KTI 15. AUDIT AND FEEDBACK

WHAT IS AUDIT AND FEEDBACK?

AUDIT AND FEEDBACK DESCRIPTION

- A process that measures an individual's professional practice or performance and then compares it to professional standards or targets.
- The results of this comparison are then fed back to the individual.
- It is often used together with other interventions, such as educational meetings or reminders.

AUDIT AND FEEDBACK GOAL(S)

- To encourage individuals to follow professional standards and improve their performance among a variety of professional practice areas (e.g., use of treatments, laboratory tests, management of diseases).

CURRENT FINDINGS OF THE EVIDENCE

- Leads to small but potentially important improvements in professional practice.
- The effectiveness depends on baseline performance and how the feedback is provided.

SYSTEMATIC REVIEW OF THE EVIDENCE FOR AUDIT AND FEEDBACK

Source: 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. The Cochrane Library. 2012 Jun 13.

EVIDENCE FROM THE SYSTEMATIC REVIEW	
Description of Audit and Feedback	Format of Feedback: • Verbal feedback (n=13) • Written feedback (n=84) • Both forms (n=32) Feedback was provided by: • A supervisor or senior colleague (n=13) • 'Professional standards review organisation' or representative of the employer or purchaser (n=15) Frequency of the feedback given: • Weekly (n=11) • Monthly (n=19) • Repeated but less than monthly (n=36) • Once only (n=68) Characteristics of feedback provided: • Explicit, measurable goals (n=11) • Action plans or correct solution information (n=41) • Both features (n=4)

	• Neither feature (n=84) • Recipients were required to increase current behaviours (n=57) • Recipients were required to decrease current behaviours (n=29) • Required behavior change was complex or uncertain (n=55)
Setting	Healthcare settings: Outpatient, inpatient, general or family practice Healthcare topic: Various Study location: USA (n=69), Canada (n=11), UK or Ireland (n=21), Australia or New Zealand (n=10)
Intervention Deliverer	Not specified
Intervention Recipient	Physicians, pharmacists, nurses
Quality of the systematic review	Low risk of bias (Assessment tool: ROBIS)
Quality of studies included in systematic review	44 High quality 25 Low quality 71 Unclear quality
OUTCOMES FROM SYSTEMATIC REVIEW	
Comparisons:	1. Any intervention in which audit and feedback is the single intervention or is the core, essential feature of a multifaceted intervention vs no intervention 2. Audit and feedback alone vs no intervention 3. Audit and feedback as the core feature of a multifaceted intervention vs no intervention 4. Different ways of providing audit and feedback (head-to-head comparisons)
Patient clinical outcomes:	1. Any intervention with Audit and Feedback vs no intervention: • Minimal discernable effect observed for patient outcomes with dichotomous outcomes • Positive effect was noted in studies with continuous outcomes, specifically, for continuous outcomes, the weighted median adjusted change relative to baseline control was a 17% improvement (IQR 1.5% to 17%).
Health care provider process outcomes:	1. Any intervention with Audit and Feedback vs no intervention: Dichotomous outcomes • Weighted median adjusted RD was a 4.3% increase in compliance with desired practice (interquartile range (IQR) 0.5% to 16%) (no high risk studies included). • The range in adjusted RDs for compliance with desired practice was wide: a 9%absolute decrease to a 70%increase in compliance. Continuous outcomes • Weighted median adjusted change relative to baseline control was a 1.3% increase in compliance with desired

	practice (IQR 1.3% to 23.2%) (no high risk studies included). • The adjusted change relative to baseline control varied widely, from a 50% decrease in desired practice to a 139% increase in desired practice. 2. Audit and feedback alone vs no intervention: Dichotomous outcomes • The weighted median adjusted RD for desired practice changes were a 3.0% increase (IQR 1.8% to 7.7%). Continuous outcomes • The weighted median adjusted change relative to baseline control for desired practice changes was 1.3% (IQR 1.3% to 11.0%). 3. Audit and feedback as the core feature of a multifaceted intervention vs no intervention Dichotomous outcomes • The weighted median adjusted RD was 5.5%(IQR 0.4%to 16%). Continuous outcomes • The weighted median adjusted change relative to baseline control was 26.1% (IQR 12.7% to 26.1%). 4. Different ways of providing audit and feedback (head-to-head comparisons) • Results have been provided in the operationalization section below.

OPERATIONALIZATION OF AUDIT AND FEEDBACK INTERVENTIONS

The effect of using audit and feedback varied widely across the included studies. Overall, the review shows that:

Audit and feedback may be most effective when:

1. The health professionals are not performing well to start out with;
2. The person responsible for the audit and feedback is a supervisor or colleague;
3. It is provided more than once;
4. It is given both verbally and in writing;
5. It includes clear targets and an action plan.

In addition, the effect of audit and feedback may be influenced by the type of behaviour it is targeting. It is uncertain whether audit and feedback is more effective when combined with other interventions.

STUDY EXAMPLE OF AUDIT AND FEEDBACK INTERVENTIONS FROM THE SYSTEMATIC REVIEW

Source: Avery AJ, Rodgers S, Cantrill JA, Armstrong S, Boyd M, Cresswell K, et al. PINCER trial: a cluster randomized trial comparing the effectiveness and cost-effectiveness of a pharmacist-led IT-based intervention with simple feedback in reducing rates of clinically important errors in medicines management in general practices. A report for the Department of Health Patient Safety Research Portfolio. 2010.

STUDY INFORMATION	
Goals of Intervention	To improve the effectiveness and cost-effectiveness of a pharmacist-led IT-based intervention with simple feedback in reducing rates of clinically important errors (PINCER) in medicines management in general practices
Description of Intervention	PINCER Trial pharmacists (intervention deliverers) met with members of the practice team comprising of: • Doctors • Nurses • Practice manager • Reception staff The meeting included: • A discussion about how the computer-generated feedback would indicate any medication errors that happened on patients/ • Members were given a brief summary of the objectives of the pharmacist-led intervention and summary of the findings from computer search were distributed. Following the meeting, the pharmacists used a range of techniques to help correct the medication errors that had been identified and prevent future medication errors. They were asked to work closely with the practice team member assigned to provide liaison with other members of the practice. The assigned practice team member took on the following tasks: a) Inviting patients into the surgery for a prescription review with the pharmacist, or a member of the general practice team, with the aim of correcting medication errors b) Inviting certain pre-determined groups for blood tests The pharmacists took on the following approaches to try to *prevent* future instances of hazardous prescribing and medicines management: a) In relation to hazardous prescribing: - Meeting up with any doctors unable to attend the initial meeting in order to provide educational outreach. - Reinforcement of educational messages provided at the initial meeting by repeating these messages at future meetings. - Encouraging doctors to take heed of contraindication

	messages on their computer systems. b) In relation to inadequate blood-test monitoring - Encouraging practices to use their computer systems to automatically recall patients for a blood test if they had gone beyond a pre-specified time. - To use routine prescription reviews as the trigger for ensuring that if patients needed blood tests, these were arranged. Pharmacists maintained regular contact with practice liaison member to facilitate changes, discuss, and resolve, any difficulties encountered. They kept a written log of changes made in relation to patients with medication errors, and changes made to practice systems. Towards end of the intervention period, pharmacist's undertook a further check of patients' computer records to provide feedback on the progress of practices made in correcting medication errors.
Setting	Community-based
Intervention Deliverer	Trial pharmacists
Intervention Recipient	Practice team (physicians, nurses, practice manager and reception staff)
Quality of the Study	High quality
STUDY OUTCOMES	
Comparison	1. PINCER vs computer generated feedback
Health Care Provider Process Outcomes	Participants in the pharmacist intervention arm practices were significantly less likely to have been prescribed: • A non-selective NSAID without a proton pump inhibitor (PPI) if they had a history of peptic ulcer (OR 0.58, 95%CI 0.38, 0.89) • A beta-blocker if they had asthma (OR 0.73, 95% CI 0.58, 0.91) • An ACE inhibitor or diuretic without a measurement of urea and electrolytes in the last 15 months (OR 0.51, 95% CI 0.34, 0.78) (in those aged 75 years and older). The economic analysis suggests that the PINCER pharmacist intervention has 95% probability of being cost effective if the decision-maker's ceiling willingness to pay reaches £75 (6 months) or £85 (12 months) per error avoided.