway

This review should be cited as

Arditi C, Rège-Walther M, Wyatt JC, Durieux P, Burnand B. Computer-generated reminders delivered on paper to healthcare professionals; effects on professional practice and health care outcomes. Cochrane Database of Systematic Reviews 2012, Issue 12. Art. No.: CD001175. DOI: 10.1002/14651858.CD001175.pub3.

The summary should be cited as

Fretheim A. What are the effects of computer-generated reminders delivered on paper to healthcare professionals on professional practice and health care outcomes? A SUPPORT Summary of a systematic review. December 2014. 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.

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Vedlegg 7-3

Shojania KG, Jennings A, Mayhew A, Ramsay CR, Eccles MP, Grimshaw J. The effects of on-screen, point of care computer reminders on processes and outcomes of care. The Cochrane database of systematic reviews. 2009(3):CD001096.

Do on-screen, point of care computer reminders improve the processes of care and clinical outcomes?

Gaps between recommended practice and routine care are widely known. Interventions designed to close these gaps while providers make decisions, like point of care computer reminders, offer a promising strategy.

Key messages

On-screen, point of care computer reminders may slightly improve process outcomes

On-screen, point of care computer reminders may slightly improve clinical outcomes

Who is this summary for?

People deciding wether to introduce health information technology into practice

This summary includes:

– **Key findings** from research based on a systematic review

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:

Shojania KG, Jennings A, Mayhew A, Ramsay CR, Eccles MP, Grimshaw J. The effects of on-screen, point of care computer reminders on processes and outcomes of care. Cochrane database of systematic reviews. 2009 (3):CD001096. PubMed PMID: 19588323.

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
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Glossary of terms used in this report:
www.supportsummaries.org/glossary

Background references on this topic:

Background

Reminders that are embedded into electronic medical records or order entry systems (e.g. for diagnostic tests), can automatically alert physicians and other health care providers about clinical information relevant to the specific clinical task he/she is about to perform. These "point of care"-types of reminders are of great interest to those involved in quality improvement efforts because of their likely low marginal cost, and because they can address multiple topics. This review did not include other types of reminders, e.g. letters sent to physicians to remind them to follow up specific patients.

As for most other quality improvement interventions, reminders primarly focus on improving processes of care, such as prescribing of drugs in accordance with clinical practice guidelines or encouraging smokers to stop. The main goal is, of course, to improve clinical outcomes, i.e. improve the patients' health.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

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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 evaluate the effects on processes and outcomes of care attributable to on-screen computer reminders delivered to clinicians at the point of care.

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised and quasi-randomised Trials assessing on-screen, point of care computer reminders.	28 studies included. Four studies contained two comparisons, resulting in 32 included comparisons (6 from quasi-randomised trials) Type of reminder: specific (n=18)/generic (n=9); active (n=28) / passive (n=4) mode of delivery; delivered via CPOE (n=14)/ No CPOE (n=18).
Participants	Studies in which the majority of providers (> 50%) consisted of physicians or physician trainees	Outpatient (24 comparisons) and inpatient (8 comparisons) health care providers.
Settings	Points of care that could deliver computer reminder to clinicians at the time they are engaged in the target activity of interest.	19 comparisons came from the United States and 13 from United Kingdom, Italy, Norway, Australia, Canada, New Zealand, the Netherlands
Outcomes	Process outcomes: percentage of patients receiving a target recommended process of care, duration of antibiotic therapy or time to respond to a lab value. Clinical outcomes: endpoints as death or development of a pulmonary embolism, and intermediate endpoints, such as achievement of a target blood pressure or serum cholesterol level, or mean blood pressure or cholesterol level.	All process outcomes (N = 32) Prescription of medications (N = 21) Prescription of recommended vaccines (N = 6) Test ordering (N = 13) Elements of recommended documentation (N = 3) Other process outcomes (N = 7; i.e. composite compliance with a guideline). Clinical outcomes (N = 8; i.e. target and mean blood pressure, cholesterol targets, pulmonary embolism, and mortality)
Date of most recent search: July 2008		
Limitations: This is a well conducted systematic review with minor limitations.		

Shojania KG, Jennings A, Mayhew A, Ramsay CR, Eccles MP, Grimshaw J. The effects of on-screen, point of care computer reminders on processes and outcomes of care. Cochrane database of systematic reviews. 2009 (3):CD001096. PubMed PMID: 19588323.

Summary of findings

The findings from twenty-eight included studies showed that computer reminders achieved small to modest improvements in both process and clinical outcomes. Surprisingly, the effect was not higher in the studies where reminders were used in combination with other quality improvement interventions.

On-screen, point of care computer reminders may

Slightly improve process outcomes (Low certainty of the evidence).

Slightly improve clinical outcomes (Low certainty of the evidence).

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.

Improvements in process adherence and clinical outcomes

People: Health care providers (> 50%) consisted of physicians
Settings: Ambulatory care or hospital centres
Intervention: On-screen, point of care computer reminders
Comparison: Usual care

Outcomes	Impact: Median absolute improvement (Interquartile range)	Number of comparisons	Certainty of the evidence (GRADE)
Adherence to process outcomes	**All process outcomes: 4.2% (0.8% to 18.8%)** - Prescription of medications: 3.3% (0.5% to 10.6%) - Prescription of recommended vaccines: 3.8% (0.5% to 6.6%) - Test ordering: 3.8% (0.4% to 16.30%) - Elements of recommended documentation: 0.0% (-1.0% to 1.3%) - Other process outcomes: 1.0% (0.8% to 8.5%)	32	⊕⊕◯◯ **Low**
Proportion of patients that improved clinical outcomes	**2.5% (1.3% to 4.2%)** -Systolic blood pressure: median reduction of 1.0 mmHg (Interquartile range from 2.3 mmHg reduction to 2.0 mmHg increase).	8	⊕⊕◯◯ **Low**

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

Additional information

Related literature

These systematic reviews provide evidence that could be relevant to understand computer reminders interventions

Arditi C, Rege-Walther M, Wyatt JC, Durieux P, Burnand B. Computer-generated reminders delivered on paper to healthcare professionals; effects on professional practice and health care outcomes. Cochrane database of systematic reviews. 2012;12:CD001175. PubMed PMID: 23235578.

Bright TJ, Wong A, Dhurjati R, Bristow E, Bastian L, Coeytaux RR, et al. Effect of clinical decision-support systems: a systematic review. Annals of internal medicine. 2012 Jul 3;157(1):29-43. PubMed PMID: 22751758.

This study describes practical lessons learned from implementing systems in a wide range of challenging environments over the last decade.

Fraser HS, Blaya J. Implementing medical information systems in developing countries, what works and what doesn't. AMIA Annual Symposium proceedings / AMIA Symposium AMIA Symposium. 2010;2010:232-6. PubMed PMID: 21346975. Pubmed Central PMCID: 3041413.

This summary was prepared by

Agustín Ciapponi, Instituto de Efectividad Clínica y Sanitaria, Buenos Aires, Argentina

Conflict of interest

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

Acknowledgements

This summary has been peer reviewed by: Ola Kdouh, Lebanon; Kaveh G. Shojania, Canada

This review should be cited as

Shojania KG, Jennings A, Mayhew A, Ramsay CR, Eccles MP, Grimshaw J. The effects of on-screen, point of care computer reminders on processes and outcomes of care. Cochrane database of systematic reviews. 2009 (3):CD001096.

The summary should be cited as

Ciapponi A, Do on-screen, point of care computer reminders improve the processes of care and clinical outcomes? A SUPPORT Summary of a systematic review. March 2013. www.supportsummaries.org

About certainty of the evidence (GRADE)

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

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Vedlegg 7-4

O'Brien MA, Rogers S, Jamtvedt G, Oxman AD, Odgaard-Jensen J, Kristoffersen DT, et al. Educational outreach visits: effects on professional practice and health care outcomes. The Cochrane database of systematic reviews. 2007(4):CD000409.

Do educational outreach visits improve health professional practice and patient outcomes?

Educational outreach visits entail the use of a trained person from outside the practice setting to meet with healthcare professionals in their practice. They provide information that may include feedback about professional performance with the intent of improving practice. This type of face-to-face visit is also called academic detailing and educational visiting. The intervention may be tailored based upon previously identified barriers to change or combined with other interventions, including reminders or interventions targeted directly at patients, such as recall clinics.

Key messages

The quality of care delivered to patients

- can be improved by educational outreach visits alone; and
- may be improved more by educational outreach visits combined with organisational changes, than by educational outreach visits alone

For prescribing, the effects are relatively consistent and small, but potentially important.

For other types of professional performance, the effects vary widely from small to modest improvements.

Who is this summary for?

People making decisions concerning use of educational outreach visits in primary and community health care.

This summary includes:

– **Key findings** from research based on a systematic review

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:

O'Brien MA, Rogers S, Jamtvedt G, et al. Educational outreach visits: effects on professional practice and health care outcomes. Cochrane Database of Systematic Reviews 2007, 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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

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

Background references on this topic:

Background

Educational outreach visits have been identified as an intervention that may improve the practice of healthcare professionals. Even small changes in practices, such as inappropriate prescribing, might be potentially important when many patients are affected. This summary is based on an update of a Cochrane review first published in 1997 and focuses on the effects of educational outreach in improving healthcare professional practice and patient outcomes.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review 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 educational outreach on health professional practice and patient outcomes

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised trials of educational outreach to healthcare professionals by trained persons that may be from the same organisation, but not from the same practice site. The information given may include feedback about their performance.	69 trials were found.
Participants	Healthcare professionals responsible for patient care.	Primary care physicians or teams practising in community settings (53 studies), physicians in hospital settings (6), nurses and nursing assistants (4), pharmacists/owners and counter attendants (2), dentists (1).
Settings	Any practice setting.	Mostly primary and community healthcare settings. The studies were from the USA (23), the UK (22), Europe (14), Australia (8), Indonesia (2) and Thailand (1).
Outcomes	Objectively measured professional performance in a healthcare setting or healthcare outcomes. Studies that only measured knowledge or performance in a test situation were excluded.	Most studies reported multiple effect measures and many did not specify a primary outcome. Twenty-eight studies (34 comparisons) contributed to the calculation of the median for the main comparison of professional performance. Educational outreach was compared to another type of intervention, usually audit and feedback, in 8 trials (12 comparisons).
Date of most recent search: March 2007		
Limitations: This is a well-conducted systematic review with only minor limitations.		

O'Brien MA, Rogers S, Jamtvedt G, et al. Educational outreach visits: effects on professional practice and health care outcomes. Cochrane Database of Systematic Reviews 2007, Issue 4.

Summary of findings

The review included 69 studies involving more than 15,000 health professionals. Most studies (36) were done in Europe, North America (23), and Australia (8). Three studies were conducted in middle-income countries in Asia.

1) Educational outreach compared to no intervention

There were 37 trials that reported changes in professional performance. The 12 studies that reported patient outcomes were largely inconclusive, even when improvements in health professional practice were found, most likely because of insufficient power to detect important differences in patient outcomes.

Educational outreach can improve appropriate prescribing. The certainty of this evidence was high.

Educational outreach can probably improve other practices. The certainty of this evidence was 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.

Educational outreach compared to no intervention

People	Healthcare professionals
Settings	Primary and community health care
Intervention	Educational outreach
Comparison	No intervention (including educational materials alone)

Outcomes	**Absolute effect** Median adjusted increase in compliance with desired practice* (interquartile range)	Certainty of the evidence (GRADE)
Appropriate prescribing†	4.8% improvement (3.0% to 6.5%)	⊕⊕⊕⊕ High
Non-prescribing practices†§	6.0% improvement (3.6% to 16.0%)	⊕⊕⊕◯ Moderate

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

* Adjusted for baseline differences in compliance.
† Follow-up was short in most trials.
§ Management of patients at increased cardiovascular risk, with asthma or diabetes; or delivery of preventive services, including counselling for smoking cessation.

2) Educational outreach compared to another intervention

Eight trials compared interventions that included educational outreach to another type of intervention (such as audit and feedback or reminders) to improve health professional practices such as better documentation of care, preventive cardiovascular care or prostate specific antigen testing in primary care. Interventions that included outreach visits appeared to be more effective than audit and feedback alone. The differences tended to be small, similar to the differences between outreach visits and no intervention. One trial found a large improvement (39%) in the care of patients with cardiovascular risk factors with outreach visits and a prevention coordinator compared to outreach visits alone. One trial measured patient outcomes. It found an increase in the percentage of patients achieving blood pressure control after clinicians received an educational outreach visit that included audit and feedback as well as a reminder.

Educational outreach may improve health professional practices compared to audit and feedback. The certainty of this evidence was low.

Organisational changes, such as introducing a prevention coordinator, may be more effective than outreach visits alone. The certainty of this evidence was low.

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). http://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). http://www.hta.nhs.uk/fullmono/mon806.pdf

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

This summary was prepared by

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Conflict of interest

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

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This summary has been peer reviewed by: Mary Ann O'Brien, Canada; Martin Eccles, UK; Tracey Perez Koehlmoos, Bangladesh; Dennis Ross-Degnan, USA; Tomás Pantoja, Chile; Merrick Zwarenstein, Canada

This review should be cited as

O'Brien MA, Rogers S, Jamtvedt G, et al. Educational outreach visits: effects on professional practice and health care outcomes. Cochrane Database of Systematic Reviews 2007, Issue 4.

The summary should be cited as

Ciapponi A, García Martí S. Do educational outreach visits improve health professional practice or patient outcomes? A SUPPORT Summary of a systematic review. February 2014. 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

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Vedlegg 7-5

Baskerville NB, Liddy C, Hogg W. Systematic review and meta-analysis of practice facilitation within primary care settings. Annals of family medicine. 2012;10(1):63-74.

Does practice facilitation in primary care settings improve adoption of evidence-based guidelines?

Practice facilitation is a multifaceted approach whereby skilled individuals, either internal or external to a setting, are used to promote adoption and use of evidence-based guidelines within the setting (practice).

Key messages

The use of practice facilitation as a multifaceted approach probably improves the adoption of evidence-based guidelines in primary care settings.

Who is this summary for?

People making decisions on strategies to improve adoption of evidence-based guidelines.

This summary includes:

– **Key findings** from research based on a systematic review

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:

Baskerville NB, Liddy C, Hogg W. Systematic review and meta-analysis of practice facilitation within primary care settings. Annals of family medicine. 2012;10(1):63-74.

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

Glossary of terms used in this report:
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Background references on this topic:
See back page

Background

Adoption of evidence-based guidelines is a challenge in many primary care settings because availability of knowledge alone is often insufficient for change in practice. Lecture-based educative strategies used to disseminate evidence-based guidelines are often ineffective while multifaceted interventions including strategies such as interactive education and reminders are often more effective. Practice facilitation is a multifaceted approach that uses internal or external individuals to encourage evidence-based practice. About half of the studies in the review used registered nurses or masters' educated individuals with training as practice facilitators. All studies included audit with feedback, practice consensus building and goal setting as key components, as well as quality improvement strategies directed to the system or organization such as plan-do-study-act. Many also incorporated collaborative meetings, either face to face or virtual. There was variation in the process of implementation among the studies related to the facilitator qualifications, tools employed (e.g. audit, feedback, reminder systems, etc.), intensity (from 2 meetings each 0.25 hrs to 18 meetings each 6 hours) and duration of intervention (from 2 to 26 months).

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review 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 undertake a quantitative synthesis of the effect of practice facilitation on evidence-based practice behaviour.

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomized and non-randomized controlled and prospective studies of individual practice facilitation	23 studies of practice facilitation interventions. 17 randomized trials, 3 cluster randomized trials, and 3 non-randomized controlled studies
Participants	All health care providers in primary care practices	Studies included 1,398 practices (697 allocated to facilitation intervention and 701 in the control group)
Settings	Primary care settings	Primary care practices in the US (12 studies), the Netherlands (5), Canada (3), the UK (2) and Australia (1)
Outcomes	Change in evidence-based practice behaviour	Studies reported this outcome in varied ways, such as increased screening or management of different conditions and improvements in care provided
Date of most recent search: December 2010		
Limitations: This is a well-conducted systematic review. However, the literature searches were restricted to English-language studies.		

Baskerville NB, Liddy C, Hogg W. Systematic review and meta-analysis of practice facilitation within primary care settings. Annals of family medicine. 2012;10(1):63-74.

Summary of findings

The review found 23 studies conducted in high-income countries that evaluated the use of practice facilitation to improve adoption of evidence-based guidelines. The interventions varied considerably including components such as audit and feedback, consensus building and goal setting, and collaborative meetings. The duration and intensity of the intervention also varied considerably. The studies measured changes in evidence-based practice in different ways, depending on the target behavior, evidence-based guideline and intervention components.

Practice facilitation for improving adoption of evidence-based guidelines in primary care settings.

23 studies conducted in primary care settings in high-income countries measured the mean change in target behavior as a result of the intervention.

Practice facilitation probably improves the adoption of evidence-based guidelines in primary care settings (moderate certainty evidence).

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.

Practice facilitation for adoption of evidence-based guidelines

People Health care providers in primary care practices
Settings High-income countries
Intervention Practice facilitation
Comparison No practice facilitation

Outcomes	Absolute effect **Without practice facilitation**	**With practice facilitation**	Relative effect (95% CI)	Certainty of the evidence (GRADE)
	Difference (Margin of error)			
Desired professional practice (adherence to guideline recommendations)	Moderate adherence* 60 per 100	81 per 100	OR 2.76 (2.18 to 3.43)†	⨁⨁⨁◯ Moderate‡
	Difference: 21 more patients receiving recommended practice per 100 patient encounters (Margin of error: 17 to 24 more)			
	Low adherence* 20 per 100	41 per 100		
	Difference: 21 more patients receiving recommended practice per 100 patient encounters (Margin of error: 15 to 26 more)			

Margin of error = Confidence interval (95% CI) OR: Odds ratio GRADE: GRADE Working Group grades of evidence (see above and last page)

* The reviewer selected two levels of baseline adherence to desired practice to help interpret the overall odds ratio (and its 95% confidence interval). Moderate adherence was assumed at 60% of desired practice while low adherence was assumed at 20% of desired practice.

† The OR and confidence intervals are from a meta-analysis using standardized mean differences (SMD), converted to an odds ratio by the review authors (SMD=0.56, 95% CI 0.43 to 0.68).

‡ The certainty of the evidence is moderate because of study limitations (risk of bias) in some of the included studies and heterogeneity of results.

Additional information

Related literature

Nagykaldi Z, Mold JW, Aspy CB. Practice facilitators: a review of the literature. Fam Med. 2005;37(8):581-588.

Practice Facilitation Handbook: Training Modules for New Facilitators and Their Trainers. June 2013.

Agency for Healthcare Research and Quality, Rockville, MD. http://www.ahrq.gov/professionals/prevention-chronic-care/improve/system/pfhandbook/index.html

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Conflict of interest

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

Acknowledgements

This summary has been peer reviewed by: Mike English, Kenya; Mary Ann O'brien, Canada; Bruce Baskerville, Canada

This review should be cited as

Baskerville NB, Liddy C, Hogg W. Systematic review and meta-analysis of practice facilitation within primary care settings. Annals of Family Medicine. 2012;10(1):63-74.

The summary should be cited as

Gathu M. Does practice facilitation in primary care settings improve adoption of evidence-based guidelines?. A SUPPORT Summary of a systematic review. January 2014. 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:
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Vedlegg 7-6

Ivers N, Jamtvedt G, Flottorp S, Young JM, Odgaard-Jensen J, French SD, et al. Audit and feedback: effects on professional practice and healthcare outcomes. The Cochrane database of systematic reviews. 2012;6:CD000259.

Does providing healthcare professionals with data about their performance improve their practice?

Audit and feedback is commonly used as a strategy to improve professional practice. It appears logical that healthcare professionals would be prompted to modify their practice if given feedback that their clinical practice was inconsistent with that of their peers or accepted guidelines.

Key messages

Interventions that include audit and feedback (alone or as a core component of a multifaceted intervention) probably improve slightly professionals' adherence to desired practice compared with usual care

The effects on patient outcomes of interventions that include audit and feedback may range from little or no difference to some improvement, compared with usual care

The effects of audit and feedback vary depending on the way the intervention is designed and delivered

The effects of audit and feedback on adherence with desired practice or patient outcomes, when compared to other implementation strategies (e.g. reminders, educational outreach), are mixed

Who is this summary for?

People making decisions concerning use of audit and feedback to improve the quality of health care

This summary includes:

- **Key findings** from research based on a systematic review

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:

Ivers N et al. Audit and feedback: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews* 2012, Issue 6.

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

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

Background references on this topic:

Background

Audit and feedback can be defined as "any summary of clinical performance of health care over a specified period of time" that is fed back to health care providers with the aim of improving practice or the organisation of care. Feedback can be given in a written, electronic or verbal format. The summary of clinical performance may also include recommendations for clinical action.

As audit and feedback is used widely within health care organisations, it is important to consider its likely effects on clinical performance.

How this summary was prepared

The methods used to assess the quality of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review might not 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 audit and feedback on the practice of healthcare professionals and on patient outcomes

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised controlled trials (RCTs) assessing the effects of audit and feedback. Interventions were only included if audit and feedback was a core or essential element	140 RCTs were included. The interventions used were highly heterogeneous with respect to their content, format, timing and source. Targeted behaviours were prescribing (39 RCTs), management of patients with diabetes or cardiovascular diseases (34 RCTs), and test ordering (31 RCTs). The remaining RCTs varied widely in terms of health conditions and targeted behaviours.
Participants	Healthcare professionals responsible for patient care	In most of the RCTs the healthcare professionals were physicians. Other providers targeted included dentists (1 RCT), nurses (3 RCTs), pharmacists (2 RCTs) and mix of providers (14 RCTs).
Settings	Healthcare settings	Country: USA (69), Canada (11), UK or Ireland (21), Australia or New Zealand (10), and elsewhere (29). Only 4 studies were conducted in LMICs: Sudan (2), Thailand (1), and Laos (1). Health care setting: outpatient settings (94 RCTs), inpatient settings (36 RCTs). In 10 RCTs the clinical setting was unclear.
Outcomes	Objectively measured provider performance or healthcare outcomes	There was large variation in outcome measures, and many trials reported multiple primary outcomes. Most trials measured professional practice, with some also reporting patient outcomes.
Date of most recent search: December 2010		
Limitations: This is a well conducted systematic review with only minor limitations.		

Ivers N et al. Audit and feedback: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews* 2012, Issue 6.

Summary of findings

The review included 140 trials. Most trials were conducted in high income countries (136). Four trials were conducted in low- and middle-income countries (two in Sudan and one each in Thailand and Laos).

The interventions used were very varied in terms of content, format, timing and source. In 121 trials, audit and feedback was targeted at physicians and in 91 trials one or more groups received a multifaceted intervention where audit and feedback was considered the core, essential component.

Many trials reported multiple primary outcomes. Most trials reported professional practice outcomes, such as prescribing or use of laboratory tests, while some trials also reported patient outcomes, such as smoking status or blood pressure.

1) Audit and feedback (with or without other interventions) compared to usual care

A total of 133 comparisons from 85 trials were included in the primary analysis. There was important heterogeneity in the results across trials.

Interventions that include audit and feedback probably improve slightly professionals' adherence to desired practice, compared with usual care. The certainty of the evidence was moderate

The effects on patient outcomes of interventions that include audit and feedback may range from little or no difference to some improvement, compared with usual care. The certainty of the evidence was low

The effects of audit and feedback appear to vary based on the way the intervention is designed and delivered. Audit and feedback may be more effective when baseline professional performance is low; when the source of the feedback is a supervisor or senior colleague; when the feedback is delivered at least monthly; when it is provided both verbally and in a written format; and when it includes both explicit targets and an action plan

About quality of evidence (GRADE)

⊕⊕⊕⊕
High: It is very likely that the effect will be close to what was found in the research.

⊕⊕⊕◯
Moderate: It is likely that the effect will be close to what was found in the research, but there is a possibility that it will be substantially different.

⊕⊕◯◯
Low: It is likely that the effect will be substantially different from what was found in the research, but the research provides an indication of what might be expected.

⊕◯◯◯
Very low: The anticipated effect is very uncertain and the research does not provide a reliable indication of what might be expected.

For more information, see last page.

Audit and feedback compared to usual care

Patients or population: Health care professionals
Settings: Primary and secondary care in high, middle and low income countries
Intervention: Audit and feedback with or without other interventions
Comparison: Usual care

Outcomes	**Impact (weighted absolute improvement or decrease)[1]**	Number of comparisons/studies [participants]	Certainty of the evidence (GRADE)
Adherence to desired practice (dichotomous outcomes)	Median absolute increase in desired practice: 4.3% (IQR 0.5% to 16.0%)	82 comparisons from 49 studies[2] [2310 clusters/groups of health providers (from 32 cluster trials) and 2053 health professionals (from 17 trials allocating individual providers)]	⊕⊕⊕◯ Moderate
Adherence to desired practice (continuous outcomes)	Median percent change in desired practice: 1.3% (IQR 1.3% to 28.9%)	26 comparisons from 21 studies. [661 clusters/groups of health providers (from 13 cluster trials) and 605 health professionals (from 8 trials allocating individual providers)]	⊕⊕⊕◯ Moderate
Patient outcomes (dichotomous)	Median absolute decrease in desired outcomes: 0.4% (IQR -1.3% to 1.6%)	12 comparisons from 6 studies	⊕⊕◯◯ Low
Patient outcomes (continuous)	Median percent change in desired outcomes: 17% (IQR 1.5 to 17%)	8 comparisons from 5 studies	⊕⊕◯◯ Low

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

[1]The post-intervention risk differences are adjusted for pre-intervention differences between the comparison groups to account for baseline differences. The effect was weighted across studies by the number of health professionals involved in the study to ensure that small trials did not contribute as much to the estimate of effect as large trials.
[2]Many studies had more than two arms and therefore contributed multiple comparisons of audit and feedback versus usual care

2) Audit and feedback compared to other interventions

A total of 22 comparisons from 20 trials were included in this analysis.

The effects of audit and feedback on adherence with desired practice or patient outcomes, when compared to other implementation strategies (e.g. reminders, educational outreach, case management, financial incentives, patient-mediated interventions), are mixed

Additional information

Related literature

Gardner B, Whittington C, McAteer J, Eccles MP, Michie S. Using theory to synthesise evidence from behaviour change interventions: the example of audit and feedback. Social Science in Medicine 2010; 70(10): 1618–25.

Hysong SJ. Meta-Analysis: audit and feedback features impact effectiveness on care quality. Medical Care 2009; 47(3): 356–63.

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

NorthStar is a tool that provides a range of information, checklists, examples and tools on how to best design and evaluate quality improvement interventions. http://support-collaboration.org/policy.htm

This summary was prepared by

Tomás Pantoja, Department of Family Medicine, Pontificia Universidad Católica de Chile, Chile and Signe Flottorp, Norwegian Knowledge Centre for the Health Services, Oslo, Norway

Conflict of interest

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

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This review should be cited as

Ivers N, Jamtvedt G, Flottorp S, Young JM, Odgaard-Jensen J, French SD, O'BrienMA, JohansenM, Grimshaw J, Oxman AD. Audit and feedback: effects on professional practice and healthcare outcomes. Cochrane Database of Systematic Reviews 2012, Issue 6. Art. No.: CD000259.

The summary should be cited as

Pantoja T, Flottorp S. Does providing healthcare professionals with data about ther performance improve their practice? A SUPPORT Summary of a systematic review. March 2013. www.supportsummaries.org

About quality of evidence (GRADE)

The quality of the evidence is a judgement about the extent to which we can be confident that the estimates of effect are correct. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the type of study design (randomised trials versus observational studies), five factors that can lower confidence in an estimate of effect (risk of bias, inconsistency of the results across studies, indirectness, imprecision of the overall estimate across studies, and publication bias), and three factors that can increase confidence (a large effect, a dose response relationship, and plausible confounding that would increase confidence in an estimate). For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions on page 3.

For more information about GRADE:
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Vedlegg 7-7

Flodgren G, Parmelli E, Doumit G, Gattellari M, O'Brien MA, Grimshaw J, et al. Local opinion leaders: effects on professional practice and health care outcomes. The Cochrane database of systematic reviews. 2011(8):CD000125.

Does use of local opinion leaders improve professional practice and patient outcomes?

Opinion leaders are a small number of individuals in a community who have an outsize influence on what the rest of the communty does. They are active media users, who interpret the meaning of media messages or content for lower-end media users. Because of their influence, it is thought that opinion leaders may be able to persuade healthcare providers to use the best available evidence when treating and managing patients.

Key messages

Opinion leaders probably influence the behaviour of healthcare professionals.

Patient outcome data were not reported by studies included in the review.

Who is this summary for?

People making decisions concerning interventions to improve healthcare worker performance.

This summary includes:

– **Key findings** from research based on a systematic review

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:

Flodgren G, Parmelli E, Doumit G, Gattellari M, O'Brien MA, Grimshaw J, Eccles MP. Local opinion leaders: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews* 2011, Issue 8. Art. No.: CD000125. DOI: 10.1002/14651858.CD000125.pub4.

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low and middle-income countries.
www.support-collaboration.org

Glossary of terms used in this report:
www.support-collaboration.org/summaries/explanations.htm

Background references on this topic:
See back page

Background

In order to reduce inappropriate patient management and improve patient outcomes it is important to speed up and optimise the process of translating research evidence into policy and practice. One way of doing this may be through the use of local opinion leaders. Opinion leaders are active voices in their community, people who speak out and get asked for advice a lot. Such individuals are held in high esteem by those who accept their opinions. This review addresses the effectiveness of local opinion leaders in improving professional practice and patient outcomes.

This summary is based on an updated Cochrane Review published in 2011 by Gerd Flodgren and colleagues, which assessed the effectiveness of the use of local opinion leaders to disseminate and implement evidence-based practice.

How this summary was prepared

The methods used to assess the quality of the review are described here: www.support-collaboration.org/summaries/methods.htm

Knowing what's not known is important

A good quality review might find any well-designed studies. Although that is disappointing, it is important to know what is not known as well as what is known.

About the systematic review underlying this summary

Review objective: To assess the effectiveness of local opinion leaders in improving the behaviour of healthcare professionals and patient outcomes

	What the review authors searched for	What the review authors found
Interventions	Randomised controlled trials (RCTs)	18 RCTs in which opinion leaders delivered educational initiatives to members of their own healthcare profession
Participants	Health care professionals in charge of patient care	Physicians (14 RCTs); nurses (2 RCTs); physicians, nurses and midwives (2 RCTs)
Settings	Any healthcare setting	Hospitals (14 RCTs), primary care practice (1 RCT), both primary and secondary care (1 RCT), and undefined healthcare settings (2 RCTs); in the United States of America (10 RCTs), Canada (6 RCTs), China (1 RCT), and Argentina and Uruguay (1 RCT)
Outcomes	Objective measures of professional performance and/or patient outcomes	General management of a clinical problem (all 18 RCTs)
Date of most recent search: May 2009		
Limitations: This is a well-conducted systematic review with only minor limitations.		

Flodgren G, Parmelli E, Doumit G, Gattellari M, O'Brien MA, Grimshaw J, Eccles MP. Local opinion leaders: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews* 2011, Issue 8. Art. No.: CD000125. DOI: 10.1002/14651858.CD000125.pub4.

Summary of findings

The review identified 18 randomised controlled trials (RCTs) involving more than 296 hospitals and 318 primary care physicians, mostly in high-income countries. Targeted behaviours involved the general management of a clinical problem in in obstetrics (5 RCTs), cardiology (4 RCTs), oncology (3 RCTs), and other medical conditions (6 RCTs) . Opinion leaders were used alone in five RCTs, and supplemented by other strategies (such as audit and feedback, reminders, faxed evidence summaries, printed educational materials, educational meetings, and workshops) in 13 RCTs. The duration of follow-up, varied widely, ranging from one week to 18 months.

Combining evidence from the 18 studies show that:

Use of local opinion leaders probably improves the behaviour of healthcare professionals. The certainty of the evidence was moderate.

Patient outcome data were not reported by studies included in the review.

About quality of evidence (GRADE)

⊕⊕⊕⊕
High: Further research is very unlikely to change our confidence in the estimate of effect.

⊕⊕⊕◯
Moderate: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

⊕⊕◯◯
Low: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.

⊕◯◯◯
Very low: We are very uncertain about the estimate.

For more information, see last page.

Local opinion leaders alone or together with other intervention(s) compared with no intervention, the same other intervention or other interventions for improving compliance with desired practice

Population: Physicians (n=14 studies); nurses (n=2); physicians, nurses and midwives (n=2).
Settings: Hospitals (n=14), primary care practice (n=1), both primary and secondary care (n=1), and undefined healthcare settings (n=2); in USA (n=10), Canada (n=6), China (n=1), and Argentina and Uruguay (n=1)
Intervention: Local opinion leaders with or without other interventions
Comparison: No intervention or other intervention(s)

Outcomes	**Adjusted absolute improvement (risk difference)*** **Median** (Interquartile range)	Number of studies	Certainty of the evidence (GRADE)	Comments
Compliance with desired practice	Median +12% (+6% to +14.5%)	18 studies	⊕⊕⊕◯ Moderate[$]	The effects of opinion leader interventions varied across the 63 outcomes reported, from 15% decrease in compliance to 72% increase in compliance with desired practice. The median adjusted absolute increase for the main comparisons were: i) Opinion leaders versus no intervention, +9%; ii) Opinion leaders alone vs a single intervention, +14%; iii) Opinion leaders with one or more additional intervention(s) vs the one or more additional intervention(s), +10%; and iv) Opinion leaders as part of multiple interventions compared to no intervention, +10%.

* The post-intervention risk differences are adjusted for pre-intervention differences between the comparison groups.

$ We rated down the evidence for heterogeneity of effects. The effects of interventions across the 63 outcomes reported varied from a 15% decrease in compliance to a 72% increase in compliance with desired practice.

Additional information

Related literature

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Conflict of interest

None. For details, see: www.support-collaboration.org/summaries/coi.htm

Acknowledgements

This summary has been peer reviewed by: Gerd Flodgren, UK; Edgardo Abalos, Argentina.

This review should be cited as

Flodgren G, Parmelli E, Doumit G, Gattellari M, O'Brien MA, Grimshaw J, Eccles MP. Local opinion leaders: effects on professional practice and health care outcomes.
Cochrane Database of Systematic Reviews 2011, Issue 8. Art. No.: CD000125. DOI: 10.1002/14651858.CD000125.pub4.

This summary should be cited as

Wiysonge CS. Does use of local opinion leaders improve professional practice and patient outcomes? A SUPPORT Summary of a systematic review. March 2015. www.supportsummaries.org

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About quality of evidence (GRADE)

The quality of the evidence is a judgement about the extent to which we can be confident that the estimates of effect are correct. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the type of study design (randomised trials versus observational studies), the risk of bias, the consistency of the results across studies, and the precision of the overall estimate across studies. For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions on page 3.
For more information about GRADE: www.support-collaboration.org/summaries/grade.pdf

SUPPORT collaborators:

The Alliance for Health Policy and Systems Research (HPSR) is an international collaboration aiming to promote the generation and use of health policy and systems research as a means to improve the health systems of developing countries.
www.who.int/alliance-hpsr

The Cochrane Effective Practice and Organisation of Care Group (EPOC) is a Collaborative Review Group of the Cochrane Collaboration: an international organisation that aims to help people make well informed decisions about health care by preparing, maintaining and ensuring the accessibility of systematic reviews of the effects of health care interventions.
www.epoc.cochrane.org

The Evidence-Informed Policy Network (EVIPNet) is an initiative to promote the use of health research in policymaking. Focusing on low and middle-income countries, EVIPNet promotes partnerships at the country level between policy-makers, researchers and civil society in order to facilitate both policy development and policy implementation through the use of the best scientific evidence available.
www.who.int/rpc/evipnet/en/

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Vedlegg 7-8

Baker R, Camosso-Stefinovic J, Gillies C, et al. Tailored interventions to address determinants of practice. *Cochrane Database of Systematic Reviews* 2015, *in press*.

Are tailored strategies effective for changing healthcare professional practice?

Attempts to change the behaviour of health professionals may be impeded by a variety of different barriers. Change may be more likely if implementation strategies are specifically chosen to address potential obstacles. It is logical that strategies tailored to overcome identified barriers should be more effective than non-tailored ones.

Key messages

Interventions tailored to address identified barriers are probably more likely to improve professional practice thanno intervention or the dissemination of guidelines alone

It is uncertain whether tailored interventions are more likely to improve professional practice than non-tailored interventions

Little is not known about how best to identify barriers to improving professional practice and how to tailor interventions to address these barriers

Who is this summary for?

For decisions makers considering to use computer-generated reminders delivered on paper, to healthcare professionals

This summary includes:

- **Key findings** from research based on a systematic review

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:

Baker R, Camosso-Stefinovic J, Gillies C, et al. Tailored interventions to address determinants of practice. *Cochrane Database of Systematic Reviews* 2015, in press.

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

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

Background references on this topic:

Background

Strategies to disseminate and implement change in the performance of healthcare professionals have had variable impacts. The level of effectiveness has varied not only between different strategies, but also when the same strategy has been used on different occasions.

Tailored implementation strategies require the identification of important barriers to change and the selection of implementation strategies most likely to be effective in addressing them. Tailoring strategies might help to maximise their potential impact. There are a variety of ways to identify barriers and to select ways to address them. Methods to identify barries include: making informal judgements, brainstorming, surveys, interviews, focus groups and observations. Methods to select ways to address identified barriers include theory-based approaches and experimental modeling of potential interventions.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review 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 effectiveness of interventions tailored to address identified barriers to change on professional practice or patient outcomes

Types of	What the review authors searched for	What the review authors found
Study designs & interventions	Randomised trials of interventions tailored to address prospectively identified barriers to change. Studies had to involve a comparison group that did not receive a tailored intervention or a comparison between an intervention that was targeted at both individual and social or organisational barriers, compared with an intervention targeted at only individual barriers.	Thirty-two randomised trials. Interventions assessed were varied and included (among others): printed materials; educational outreach; clinical guidelines; audit and feedback; interactive workshops; teaching sessions/discussions of patients; facilitation/practice meetings; and individual/group academic detailing.
Participants	Healthcare professionals responsible for patient care.	Primarily physicians (14 studies), mixed professional groups (8), nurses (4); pharmacists (2), geriatric teams (1), gynaecology teams (1), and physicians (1).
Settings	Any setting	Primary care or community settings (17 studies), hospital settings (7), nursing homes (3), and one each in child health clinics, community pharmacies, a regional health system, and a Medicaid program. The studies were conducted in the United States of America (USA) (12), the Netherlands (5), the United Kingdom (UK) (4), Belgium (2), Indonesia (2), Norway (2), South Africa (2), and Canada (1), Ireland (1), and Portugal (1).
Outcomes	Objectively measured professional performance (excluding self-reporting) or patient outcomes in a healthcare setting or both.	Change in prescribing behaviour (12 studies), management of a disease (including diagnosis, assessment and treatment) (11), preventive care (6), influenza vaccination (2), reporting adverse drug reactions (1).
Date of most recent search: December 2014		
Limitations: This is a well-conducted systematic review with only minor limitations.		

Baker R, Camosso-Stefinovic J, Gillies C, et al. Tailored interventions to address determinants of practice. *Cochrane Database of Systematic Reviews* 2015, in press.

Summary of findings

The review included 32 studies. The studies used a variety of methods to identify barriers, including face-to-face interviews, focus groups with physicians or patients, surveys, workshop discussions, telephone interviews, literature reviews or brainstorming by opinion leaders.

The participants in the studies were mostly physicians and nurses. The interventions included the distribution of printed materials, educational outreach, workshop activities, small discussion groups, auditing and feedback. Most of the interventions were targeted at changing prescribing behaviour.

Tailored interventions compared to no intervention or guidelines alone

Mixed results were found both across and within the included studies. There was variation in the reporting of how barriers had influenced the design of the intervention. The selection of interventions often relied on the judgements of the investigators and was not informed by explicit theories of behavioural or organisational change.

Seventeen studies compared a tailored intervention to no intervention, of which it was possible to include seven in the main analysis. Fifteen sutides compared a tailored intervention to a non-tailored intervention, of which it was possible to include eight in the main analysis. In all but one of the eight trials, the non-tailored intervention consisted of the dissemination of written educational materials or guidelines.

The odds ratio ranged from 1.08 to 10.59 for the 15 studies included in the main analysis. The 17 studies not included in the main analysis had findings showing variable effectiveness consistent with the studies included in the main analysis. The combined (average) odds ratio for these 15 studies was 1.56 (95% CI: 1.27 to 1.93), in favour of tailored interventions. In a situation where adherence with recommended practice was initially 60% this would correspond to an improvement to 70%. In a situation where adherence was initially 20% this would correspond to an improvement to 28%.

The authors investigated the following possible causes of variability in the effect of tailored interventions across the 15 studies: the type of control group (no intervention versus dissemination of written educational materials or guidelines), the risk of bias, explicit utilisation of a theory to select the interventions, adjustment to local factors, and the number of domains addressed by the determinants identified. None of these were found to be associated with the reported effectiveness of the tailored interventions.

Tailored interventions probably improve professional practice compared to no intervention or the dissemination of guidelines alone. The certainty of this evidence was moderate.

It is uncertain whether tailored interventions are more likely to improve professional practice than non-tailored interventions.

About the certainty of the evidence (GRADE) *

⊕⊕⊕⊕
High: It is very likely that the effect will be close to what was found in the research.

⊕⊕⊕◯
Moderate: It is likely that the effect will be close to what was found in the research, but there is a possibility that it will be substantially different.

⊕⊕◯◯
Low: It is likely that the effect will be substantially different from what was found in the research, but the research provides an indication of what might be expected.

⊕◯◯◯
Very low: The anticipated effect is very uncertain and the research does not provide a reliable indication of what might be expected.

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

See last page for more information.

Tailored interventions compared to no intervention or guidelines alone

People Healthcare professionals responsible for patient care
Settings Mostly primary care in the USA and Europe
Intervention Tailored interventions to implement practice guidelines
Comparison No intervention or dissemination of guidelines alone

Outcomes	Absolute effect **Without tailored intervention**	**With tailored intervention**	Relative effect (95% CI)	Certainty of the evidence (GRADE)
	Difference (Margin of error)			
Desired professional practice (adherence to guideline recommendations)	Moderate adherence* 60 per 100 patients	70 per 100 patients	OR 1.56 (1.27 to 1.93)	⨁⨁⨁◯ Moderate†
	Difference: 10 more patients receiving recommended practice per 100 patient encounters (Margin of error: 6 to 14 more patients)			
	Low adherence* 20 per 100 patients	28 per 100 patients		
	Difference: 8 more patients receiving recommended practice per 100 patient encounters (Margin of error: 4 to 13 more patients)			

Margin of error = Confidence Interval (95% CI) OR: Odds Ratio
GRADE: GRADE Working Group grades of evidence (see above and last page)

* The assumed adherence WITHOUT the tailored intervention was selected to aid interpretation of the overall odds ratios in situations in which there was low adherence (20% desired practice) and moderate adherence (60% desired practice). The corresponding adherence WITH the intervention (and the 95% confidence interval for the difference) is based on the overall odds ratio (and its 95% confidence interval).

† The OR and confidence intervals shown are taken from a meta-regression. The results of 14 studies not included in the meta-regression indicated that, on average, tailored interventions improve professional practice. However, the effects were mixed.

Additional information

Related literature

Fretheim A, Munabi-Babigumira S, Oxman AD, et al. SUPPORT Tools for Evidence-informed policymaking in health 6: Using research evidence to address how an option will be implemented. Health Res Policy Syst 2009; 7 Suppl 1:S6.

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Krause J, Van Lieshout J, Klomp R, et al. Identifying determinants of care for tailoring implementation in chronic diseases: an evaluation of different methods. Implementation science 2014; 9:102.

Huntink E, Lieshout J van, Aakhus E, et al. Stakeholders' contributions to tailored implementation programs: an observational study of group interview methods. Implementation Science 2014; 9:185.

Wensing M, Huntink E, van Lieshout J, et al. Tailored implementation of evidence-based practice for patients with chronic diseases. PloS One 2014; 9(7):e101981.

This summary was prepared by

Sebastián García Martí and Agustín Ciapponi, Argentine Cochrane Centre IECS -Institute for Clinical Effectiveness and Health Policy- Iberoamerican Cochrane Network, Argentina

Conflict of interest

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

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The review should be cited as

Baker R, Camosso-Stefinovic J, Gillies C, et al. Tailored interventions to address determinants of practice. *Cochrane Database of Systematic Reviews* 2015, in press

The summary should be cited as

García Martí S, Ciapponi A. Are tailored strategies effective for changing healthcare professional behaviour? A SUPPORT Summary of a systematic review. March 2015. 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

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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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Vedlegg 7-9

Forsetlund L, Bjorndal A, Rashidian A, Jamtvedt G, O'Brien MA, Wolf F, et al. Continuing education meetings and workshops: effects on professional practice and health care outcomes. The Cochrane database of systematic reviews. 2009(2):CD003030

Do continuing education meetings and workshops for healthcare professionals improve professional practice and healthcare outcomes?

An important aim of continuing education for healthcare professionals is to improve professional practice so that patients can receive improved health care. Educational meetings and printed educational materials are the most common types of continuing education for health professionals. Educational meetings include lectures, workshops and courses. The meetings can be highly variable in terms of content, number of participants, the degree and type of interaction, length and frequency.

Key messages

Educational meetings alone or combined with other interventions probably improve professional practice and healthcare outcomes for patients.

Educational meetings may be more effective with higher attendance at the educational meetings, mixed interactive and didactic educational meetings compared to only interactive or only didactic educational meetings.

Educational meetings may not be effective for complex behaviours and they may be less effective for less serious outcomes.

Who is this summary for?

People making decisions concerning the use of educational meetings to improve the quality of healthcare.

This summary includes:

- **Key findings** from research based on a systematic review

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:

Forsetlund L, Bjørndal A, Rashidian A, Jamtvedt G, O'Brien MA, Wolf F, Davis DA, Odgaard-Jensen J, Oxman AD. Continuing education meetings and workshops. Cochrane Database of Systematic Reviews, 2009 Apr 15;(2):CD003030

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

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

Background references on this topic:

Background

Health professionals need continuing education to be updated and improve practice. In many countries continuing medical education is mandated by professional or regulatory bodies or stimulated by incentives. Each year billions of dollars worldwide are spent on continuing medical education activities. Nearly all health professionals in high-income countries attend educational meetings, such as lectures and workshops. The amount of continuing education time spent at educational meetings is second only to the amount of time spent reading, by self-report.

This summary is based upon an update of a systematic review on continuing education meetings and workshopspublished in 2009.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review 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 address the following questions: 1) Do educational meetings and workshops improve professional practice and healthcare outcomes? 2) What are the effects of educational meetings compared with the effects of other interventions? and 3) Can changes in how educational meetings are done increase the effects

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	The following types of educational meetings: conferences, lectures, workshops, seminars, symposia and courses. Only randomised trials were included.	81 trials were found (74 cluster randomised trials, 7 randomised by providers). Targeted behaviours were preventive care (11), test ordering (3), screening (6), prescribing (13), general management of a wide array of problems (41) and other (7). The interventions were multifaceted in 32 studies.
Participants	Studies involving qualified health professionals or health professionals in post-graduate training were included. Studies involving only undergraduate students were excluded.	The health professionals were physicians in most trials, nurses (2), pharmacists (3), prescribers (1), or mixed providers (18).
Settings	All healthcare settings (primary care and hospital care).	General practice (43), community-based care (16), hospital- based care (17) and 'other type of settings' (5). Studies were from USA (28), UK (14), Netherlands (10), Canada (4), Australia (3), Norway (3), France (2); Sweden, Denmark, Belgium, Spain, Scotland (1 each); Indonesia (2), South-Africa (2); Mali, Thailand, Peru, Mexico, Zambia, Sri Lanka, New Zealand and Brazil (1 each).
Outcomes	All objectively measured health professional practice behaviours or patient outcomes.	There was wide variation in the outcome measures and number of outcomes measured. Median follow-up was 6 months (range 14 days to 2 years).
Date of most recent search: March 2006		
Limitations: This is a well-conducted systematic review with only minor limitations.		

Forsetlund L, Bjørndal A, Rashidian A, Jamtvedt G, O'Brien MA, Wolf F, Davis DA, Odgaard-Jensen J, Oxman AD. Continuing education meetings and workshops. Cochrane Database of Systematic Reviews. 2009 Apr 15;(2):CD003030.

Summary of findings

This updated review included 81 studies. Most studies were from Europe (34) and North America (32). Eleven studies were from low and middle-income countries. There was substantial variation in the complexity of the targeted behaviours, baseline compliance, characteristics of the inverventions and results.

1) Educational meetings compared to no intervention

The authors categorised the studies according to whether the educational meetings were interactive or didactic, the intensity of the educational meetings, attendance at the meetings, the complexity of the targeted behaviour, the seriousness of the outcome, and the level of baseline compliance. The effect appeared to be larger with higher attendance at the educational meetings. Educational meetings did not appear to be effective for complex behaviours and they appeared to be less effective for less serious outcomes.

Educational meetings with or without other interventions probably improve compliance with desired practice and patient outcomes. The certainty of this evidence was moderate.

About the certainty of the evidence (GRADE) *

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High: It is very likely that the effect will be close to what was found in the research.

⊕⊕⊕◯
Moderate: It is likely that the effect will be close to what was found in the research, but there is a possibility that it will be substantially different.

⊕⊕◯◯
Low: It is likely that the effect will be substantially different from what was found in the research, but the research provides an indication of what might be expected.

⊕◯◯◯
Very low: The anticipated effect is very uncertain and the research does not provide a reliable indication of what might be expected.

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

See last page for more information.

Educational meetings with or without other interventions* compared to no intervention

People	Healthcare providers
Settings	Primary and secondary care
Intervention	Educational meetings with or without other interventions
Comparison	No intervention

Outcomes	**Adjusted absolute improvement (risk difference)†** Median (Interquartile range)	Certainty of the evidence (GRADE)
Compliance with desired practice	Median 6% (1.8% to 15.9%)	⊕⊕⊕◯ Moderate
Patient outcomes	Median 3% (0.1% to 4.0%)	⊕⊕⊕◯ Moderate

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

*Several studies tested multifaceted interventions. The most commonly used co-interventions were reminders, patient education material, supportive services, feedback reports and educational outreach.
†The post intervention risk differences are adjusted for pre-intervention differences between the comparison groups.

2) Educational meetings alone compared to no intervention

Educational meetings alone probably improve compliance with desired practice and probably improve patient outcomes. The certainty of this evidence was moderate.

Educational meetings alone compared to no intervention		
People	Healthcare providers	
Settings	Primary and secondary care	
Intervention	Educational meetings without other interventions	
Comparison	No intervention	
Outcomes	**Adjusted absolute improvement (risk difference)*** Median (Interquartile range)	Certainty of the evidence (GRADE)
Compliance with desired practice	Median 6% (2.9 to 15.3)	⊕⊕⊕◯ Moderate
Patient outcomes	Median 3% (-0.9% to 4.0%)	⊕⊕⊕◯ Moderate

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

*The post intervention risk differences are adjusted for pre-intervention differences between the comparison groups.

3) Interactive educational meetings compared to didactic (lecture based) educational meetings

One trial that compared interactive educational meetings to didactic educational meetings was found that provided data. The aim of this study from Indonesia was to improve appropriate drug use in acute diarrhoea to prevent dehydration and death. Locally arranged interactive educational meetings were compared to didactic educational meetings arranged for all prescribers in a health district. A slightly larger improvement was reported for the group receiving interactive education (adjusted risk difference 1.4%).

The authors of the review categorised all the included studies according to whether the educational meetings were interactive or didactic and analysed the results to find out if this could explain the variations in effect among the studies. They found that interactive educational meetings alone were not consistently more effective than didactic educational meetings alone, but that interventions that they had categorised as mixed interactive and didactic educational meetings were more effective than either one alone.

Interactive educational meetings may be slightly more effective than lecture-based meetings.

Mixed interactive and didactic educational meetings may be more effective than only interactive or only didactic educational meetings.

Additional information

Related literature

O'Brien MA, Freemantle N, Oxman AD, Wolf F, Davis DA, Herrin J. Continuing education meetings and workshops: effects on professional practice and healthcare outcomes. Cochrane Database of Systematic Reviews 2001, Issue 1.

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http://www.hta.nhs.uk/fullmono/mon806.pdf

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

This summary was prepared by

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Conflict of interest

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

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The summary should be cited as

Flottorp S. Do continuing education meetings and workshops improve professional practice and healthcare outcomes? A SUPPORT Summary of a systematic review. October 2014.
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

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Vedlegg 7-10

Cook DA, Levinson AJ, Garside S, Dupras DM, Erwin PJ, Montori VM. Internet-based learning in the health professions: a meta-analysis. Jama. 2008;300(10):1181-96.

Does Internet based learning in the health professions improve learning outcomes?

Internet based learning is increasingly used in the training and ongoing education of health professionals. Concerns about the effects of this medium of teaching and learning have stimulated a large body of research. This summary describes a review and meta-analysis of research on the effectiveness of internet based learning in health professions.

Key messages

Internet-based learning methods compared with no intervention may improve knowledge on health professionals, but it is not known whether they improve skills and behaviours of health professions learners, or if they lead to beneficial effects on patients.

Practise exercises, tutorials, online discussions and longer duration courses may improve the effects of internet based learning on different outcomes

It is not known whether Internet based learning in health professions when compared to other forms of teaching and learning may improve knowledge, satisfaction, skills, behaviour and effects on patients.

Who is this summary for?

People who make decisions about use of the internet for learning in health professions

This summary includes:

– **Key findings** from research based on a systematic review

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:

Cook DA, Levinson AJ, Garside S, Dupras DM, Erwin PJ, Montori VM. Internet-based learning in the health professions: a meta-analysis. JAMA 2008;300(10):1181-96.

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

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

Background references on this topic:
See back page

Background

Internet based learning has become a popular approach to medical education since the advent of the world wide web in 1991. It permits learners to participate at a time and place convenient to them, facilitates innovation in instructional methods , and potentially allows instruction to be tailored to the individuals needs.

Several studies have been undertaken to assess the effectiveness of internet –based learning. The use of internet learning at any stage in training or practice in health professions were included. The authors also sought to determine factors that could explain differences in effect across participants, settings, interventions, outcomes and study designs.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review 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 internet based learning in health professions

	What the review authors searched for	What the review authors found
Interventions	Internet based learning for health professions at any stage of training or practice	201 studies (including observational and experimental designs) of internet based learning for health professions, addressing a wide range of topics, and using a range of modalities for teaching and learning
Participants	Health professions learners (including students and practising physicians, nurses, dentists, pharmacists and others)	Health professions learners
Settings	All settings and languages	All settings
Outcomes	Satisfaction; learning (knowledge, attitudes, skills); behaviours or effects on patients	Knowledge, skills, behaviours and effects on patients, satisfaction.

Date of most recent search: January 2008

Limitations: The review is from 2008 and the studies up to 2007. At 2015 new information is likely to be available

Cook D, Levinson A, Garside S et al. Internet-Based Learning in the Health Professions: A meta-analysis. *JAMA*. 2008;300(10):1181-1196 (doi:10.1001/jama.300.10.1181)

Summary of findings

Findings are reported separately for the two main comparisons; i.e. internet based learning compared to no intervention, and compared to non internet based learning. Key findings of sub-analyses are also reported.

1) Internet based learning compared to no intervention

Internet based learning was compared to no learning intervention for health professions. Satisfaction outcomes were not reported as no studies reported meaningful outcomes of this type.

Internet based learning may improve knowledge, but it is not known if they improve skills, behaviours and effects on patient care in health professions when compared to no intervention.

Practise exercises may enhance skills acquisition, but not knowledge or behaviours

Tutorials, longer duration courses and online peer discussions may improve behaviours and effects on patient care

About quality of evidence (GRADE)

⊕⊕⊕⊕
High: Further research is very unlikely to change our confidence in the estimate of effect.

⊕⊕⊕◯
Moderate: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

⊕⊕◯◯
Low: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.

⊕◯◯◯
Very low: We are very uncertain about the estimate.

For more information, see last page.

Internet-based learning compared to no intervention

Patients or population: Health professions
Settings: Classroom or practice
Intervention: Internet based learning
Comparison: No intervention

Outcomes	**Impact** Standardised mean differences	Number of studies	Quality of the evidence (GRADE)*
Knowledge	There was a large effect on knowledge outcomes (pooled effect size 1.00; 95% CI 0.90 to 1.10). High interactivity, ongoing access to course materials, online discussion, and practice exercises were not associated with larger effects. High quality studies were associated with smaller effects (0.71 [95% CI 0.51–0.92])	117 studies of 126 interventions	⊕⊕◯◯ Low
Skills	There was a large effect on skills outcomes (pooled effect size 0.85; 95% CI 0.49 to 1.20). Practice exercises were associated with larger effects (1.01 [95% CI 0.60–1.43]). High interactivity, repetition, and online discussion were not associated with larger effects.	16 studies (16 interventions)	⊕◯◯◯ Very low
Behaviours and effects on patient care	There was a large effect on behaviours and effects in patient care (pooled effect size 0.82; 95% CI 0.63 to 1.20). Tutorials, longer duration courses and online peer discussion were associated with larger effects	19 studies of 32 interventions	⊕◯◯◯ Very low

*GRADE: GRADE Working Group grades of evidence (see above and last page)
CI: Confidence interval
Standardized mean difference: Effects over 0.8 are considered large.

2) Internet based learning compared to non-internet based learning

Internet based learning in health professions was compared to alternative instructional media, including face to face teaching and learning.

It is not known whether Internet based learning improves knowledge, satisfaction, skills and behaviour when compared to non-internet based learning, or if it leads to beneficial effects in patients.

Short courses and single instance learning interventions may provide greater learner satisfaction'

Online discussion and longer duration courses may have a greater effect on knowledge

Internet based learning compared to non-internet based learning			
Patients or population: Health professions **Settings:** Classroom or Practice **Intervention:** Internet based learning **Comparison:** Non internet learning intervention			
Outcomes	**Impact** Standardised mean differences	Number of participants* (studies)	Quality of the evidence (GRADE)
Satisfaction	There were no differences between Internet and non-Internet based methods (pooled effect size 0.10; 95% CI -0.12 to 0.32). Short courses, and single instance rather than ongoing access internet based interventions were associated with larger effects.	43 studies	⊕◯◯◯ Very low
Knowledge	There was a very small positive effect of Internet-based methods (pooled effect size 0.12; 95% CI 0.003 to 0.24). Internet courses using online discussion and longer courses were associated with larger effects.	63 studies	⊕◯◯◯ Very low
Skills	There were no differences between Internet and non-Internet based methods (pooled effect size 0.09; 95% CI -0.26 to 0.44). High levels of interactivity, practice exercises and peer discussion were associated with larger effects.	12 studies	⊕◯◯◯ Very low
Behaviours and effects in patient care	There were no differences between Internet and non-Internet based methods (pooled effect size 0.51; 95% CI -0.24 to 1.25). Online discussion and single instance interventions were associated with larger effects.	6 studies	⊕◯◯◯ Very low
GRADE: GRADE Working Group grades of evidence (see above and last page) CI: Confidence interval Standardized mean difference: Effects over 0.8 are considered large.			

Additional information

Related literature

Cook DA, Levinson AJ, Garside S, Dupras DM, Erwin PJ, Montori VM. Instructional design variations in internet-based learning for health professions education: a systematic review and meta-analysis. Academic medicine : journal of the Association of American Medical Colleges. 2010;85(5):909-22.

Ruiz JG, Mintzer MJ, Leipzig RM. The Impact of e-learning in medical education. Acad Med. 2006;81(3):207-212.

This summary was prepared by

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Conflict of interest

None declared. For details, see: www.support-collaboration.org/summaries/coi.htm

Acknowledgements

This summary has been peer reviewed by: Fernando Althabe, Argentina; David Cook, USA

This review should be cited as

Cook D, Levinson A, Garside S et al. Internet-Based Learning in the Health Professions: A meta-analysis. *JAMA*. 2008;300(10):1181-1196 (doi:10.1001/jama.300.10.1181)

This summary should be cited as

Gabriel Rada, Lilian Dudley. Does Internet based learning in the health professions improve learning outcomes? A SUPPORT Summary of a systematic review. February 2015.
www.support-collaboration.org/summaries.htm

About quality of 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

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Vedlegg 7-11

Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes (update). The Cochrane database of systematic reviews. 2013;3:CD002213.

January 2014 – SUPPORT Summary of a systematic review

What are the effects of interprofessional education on professional practice and healthcare outcomes?

Delivering effective, high-quality patient care is complex and requires that health and social care professionals work together effectively. Interprofessional education – training or learning initiatives that involve more than one profession in joint, interactive learning with the explicit purpose of improving interprofessional collaboration or patient care – is a possible strategy for improving how professionals work together as well professional practice and patient care.

Key messages

Interprofessional education may lead to improved outcomes for patients and greater patient satisfaction

Interprofessional education may improve professionals' adherence to guidelines or standards

Interprofessional education may improve clinical processes, such as shared decisions

Who is this summary for?

For decisions makers considering to use computer-generated reminders delivered on paper, to healthcare professionals

This summary includes:

- **Key findings** from research based on a systematic review

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:

Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes (update). Cochrane Database Syst Rev. 2013 Mar 28;3: CD002213

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

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www.support-collaboration.org

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

Background references on this topic:
See back page

Background

Good communication and collaboration between health and social care professionals is seen as important to the provision of effective and high quality health care. Interprofessional education has generated a great deal of interest amongst policymakers, educators and researchers as a mechanism for facilitating collaborative practices and improving professional practice and patient care. Interprofessional education has been defined as initiatives that involve more than one profession in joint, interactive learning with the explicit purpose of improving collaboration between professionals, as well as patient care and patient health and wellbeing.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review 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 interprofessional education (IPE) on professional practice and healthcare outcomes

Types of	What the review authors searched for	What the review authors found
Study designs and Interventions	Randomised controlled trials (RCTs), controlled before and after studies (CBAs) and interrupted time-series studies (ITS) of IPE interventions (all types of educational, training, learning or teaching initiatives, involving more than one profession in joint, interactive learning with the explicit purpose of improving interprofessional collaboration or the health and wellbeing of patients)	15 studies: 8 RCTs, 5 CBAs and 2 ITS. The IPE interventions assessed were varied, and included (among others): communication skills training, teamwork and team planning interventions, and behaviour change training (interactive workshops).
Participants	Health and social care professionals	A range of health and social care professionals including (among others): physicians, nurses, nutritionists, optometrists, social workers, physician assistants, psychiatrists, mental health workers, medicine residents, pharmacy students, obstetricians and anaesthetists
Settings	Not specified	Countries: USA (12), UK (2), Mexico (1) Health care settings: hospital emergency departments, community mental health provider organisations, primary care clinics, and a health maintenance organisations
Outcomes	Objectively measured or self reported patient/client outcomes, healthcare process outcomes	Patient outcomes, guideline adherence rates, patient satisfaction, clinical process outcomes, collaborative behaviour, medical error rates, practitioner competencies

Date of most recent search: August 2011

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

Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes (update). Cochrane Database Syst Rev. 2013 Mar 28; 3:CD002213

Summary of findings

This review included 15 studies assessing the effectiveness of IPE interventions compared to no educational interventions. The studies varied in terms of the objectives and format of the educational intervention, the presence of other interventions in addition to the educational intervention, and the clinical areas and settings in which the interventions were delivered. The IPE component in these studies ranged from a few hours or days to longitudinal programmes that were delivered over one year or more.

Interprofessional education may lead to improved outcomes for patients and greater patient satisfaction. The certainty of this evidence was low

Interprofessional education may improve the adherence of different professionals to guidelines or standards. The certainty of this evidence was low

Interprofessional education may improve clinical processes (e.g. shared decisions on surgical incisions). The certainty of this evidence was low

There is insufficient data to adequately assess whether interprofessional education improves the competencies (e.g. skills, knowledge) of professionals to work together in the delivery of care. The certainty of this evidence was very low

There is insufficient data to adequately assess whether interprofessional education reduces errors in medical practice. The certainty of this evidence was very low

About the certainty of the evidence (GRADE) *

⊕⊕⊕⊕
High: It is very likely that the effect will be close to what was found in the research.

⊕⊕⊕◯
Moderate: It is likely that the effect will be close to what was found in the research, but there is a possibility that it will be substantially different.

⊕⊕◯◯
Low: It is likely that the effect will be substantially different from what was found in the research, but the research provides an indication of what might be expected.

⊕◯◯◯
Very low: The anticipated effect is very uncertain and the research does not provide a reliable indication of what might be expected.

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

See last page for more information.

Interprofessional education to improve professional practice and healthcare outcomes

Patients or population: Professionals or patients involved in interprofessional education interventions
Settings: Primarily USA and the UK
Intervention: Use of interprofessional education to improve collaboration and patient care
Comparison: No education intervention*

Outcomes	Impact	Number of studies	Certainty of the evidence (GRADE)
Patient outcomes	Interprofessional education may improve care outcomes for patients	6	⊕⊕◯◯ Low
Adherence rates	Interprofessional education may improve the adherence of different professionals to clinical guidelines or standards	3	⊕⊕◯◯ Low
Patient satisfaction	Patients may be more satisfied with the care provided by professionals who have participated in an interprofessional education intervention	2	⊕⊕◯◯ Low
Clinical process outcomes	Interprofessional education may improve clinical processes (e.g. shared decisions on surgical incisions)	1	⊕⊕◯◯ Low
Collaborative behaviour	We are unable to assess adequately the impacts of interprofessional education on the extent to which different professions behave collaboratively in the delivery of patient care	3	⊕◯◯◯ Very low
Medical error rates	We are unable to assess adequately the impacts of interprofessional education on errors in medical practice	1	⊕◯◯◯ Very low
Professional competencies	We are unable to assess adequately the impacts of interprofessional education on the competencies (e.g. skills, knowledge) of professionals to work together in the delivery of care	1	⊕◯◯◯ Very low

*Although the review searched for studies comparing interprofessional education to both separate, profession-specific interventions and to no education interventions, all of the included studies compared interprofessional education with no education intervention.

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

Additional information

Related literature

World Health Organization. Framework for action on interprofessional education and collaborative practice, 2010. Available at: whqlibdoc.who.int/hq/2010/WHO_HRH_HPN_10.3_eng.pdf

Sargeant J, MacLeod T, Murray A. An interprofessional approach to teaching communication skills. Journal of Continuing Education in the Health Professions 2011;31(4):265–7.

This summary was prepared by

Newton Opiyo, KEMRI-Wellcome Trust Research Programme (the previous summary was prepared by Dudley L & Wiysonge CS, South African Cochrane Centre, South Africa)

Conflict of interest

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

Acknowledgements

The previous version of this summary was peer reviewed by: Katherine Pollard, UK; Rukhsana Gazi, Bangladesh Scott Reeves, UK (this version currently out for peer review)

The review should be cited as

Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes (update). Cochrane Database Syst Rev. 2013 Mar 28; 3:CD002213

The summary should be cited as

Opiyo N, Dudley L, Wiysonge CS. Does interprofessional education improve professional practice and health care outcomes? A SUPPORT Summary of a systematic review. January 2014. www.supportsummaries.org

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GLOBINF is a thematic research area focusing on "Prevention of major global infections – HIV/AIDS and tuberculosis" at the Medical faculty, University of Oslo in collaboration with the Norwegian Institute of Public Health, Norwegian Knowledge Centre for the Health Services and Ullevål University Hospital.

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

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Vedlegg 7-12

Giguere A, Legare F, Grimshaw J, Turcotte S, Fiander M, Grudniewicz A, et al. Printed educational materials: effects on professional practice and healthcare outcomes. The Cochrane database of systematic reviews. 2012;10:CD004398.

What are the effects of printed educational materials on professional practice and healthcare outcomes?

Printed educational materials (PEMs), including clinical guidelines, monographs and publications in peer-reviewed journals, are common channels to distribute recommendations for clinical care and evidence to inform the practice of healthcare providers. PEMs are used across a range of settings as a strategy to improve professional practice and healthcare outcomes through promoting clinical practices that have been shown to be beneficial and discouraging the use of ineffective interventions. The wide use of PEMs in many settings, particularly in the form of clinical guidelines, is linked to the fact that they are seen as familiar, accessible, relatively inexpensive and convenient.

Key messages

When used alone, printed educational materials may slightly improve practice outcomes among health care providers, compared to no intervention

The effects of printed educational materials on patient outcomes are uncertain because the quality of the evidence is very low

Of the 45 studies included in the review, 44 were from high income countries. Rigorous studies from low income countries are needed to assess the impacts of printed educational materials on professional practice in these settings

Who is this summary for?

People making decisions concerning the use of printed education materials to improve professional practice and healthcare outcomes

This summary includes:

– **Key findings** from research based on a systematic review

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:

Giguère A, Légaré F, Grimshaw J, Turcotte S, Fiander M, Grudniewicz A,Makosso-Kallyth S,Wolf FM, Farmer AP, Gagnon MP. Printed educational materials: effects on professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews* 2012, Issue 10. Art. No.: CD004398. DOI: 10.1002/14651858.CD004398.pub3.

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

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www.support-collaboration.org

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

Background references on this topic:

Background

Printed educational materials (PEMs) are one of the most common approaches used to support the translation of research findings into clinical practice. PEMs have the potential to improve the care received by patients by promoting clinical practices and interventions of proven benefit and discouraging ineffective practices or interventions. Key questions regarding the use of PEMs to improve professional practice and patient outcomes include: (1) the effects of the use of PEMs compared to no intervention; (2) how the effects of PEMs are influenced by their characteristics, e.g. mode of delivery, source of information, and format; and (3) the role of health systems wide considerations, including, human resource challenges, lack of required inputs and inadequate funding.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review 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 determine the effects of printed educational materials in improving professional practice and patient outcomes

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised controlled trials (RCTs), non-randomised controlled trials (NRCTs), controlled before and after studies (CBAs), and interrupted time series studies (ITS) assessing the effects of printed educational materials, such as clinical practice guidelines, journals, and monographs, delivered personally, through mass mailing or passively via wider channels such as the internet or mass media.	45 studies: 8 cluster-randomised controlled trials, 6 randomised controlled trials, and 31 interrupted time series studies. Most studies (36/45) evaluated a single PEM. Two studies evaluated simultaneously several PEMs (respectively 12 and 11 distinct PEMs) that presented similar characteristics; and three interrupted time series (ITS) studies assessed more than two or three PEMs with very similar characteristics. The 45 studies included the following PEMS: journal publications (n=23), evidence-based guidelines (n=16), newsletters (n=6), summaries of clinical guidelines (n=3) and clinical article reprints (n=1).
Participants	Any type of healthcare professionals	Physicians, psychologists, psychiatrists, nurses, critical care fellows, Masters-level therapists, allied health professionals in the field of community health.
Settings	Studies originating from any setting	Country: Canada (12 studies), United States (11), United Kingdom (11), Europe (7) [Spain (1); Belgium (1); The Netherlands (2); Finland (1); Ireland (1); Germany (1); Italy (1)]; Japan (2), Brazil (1), United States & Canada (1). Health care setting: general family or community-based practice (10), outpatient (ambulatory) settings (9), hospitals (6), mixed settings (3), municipal health centre (1), managed behavioural healthcare organisation (1), clinical setting unclear (15).
Outcomes	Any objective measure either of professional practice (e.g. the number of tests ordered, prescriptions for a particular drug) or of patient health outcomes (e.g. blood pressure, complications after surgery).	Prescribing/treatment (39 studies); financial (resource use) (2 studies); general management of a problem (8 studies); diagnosis (4 studies); procedures (7 studies); referrals (4 studies); test ordering (5 studies); surgery (5 studies); patient education/advice (4 studies); clinical prevention service (3 studies); screening (2 studies); reporting (1 study); discharge planning (2 studies); patient health outcome (4 studies).

Date of most recent search: June 2011

Limitations: This is a good quality systematic review with only minor limitations.

Summary of findings

The review included 45 studies, of which 44 were conducted in high-income countries, mostly in outpatient or community settings.

When used alone, printed educational materials may slightly improve practice outcomes among health care providers, compared to no intervention. The certainty of this evidence was low

The effects of printed educational materials on patient outcomes are uncertain because the quality of the evidence is very low

About quality of evidence (GRADE)

⊕⊕⊕⊕
High: It is very likely that the effect will be close to what was found in the research.

⊕⊕⊕◯
Moderate: It is likely that the effect will be close to what was found in the research, but there is a possibility that it will be substantially different.

⊕⊕◯◯
Low: It is likely that the effect will be substantially different from what was found in the research, but the research provides an indication of what might be expected.

⊕◯◯◯
Very low: The anticipated effect is very uncertain and the research does not provide a reliable indication of what might be expected.

For more information, see last page.

Printed educational material compared to no intervention

Patients or population: Healthcare professionals (physicians in 9/10 studies)
Settings: Multiple settings, mostly general practice settings in high-income countries
Intervention: Printed educational materials
Comparison: No intervention

Outcomes*	Standard median effect size / impact	Number of participants (studies)	Certainty of the evidence (GRADE)
****Categorical measures of professional practice** Absolute risk difference across various outcomes Mean follow-up: 6 months	**0.02 higher** (range from 0 to 0.11)	294,937 (7 studies)	⊕⊕◯◯ Low
*****Continuous measures of professional practice** Standardised mean difference across various outcomes Mean follow-up: 9 months	**0.13 higher** (range from -0.16 to +1.96)	297 (3 studies)	⊕◯◯◯ Very low
Patient outcomes	**Very few studies assessed these outcomes and the impact is uncertain**	(4 studies)	⊕◯◯◯ Very low

* Where studies reported more than one measure of each endpoint, the primary measure (as defined by the authors of the study) or the median measure was abstracted.
For **categorical measures, the odds ratio between the intervention of interest and the control intervention was calculated.
***For **continuous endpoints**, standardised mean difference was calculated by dividing the mean score difference of the intervention and comparison groups in each study by the pooled estimate standard deviation for the two groups.
GRADE: GRADE Working Group grades of evidence (see above and last page).

Additional information

Related literature

Ivers N, Jamtvedt G, Flottorp S, Young JM, Odgaard-Jensen J, French SD, O'Brien MA, Johansen M, Grimshaw J, Oxman AD. Audit and feedback: effects on professional practice and healthcare outcomes. Cochrane Database of Systematic Reviews 2012, Issue 6. Art. No.: CD000259.

O'Brien MA, Rogers S, Jamtvedt G, Oxman AD, Odgaard-Jensen J, Kristoffersen DT, Forsetlund L, Bainbridge D, Freemantle N, Davis D, Haynes RB, Harvey E. Educational outreach visits: effects on professional practice and health care outcomes. Cochrane Database of Systematic Reviews 2007, Issue 4. Art. No.: CD000409.

Forsetlund L, Bjørndal A, Rashidian A, Jamtvedt G, O'Brien MA, Wolf FM, Davis D, Odgaard-Jensen J, Oxman AD. Continuing education meetings and workshops: effects on professional practice and health care outcomes. Cochrane Database of Systematic Reviews 2009, Issue 2. Art. No.: CD003030.

This summary was prepared by

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Ebonyi State University Abakaliki, Nigeria.

Conflict of interest

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

Acknowledgements

This summary has been peer reviewed by: Juliet Nabyonga Orem, Switzerland; Anik Giguère, Canada

This review should be cited as

Giguère A, Légaré F, Grimshaw J, Turcotte S, Fiander M, Grudniewicz A,Makosso-Kallyth S, Wolf FM, Farmer AP, Gagnon MP. Printed educational materials: effects on professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews* 2012, Issue 10. Art. No.: CD004398. DOI: 10.1002/14651858.CD004398.pub3.

The summary should be cited as

Uneke CJ. What are the effects of printed educational materials on professional practice and healthcare outcomes? A SUPPORT Summary of a systematic review. January 2014. www.supportsummaries.org

This summary was prepared with additional support from:

The South African Cochrane Centre, the only centre of the international Cochrane Collaboration in Africa, aims to ensure that health care decision making in Africa is informed by high quality, timely and relevant research evidence. www.mrc.ac.za/cochrane/cochrane.htm

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

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Vedlegg 7-13

Scott A, Sivey P, Ait Ouakrim D, Willenberg L, Naccarella L, Furler J, et al. The effect of financial incentives on the quality of health care provided by primary care physicians. Cochrane database of systematic reviews 2011 (9): CD008451.

Do financial incentives improve the quality of health care 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 health care provided by primary care physicians is 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 health care provided by primary care physicians

This summary includes:

– **Key findings** from research based on a systematic review

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, Willenberg L, Naccarella L, Furler J, et al. The effect of financial incentives on the quality of health care provided by primary care physicians. Cochrane database of systematic reviews 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.

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www.support-collaboration.org

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

Background references on this topic:

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

The methods used to assess the reliability of the 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 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 controlled trials (RCT), controlled before and after studies (CBA), and interrupted time series analyses (ITS) evaluating the impact of changes in the method or level of payment for primary care physicians	7 studies were included: 3 cluster RCTs; 2 CBA; 1 ITS; and 1 controlled ITS. 3 studies evaluated single-threshold target payments, 1 examined a fixed fee per patient achieving a specified outcome, 1 evaluated payments based on the relative ranking of medical groups' performance (tournament-based pay), 1 study examined a mix of tournament-based pay and threshold payments, and 1 study evaluated changing from a blended payments scheme to salaried payment.
Participants	Primary care physicians (PCPs)	5 US studies took place in large private health plans, the UK study in 20 PCP medical groups in England, and the German study in 82 medical practices.
Settings	Primary care	The studies were from US (5), the UK (1), Germany (1).
Outcomes	Quality of care was defined as patient reported outcome measures, clinical behaviours, and intermediate clinical and physiological measures	3 studies examined smoking cessation; 1 patients' assessment of the quality of care; 2 cervical cancer screening, mammography screening, and HbA1 (1 of them also childhood immunisation, chlamydia screening, and appropriate asthma medication); and 1 four outcomes in diabetes.

Date of most recent search: August 2009

Limitations: The results of included studies were not described or analysed systematically.

Scott A, Sivey P, Ait Ouakrim D, Willenberg L, Naccarella L, Furler J, et al. The effect of financial incentives on the quality of health care pro-vided by primary care physicians. Cochrane database of systematic reviews 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 health care provided by primary care physicians is uncertain because of very low certainty of the evidence.

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 varried from 3.1% less 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

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

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, Lindahl AK. Paying for performance to improve the delivery of health interventions in low- and middle-income countries. Cochrane database of systematic reviews 2012 (2): CD007899.

These two systematic reviews assessed the effects of different methods of paying primary care physicians: Giuffrida A, Gosden T, Forland F, Kristiansen IS, Sergison M, Leese B, et al. Target payments in primary care: effects on professional practice and health care outcomes. Cochrane database of systematic reviews 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 of systematic reviews 2000 (3): CD002215.

This summary was prepared by

Agustín Ciapponi and Sebastián García Martí, Argentine Cochrane Centre IECS -Institute for Clinical Effectiveness and Health Policy, Argentina

Conflict of interest

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

Acknowledgements

This summary has been peer reviewed by: [Currently under peer-review]

This review should be cited as

Scott A, Sivey P, Ait Ouakrim D, Willenberg L, Naccarella L, Furler J, et al. The effect of financial incentives on the quality of health care provided by primary care physicians. Cochrane database of systematic reviews 2011 (9): CD008451.

The summary should be cited as

Ciapponi A, García Martí S. Do financial incentives improve the quality of health care provided by primary care physicians? A SUPPORT Summary of a systematic review. March 2015. www.supportsummaries.org

About certainty of the evidence (GRADE)

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Vedlegg 7-14

Zwarenstein M, Goldman J, Reeves S. Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes. The Cochrane database of systematic reviews. 2009(3):CD000072.

Do healthcare teams improve professional practice or patient outcomes?

Interprofessional collaboration is the process by which two or more health or social care professionals work together to improve the delivery of healthcare and health outcomes.

Practice-based interventions to promote interprofessional collaboration (i.e. better work interactions and teamworking among providers) in healthcare delivery are intended to respond to the needs of restructuring, reorganisation, and cost containment, and to the increasing complexity of healthcare knowledge and work.

Key messages

We are uncertain whether practice-based interventions to improve collaboration between professionals lead to improvements in professional collaboration or in patient and healthcare outcomes because the quality of the evidence is very low

We are uncertain whether practice-based interventions to improve collaboration between professionals decrease health care costs because the quality of the evidence is very low

The studies included in the review were very different from each other in terms of the types of professionals included, the tasks performed, the degree of interaction, and the populations and health issues considered.

Who is this summary for?

People making decisions about the implementation of interventions to foster or improve interprofessional collaboration in healthcare.

! This summary includes:

- **Key findings** from research based on a systematic review

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:

Zwarenstein M, Goldman J, Reeves S. Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes. Cochrane Database of Systematic Reviews 2009;3:CD000072.

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

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

Background references on this topic:

Background

Interprofessional collaboration is the process by which two or more health or social care professionals work together to deliver healthcare. Such collaboration is widely promoted on the assumption that how well healthcare providers work together will impact on their performance and therefore on health care quality. This summary is based on a systematic review focusing on interventions introduced to a practice setting with the explicit objective of improving collaboration between two or more health and/or social care professionals (e.g. midwives, nurses, doctors/physicians, pharmacists, physiotherapists, psychologists, and social workers).

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what is not known is important

A reliable review might not find any well-designed studies. Although this may be 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 impact of practice-based interventions to improve collaboration between professionals on patient satisfaction, effectiveness and the efficiency of the healthcare provided.

	What the review authors searched for	What the review authors found
Study designs and Interventions	RCTs (randomised clinical trials) which evaluate practice-based interventions that are designed to improve collaboration between two or more health and/or social care professionals.	5 RCTs evaluating: interprofessional rounds (2 studies), interprofessional meetings (2), and externally facilitated interprofessional audit (1).
Participants	Healthcare teams composed of more than one type of health and social care professional, in any patient population.	Teams involving a combination of doctors, nurses, pharmacists, nutritionists/dietitians, social workers, case managers, physical therapists, speech pathologists, occupational therapists, service support staff and managers.
Settings	Any healthcare setting	Acute care or general hospital care (3), telemetry unit of a community hospital [technology that allows remote measurement and reporting of information] (1), nursing home (1). Country settings: United States of America (USA) (2), United Kingdom (UK) (1), Australia (1) and Sweden (1).
Outcomes	Patient/client health measures (e.g. mortality, cure rates); healthcare process outcomes (e.g. readmission rates, continuity of care, use of resources; patient or family satisfaction; interprofessional collaboration.)	All studies reported some outcome of patient/client or healthcare process outcome. Only one study provided an adequate evaluation of interprofessional collaboration.
Date of most recent search: May 2007		
Limitations: This is a well-conducted systematic review with only minor limitations. However, it has not been updated since 2009.		

Zwarenstein M, Goldman J, Reeves S. Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes. Cochrane Database of Systematic Reviews 2009;3:CD000072.

Summary of findings

The review found 5 studies of practice-based interprofessional teams in 4 high-income countries (USA, UK, Australia, Sweden). Two studies examined interprofessional rounds, two studies examined interprofessional meetings, and one study examined an externally facilitated interprofessional audit.

We are uncertain whether practice-based interventions to improve collaboration between professionals lead to improvements in interprofessional collaboration or patient and healthcare outcomes, or to decreased costs, because the quality of the 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.

Practice-based interventions to improve collaboration between different healthcare professionals compared to no intervention

People Healthcare teams involving more than one type of health professional
Settings Acute care or general hospital, telemetry unit of a community hospital, nursing home
Intervention Practice-based interventions with the explicit objective of improving collaboration between professionals
Comparison No intervention

Outcomes	Impact	Number of studies	Certainty of the evidence (GRADE)
Patient/client or healthcare process outcomes	Interdisciplinary rounds led to a decrease in hospital length of stay in one study, but another study found no impact. Multidisciplinary team meetings improved prescribing of psychotropic drugs in nursing homes. Multidisciplinary video conferencing led to reductions in average length of hospital treatment, compared to audio conferencing for multidisciplinary case conferences, Multidisciplinary meetings with an external facilitator increased audit activity and the number of teams reporting improvements to care.	5 studies	⨁◯◯◯ Very low
Interprofessional collaboration	There was no difference in the number of communications between health professionals when comparing multidisciplinary audio conferencing and multidisciplinary video conferencing.	1 study	⨁◯◯◯ Very low
Costs	One study reported a decreased hospital length of stay and lower costs in the group implementing interdisciplinary ward rounds, but another study reported no significant difference in hospital length of stay.	2 studies	⨁◯◯◯ Very low

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

Additional information

Related literature

Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and healthcare outcomes (update). Cochrane Database Syst Rev. 2013 Mar 28;3:CD002213.

Lemieux-Charles L, McGuire WL. What do we know about healthcare team effectiveness? A review of the literature. Med Care Res Rev. 2006 Jun;63(3):263-300.

Johansson G, Eklund K, Gosman-Hedström G. Multidisciplinary team, working with elderly persons living in the community: a systematic literature review. Scand J Occup Ther. 2010;17(2):101-16.

Simmonds S, Coid J, Joseph P, Marriott S, Tyrer P. Community mental health team management in severe mental illness: a systematic review. Br J Psychiatry. 2001;178 (6):497-502; discussion 503-5.

This summary was prepared by

Gabriel Rada. Unit for Health Policy and Systems Research, School of Medicine, Pontificia Universidad Católica de Chile.

Conflict of interest

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

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This summary has been peer reviewed by: Merrick Zwarenstein, Canada; Ekwaro Obuku, Uganda

This review should be cited as

Zwarenstein M, Goldman J, Reeves S. Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes. Cochrane Database of Systematic Reviews 2009;3:CD000072.

The summary should be cited as

Rada G. Do healthcare teams improve professional practice or patient outcomes? A SUPPORT Summary of a systematic review. January 2014. www.supportsummaries.org

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About the certainty of the evidence (GRADE)

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Vedlegg 7-15

Ko HC, Turner TJ, Finnigan MA. Systematic review of safety checklists for use by medical care teams in acute hospital settings--limited evidence ofeffectiveness. BMC Health Serv Res. 2011; 11:211.

Do paper-based safety checklists improve patient safety in acute hospital settings?

Safety checklists are used as tools to improve care processes and patient safety outcomes.

Key messages

Surgical safety checklists may improve death rates and major complications within 30 days after the surgery.

It is uncertain whether safety checklists improve adherence to guidelines or patient safety in intensive care units, emergency departments or acute care settings.

Randomised trials are needed to inform decisions about the use of safety checklists in acute hospital settings.

Who is this summary for?

People deciding on strategies to improve patient safety

This summary includes:

– **Key findings** from research based on a systematic review

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:

Ko HC, Turner TJ, Finnigan MA. Systematic review of safety checklists for use by medical care teams in acute hospital settings--limited evidence ofeffectiveness. BMC Health Serv Res. 2011; 11:211. Available at http://www.biomedcentral.com/1472-6963/11/211.

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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.

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

Background references on this topic:

Background

Guidance is available on how to create checklists, what should be included, and how to implement them. However, checklists are often implemented as a part of multi-component quality improvement initiatives. It has been unclear whether checklists are effective in improving patient safety in acute care settings. To the extent that they are effective, it is unclear what checklist designs and implementation tools are most effective. It is also has been unclear to what extent checklists themselves contribute to the effectiveness of multicomponent interventions.

Safety checklists can be either paper-based or electronic. This summary is focused on paper-based checklists.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

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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: Assess if the use of safety checklists, compared to not using checklists, improves patient safety in acute hospital settings

	What the review authors searched for	What the review authors found
Study designs & Interventions	Comparative studies of paper-based checklists, applied to hospitalized patients by medical care teams, compared to controls (care provided without checklists)	Before-after studies (9) that evaluated a wide variety of checklist designs and training on use of the checklists.
Participants	Medical care teams (a medical clinician or surgeon had to be included)	Medical teams
Settings	Acute hospital settings	Intensive care units (5 studies), emergency departments (2 studies), surgical units (1 study) and multidepartmental acute care settings (1 study)
Outcomes	Any patient-relevant clinical outcome	Length of stay (3 studies), percentage of ventilator days on which patients received recommended care (1 study), time from admission until prescription of medical deep venous thrombosis prophylaxis (1 study), appropriate indications for use of an indwelling urinary tract catheter (1 study), complications during the postoperative period (1 study), patients receiving antibiotics within eight hours of a diagnosis of pneumonia (1 study)
Date of most recent search: September 2009		
Limitations: Only articles in English were included and the results of included studies were not described or analysed systematically.		

Ko HC, Turner TJ, Finnigan MA. Systematic review of safety checklists for use by medical care teams in acute hospital settings--limited evidence of effectiveness. BMC Health Serv Res. 2011; 11:211.

Summary of findings

The review included nine before-after studies. Most studies (eight) were done in North America and one study was done in eight countries (Canada, Jordan, India, New Zealand, Philippines, Tanzania, United Kingdom and United States). Four clinical settings were covered: five studies in the intensive care unit, two studies in the emergency department, one study in surgery, and one study in multi-departmental acute care.

1) Intensive care unit setting

Five studies conducted in the United States evaluated checklists in the intensive care unit setting. All studies had a hight risk of bias, and given the important methodological differences between them, they can not be summarised quantitatively.

It is uncertain whether checklists improve adherence to recommended practice or patient outcomes in the intensive care units because the certainty of the 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.

Intensive care unit setting

People: Healthcare professionals
Settings: Acute hospitals
Intervention: Paper-based checklists
Comparison: Care provided without checklists

Outcomes	Impact	Number of studies	Certainty of the evidence (GRADE)
Length of stay	Different checklists were used among studies. One of the studies found a reduction in the length of stay, but the other two did not.	3	⊕◯◯◯ Very low
Percentage of ventilation days on which patient received four care process (Prophylaxis of peptic ulcer disease and deep venous thrombosis, appropriate sedation and recumbent positioning)	During the period that the surgical checklist was used, the compliance in the four processes improved from 30% to 96% (p <0.001)	1	⊕◯◯◯ Very low
Improvement in four domains (Use of physical therapy, transfer to telemetry, time from admission to the prescription of medical deep venous thrombosis prophylaxis, and central catheter duration)	The use of the checklist was associated with an improvement in two of the four domains.	1	⊕◯◯◯ Very low

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

2) Emergency department setting

Two studies evaluated checklists in the emergency department. The included studies have a hight risk of bias and they could not be summarised quantitatively.

It is uncertain whether checklists improve adherence to recommended practice or patient outcomes in the emergency departments because the certainty of the evidence is very low.

Emergency department setting			
People	Healthcare professionals		
Settings	Acute hospitals		
Intervention	Paper-based checklists		
Comparison	Care provided without checklists		
Outcomes	**Impact**	Number of studies	Certainty of the evidence (GRADE)
Length of stay	Post-endoscopy checklist after emergency department admission was used. The study found a reduction of 50% in the length of stay during the checklist period (p=0.003)	1	⨁◯◯◯ Very low
Appropriate use of catheter in patients with indwelling urinary tract catheter	There was an increase of appropriate use of urinary tract catheters during the intervention period (from 37% to 51%; p=0.06)	1	⨁◯◯◯ Very low
Documentation of an indication for a catheter in patients with indwelling urinary tract catheter	Documentation of an indication for a catheter remained unchanged during the intervention period	1	⨁◯◯◯ Very low
Presence of a physician order for urinary tract catheter placement	The presence of a physician order increased from 43% to 63% post-intervention	1	⨁◯◯◯ Very low
GRADE: GRADE Working Group grades of evidence (see above and last page)			

3) Surgery setting

One study conducted in eight countries (Canada, Jordan, India, New Zealand, Philippines, Tanzania, United Kingdom and United States) evaluated checklists in the surgery setting (7688 patients undergoing non-cardiac surgery).

Checklists may improve the death rate and major complications within the first 30 days after an operation. The certainty of this evidence was low.

Surgery setting			
People	Healthcare professionals		
Settings	Acute hospitals		
Intervention	Paper-based checklists		
Comparison	Care provided without checklists		
Outcomes	**Impact**	Number of studies	Certainty of the evidence (GRADE)
Any major complication(including death) within the first 30 days after the operation	The rate of death declined from 1.5% to 0.8% during the intervention period. Complications also decreased from 11% to 7%	1	⨁⨁◯◯ Low
GRADE: GRADE Working Group grades of evidence (see above and last page)			

4) Acute care setting

One study conducted in the United States evaluated checklists in the surgery setting (7688 patients undergoing non-cardiac surgery).

It is uncertain whether checklists improve adherence to recommended practice in acute care settings because the certainty of the evidence is very low.

Acute care setting			
People: Healthcare professionals **Settings: Acute hospitals** **Intervention: Paper-based checklists** **Comparison: Care provided without checklists**			
Outcomes	**Impact**	Number of studies	Certainty of the evidence (GRADE)
Proportion of patients receiving antibiotics within eight hours of a diagnosis of pneumonia	Hospitals using a checklist administered appropriate antibiotics more often than hospitals without the checklist (OR 2.0, 95% CI not reported p=0.0005). (Forms and reminders were used in addition to the checklist.)	1	⨁◯◯◯ Very low
GRADE: GRADE Working Group grades of evidence (see above and last page)			

Additional information

Related literature

- World Health Organization. Patient safety checklists. Available in http://www.who.int/patientsafety/implementation/checklists/en/

-World Health Organization. Implementation manual WHO surgical safety checklist (first edition). Available in http://www.who.int/patientsafety/safesurgery/tools_resources/SSSL_Manual_finalJun08.pdf?ua=1.

- Thomassen Ø, Storesund A, Søfteland E, Brattebø G. The effects of safety checklists in medicine: a systematic review. Acta Anaesthesiol Scand. 2014;58(1):5-18.

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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

Ko HC, Turner TJ, Finnigan MA. Systematic review of safety checklists for use by medical care teams in acute hospital settings--limited evidence of effectiveness. BMC Health Serv Res. 2011; 11:211. Available at http://www.biomedcentral.com/1472-6963/11/211.

The summary should be cited as

Osorio D. Do paper-based safety checklists improve patient safety in acute hospital settings? A SUPPORT Summary of a systematic review. March 2015. 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

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Vedlegg 7-16

Ketelaar NA, Faber MJ, Flottorp S, Rygh LH, Deane KH, Eccles MP. Public release of performance data in changing the behaviour of healthcare consumers, professionals or organisations. The Cochrane database of systematic reviews. 2011(11):CD004538.

December 2014 – SUPPORT Summary of a systematic review

Does public release of performance data change the behavior of healthcare consumers, professionals or organisations?

Health authorities increasingly use public release of performance data as a quality improvement strategy for changing the behaviour of both consumers and health care professionals.

Key messages

Few studies have been conducted on the effectiveness of public release of performance data from the health services

Due to the scarcity of studies, it is not possible to draw conclusions regarding the effectiveness of releasing performance data to the public

Who is this summary for?

People making decisions concerning release of performance data for improving quality in health care

This summary includes:

- **Key findings** from research based on a systematic review

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:

Ketelaar NABM, Faber MJ, Flottorp S, Rygh LH, Deane KHO, EcclesMP. Public release of performance data in changing the behaviour of healthcare consumers, professionals or organisations. *Cochrane Database of Systematic Reviews* 2011, Issue 11. Art.

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 – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries.
www.support-collaboration.org

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

Background references on this topic:

Background

The interest in measuring performance in health care is driven by many factors, including the wish for accountibility, cost-effective care, and quality improvement. These desires are shared among many stakeholder, such as consumers, health care professionals and policymakers.

Reporting of performance can be done in many ways, e.g. through consumer reports, provider profiles, or report cards.

It is often assumed that the release of such information will affect the behaviours of the various stakeholder, and ultimately lead to health system improvements.

How this summary was prepared

The methods used to assess the reliability of the review are described here: www.supportsummaries.org/methods

Knowing what's not known is important

A reliable review 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 determine whether publicly releasing performance data changes the behaviour of healthcare consumers, professionals, providers and purchasers in a way that improves performance and quality of care.

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Randomised controlled trials, quasi randomised trials, interrupted time series, and controlled before-after studies of the release of performance data into the public domain, on any aspect of health care.	Two cluster randomised trials, one quasi cluster randomised trial, and one interrupted time series study.
Participants	Healthcare consumers or providers, including organisations.	Consumers (including families) (3 studies) and hospitals (1)
Settings	Not pre-specified	USA (3 studies) and Canada (1)
Outcomes	Utilisation decisions (by consumers, professionals, organisations, or purchasers). Provider performance, staff morale and behaviour.	Choice of health plan (2 studies) or hospital (1 study) among consumers. Process of care-indicators for acute myocardial infarction and congestive heart failure, and quality improvement activities (1 study).
Date of most recent search: Early 2011		
Limitations: This is a well-conducted systematic review with only minor limitations.		

Ketelaar NABM, Faber MJ, Flottorp S, Rygh LH, Deane KHO, EcclesMP. Public release of performance data in changing the behaviour of healthcare consumers, professionals or organisations. *Cochrane Database of Systematic Reviews* 2011, Issue 11. Art. No.: CD004538. DOI: 10.1002/14651858.CD004538.pub2

Summary of findings

The review included four studies comparing the release of performance data, with not releasing such data. Two studies were in health plan settings (USA), and two in hospital settings (USA and Canada). The three US-studies assessed the impact on consumer behaviour (choice of health plan or hospital), and the Canadian study measured whether public reporting influenced provider behaviour.

Public release of performance data may not influence consumers' selection of health plan or hospital

Public release of performance data may lead to little or no difference in process of care indicators, but may lead to more quality improvement activities

About the certainty of the evidence (GRADE) *

⊕⊕⊕⊕
High: It is very likely that the effect will be close to what was found in the research.

⊕⊕⊕◯
Moderate: It is likely that the effect will be close to what was found in the research, but there is a possibility that it will be substantially different.

⊕⊕◯◯
Low: It is likely that the effect will be substantially different from what was found in the research, but the research provides an indication of what might be expected.

⊕◯◯◯
Very low: The anticipated effect is very uncertain and the research does not provide a reliable indication of what might be expected.

Effect of public release of performance data

People: Patients treated for acute myocardial infarction or congestive heart failure, or given coronary artery bypass graft or discectomy surgery, and Medicaid enrolees
Settings: Health plans or hospitals
Intervention: Release of performance data (risk adjusted outcomes, consumer reports (CAHPS), composite and individual indicators)
Comparison: No release of performance data

Outcomes	**Impact**	Certainty of the evidence (GRADE)
Changes in selection	Public release of performance data may not influence consumers' selection of health plan or hospital	⊕⊕◯◯ Low
Changes in care	Public release of performance data may lead to little or no difference in process of care indicators, but may lead to more quality improvement activities	⊕⊕◯◯ Low

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

Additional information

Related literature

Fung, C. H., et al. (2008). "Systematic review: the evidence that publishing patient care performance data improves quality of care." Annals of internal medicine 148:111–123.

Berger, Z. D., et al. (2013). "Can public reporting impact patient outcomes and disparities? A systematic review." Patient education and counseling 93: 480–487.

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