Bridging the ‘know-do’ gap in primary care – an overview of strategies to promote effective practice

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Niccolo Machiavelli in the ‘The Prince’, 1513

There is nothing more difficult to plan, more doubtful of success, nor more dangerous to manage than the creation of a new order of things.

Scurvy in the British Navy-Vitamin C deficiency was a major cause of death on long sea voyages

- 1601 - the first experiment-James Lancaster
- 1747 - a further experiment -James Lind
- 1795 - citrus fruits provided in the Navy
- 1865 - …… and in the merchant marine
The Case of Scurvy: Why the ‘Know-Do’ Gap?

- Poor institutional memory and communication
- Implementation contrary to vested interests
- Major challenge to the ‘accepted scientific wisdom’ of the time
- Weak links between those doing the research and those who could implement results

Failure to deliver effective care - a global problem

- Studies in Europe and N. America show 30-60 % patients don’t receive effective treatment for common conditions.

- Ineffective and possibly harmful practices may be difficult to eradicate e.g. routine episiotomy. Used for 30-35 % vaginal births in USA (Hartmann et al JAMA 2005)
Examples of barriers to use of research findings
(Haines and Rogers 1998)

- **Educational system** - failure to reflect research evidence
- **Practitioner factors** - knowledge, beliefs
- **Patient factors** - demands for ineffective care, weak consumer movements
- **Organisation of care** - lack of follow up systems, inadequate medical records
Dealing with the volume of research

- >600,000 trials on Cochrane Clinical Trials Register
- ~ 2 million papers annually on health topics
- Systematic reviews essential to reduce bias and synthesize results (>6000 available in Cochrane Library)
The path from the generation of evidence to the application of evidence in clinical practice

Haynes R.B, Haines A BMJ 1998

- The patient’s circumstances
- The evidence
- The patient’s wishes

Making clinical decisions
Examples of interventions to promote use of research evidence in clinical practice

- Circulating printed materials
- (Outreach) education
- Reminders
- Computerised decision support
- Audit/Feedback
- Patient mediated
- Financial incentives
What effect do printed educational materials have on clinical practice?
(Farmer et al. Cochrane Database of Systematic Reviews 2008)

- Clinical guidelines or published papers
- Small positive effects (~4%) on categorical process outcomes – ordering of tests, X-rays, prescriptions etc (6 studies)
- (~13%) on continuous process outcomes (4 studies)
- No benefits for patient outcomes
The effects of on-screen, point of care computer reminders on processes and outcomes of care

(Shojania et al 2009)

- 28 studies
- Median improvement in process ~4% (vaccination, medication, test ordering)
- 8 studies reported patient outcomes e.g. BP - median improvement ~2.5%
Audit and feedback: effects on professional practice and health care outcomes
(Jamtvedt et al 2009 Cochrane Database of Systematic Reviews)

- 88 comparisons in 72 studies
- Median improvement ~5% in binary variables
- Median improvement ~18% in continuous outcomes
- Wide variation between studies
- Bigger effect where baseline practice poor and intensity of audit and feedback higher

www.achb.scot.nhs.uk/images/TheAuditCycle.gif
Continuing Education meetings


- 36 comparisons in 30 trials
- Median improvement 6% when meetings were part of intervention or used alone
- Only 5 measured patient outcomes
- Higher attendance – greater effect
- Mixed interactive and formal didactic better than either alone
- Less effective for complex behaviours
Educational outreach visits
(O’Brien et al 2007 Cochrane Database of Systematic Reviews)

- In the workplace
- 28 studies (34 comparisons)
- Median adjusted improvement ~6%
- Consistent effect for prescribing ~5 %
- Variable effects on other outcomes
The Evidence Based OutReach (EBOR) trial
Freemantle N, Nazareth I, Eccles M, Wood, Haines, BJGP 2002

Cost effectiveness
Mason J, Freemantle N, Nazareth I, Eccles M, Haines, Drummond M JAMA 2002

- The question - would 2 visits from a trained pharmacist promoting guidelines affect prescribing?

- The design – 69 practices in 6 districts randomised in pairs to 2 guidelines and control group for other 2 guidelines

- Pre and post-sampling of prescriptions for 11328 patients.
Impact of education by pharmacist

Primary Outcome Measure
- Outreach improved prescribing by 5% from 40% adherence pre intervention

Conclusions
- Smaller (1 or 2 GPs) practices improved their performance by 13%
- Larger practices did not improve (p-value for interaction <0.001)
- Outreach education achieved some behavioural change but cost money.
Virtual Outreach trial

Teleconferenced joint medical outpatient consultations

2094 patients randomised to standard or virtual outpatients in Shrewsbury and N. London

GP n=134
Hospital Specialist n=20
Difference in mean number of tests and investigations

(Overall difference $P<0.001$, interaction $P = 0.01$)
VOR Trial – Economic outcomes and conclusions

- No differences in numbers of health service attendances
- Reduced tests and investigations
- Increased satisfaction
- Increased Health service costs ($150) but small savings for patients
- Heterogeneity by site and specialty - surgical specialties less suitable?
Improving diabetes care
Cochrane Database of Systematic Reviews

- 41 studies and 48,000 patients but many poor quality and few looked at patient outcome

- A combination of approaches improved process of care

- Organisational interventions e.g. computerised systems for tracking patients for regular review and nurse contact and education can improve care and probably outcomes.
Interactive communication for patients with chronic diseases
(Murray et al 2009 Cochrane Database of Systematic Reviews)

- Use IT - often web-based
- 24 trials 3800 patients
- Convey probabilistic information, clarify the patient’s values and promote patient empowerment
- Beneficial effects on social support, knowledge, self-efficacy and to a lesser extent clinical outcomes
- Significant effect on continuous behavioural outcomes
Self-management programmes for chronic diseases run by lay leaders
(Foster et al 2007 Cochrane Database of Systematic Reviews)

- 17 trials 7442 participants
- Small reductions in pain (11 studies), disability (8), fatigue (7) and depression (6)
- Small improvements in self reported exercise (7)
- No differences in health care usage or hospitalisation
Improving the detection and management of heavy drinking in primary care

- Screening Questionnaire (n=62153)
- 2571 probable heavy drinkers interviewed
- 917 heavy drinkers randomised
RCT of brief intervention for heavy drinkers in primary care


- Estimate intake
- Compare with population
- Booklet
- Diary
- Practice strategies for cutting down
- Blood test (gamma GT)
- Follow up
Results

- Brief intervention has an impact on alcohol consumption over 1 year
- Confirmed by gamma GT (and Bp) in men
- Response related to number of sessions attended
- Effect confirmed by later WHO trial and systematic review
Interventions may work better for some outcomes than others – overview of 54 reviews of 17 strategies (Grimshaw et al 2002)

- **Prevention**: Reminders, Educational outreach, Computerized decision support
- **Diagnostic Test ordering** – feedback on performance
- **Drug dosing**- computerised decision support
- **Prescribing**- financial interventions (e.g. limited budgets), pharmacist control
Tailoring Interventions to Barriers
R, Camosso-Stefinovic J, Gillies C, Shaw EJ, Cheater F, Flottorp S, Robertson N. Cochrane Database of Systematic Reviews 2010

- 26 Trials of which 12 included in meta regression
- Modest benefit compared with non tailored interventions or written materials
- Different methods for identifying barriers e.g. interviews, focus groups
Conclusions – No ‘Magic Bullet’

- Many effects small but still useful
- Focus where performance is weak
- Consider costs and potential benefits
- Look at barriers to change
- Evaluate programmes with rigorous research
- Sustain action over time
Many barriers to getting research findings into practice but with planning and evaluation they can be overcome.