

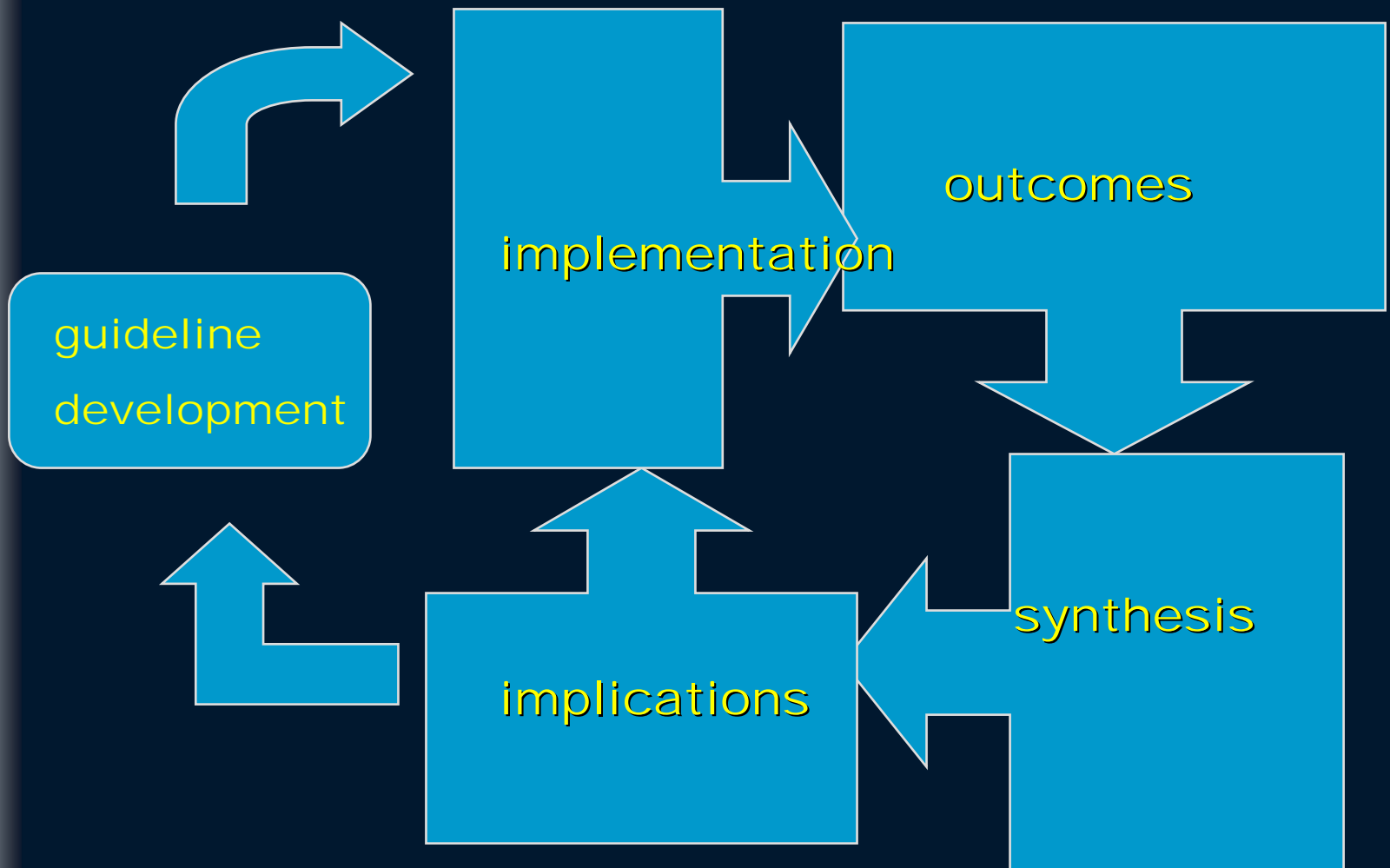
Evidence to Action; *Challenges for the Future*

Guidelines International Network

Dave Davis, MD, CCFP, FCFP, FRCPC(hon)

- ***Associate Dean, Continuing Education***
- ***Principal Investigator, Knowledge Translation Program,
University of Toronto***
- ***Chair, Ontario Guidelines Advisory Committee***

Evidence - Action: *an overview*

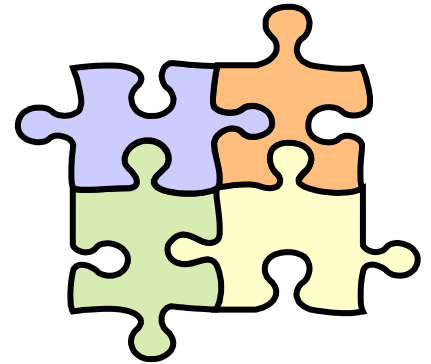


Vanessa Young

- Mild eating disorder (early satiety) diagnosed in 1998, in Oakville, Ontario
- Seen by child psychiatrist and family doc., prescribed cisapride, with excellent results
- *1990; massive drug launch, all the bells & whistles*
- *1992-98; subsequent, sporadic findings of cardiac arrhythmias released by drug company bulletins, federal warnings (via print materials)*
- 2000; Vanessa dies suddenly
- 2001; coroner's inquest: family doctor especially expresses inability to 'keep up with the information overload', like an 'avalanche'

Two important notions:

1) the implementation process



Diffusion: distribution of information and the practitioners' natural unaided adoption of policies and practices

Dissemination: communication of information to clinicians to improve their skills

Implementation: putting a guideline in place, involves effective communication, overcomes barriers by administrative and educational techniques

– (after Lomas)...



Increasing cost,
complexity

2) The EFFECT of interventions

- “Does CME work, Dave?”
- All these short courses - do they change how physicians practice?”

Fraser Mustard

(not the guy in CLUE-DO)
July 1977
Changing Physician Performance - a systematic review of the effect of CME strategies. JAMA 1995;274:700-705



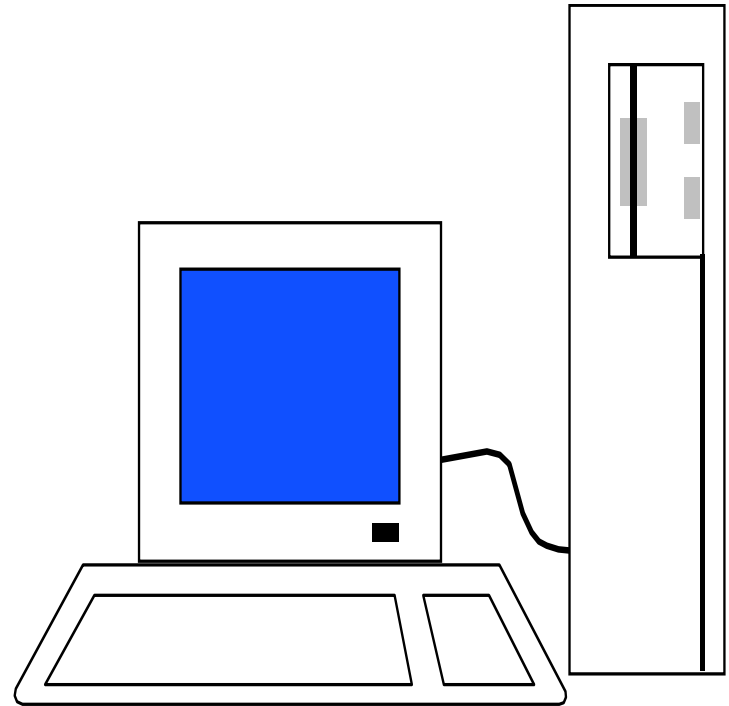
A Database of Knowledge Translation, Physician Education & Change

■ *The Research and Development Resource Base in CME*

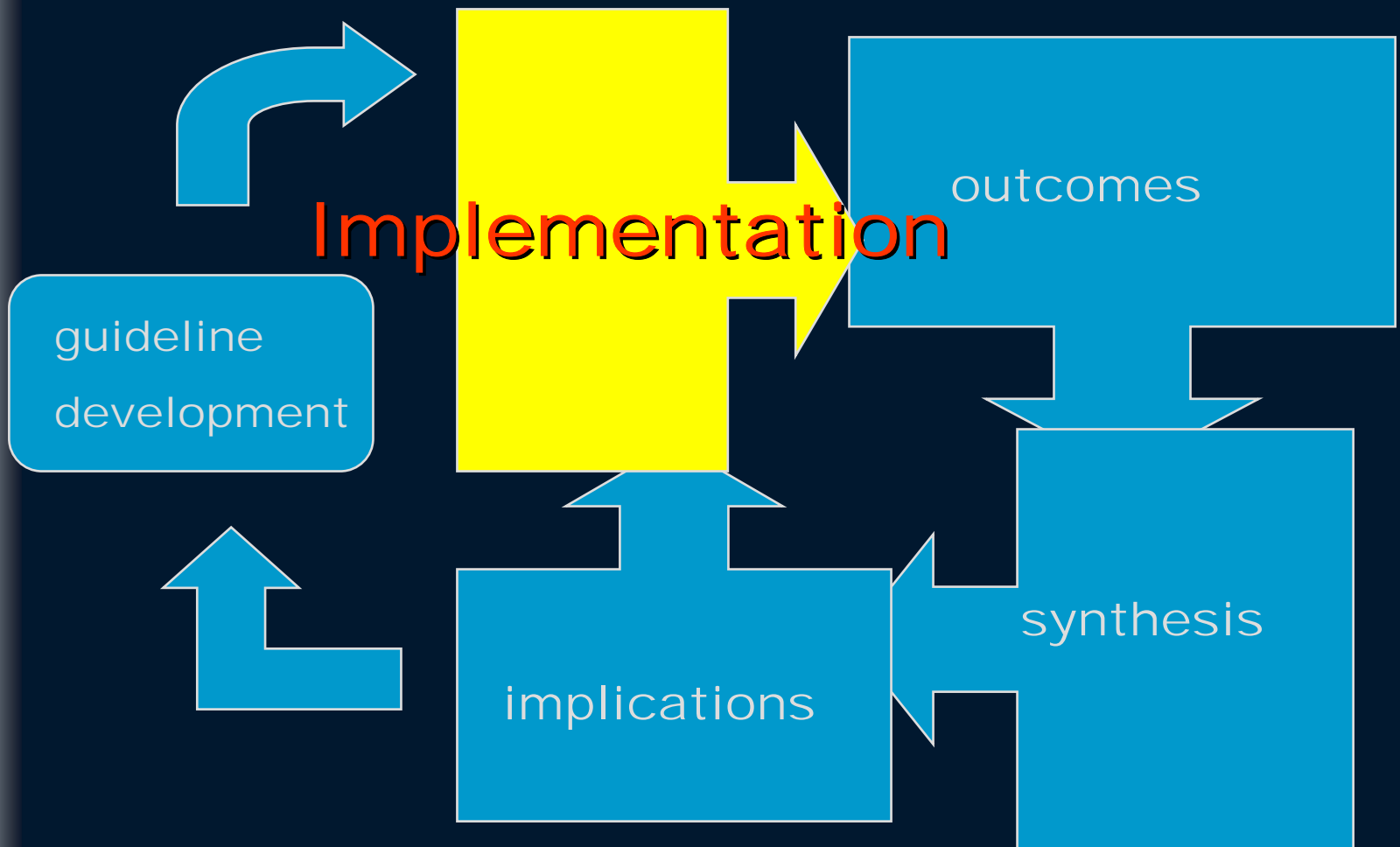
- educational, clinical & health services literature
- *supported by the AMA, ACME, SACME, Royal College of Physicians and Surgeons of Canada, the University of Toronto*

www.ktp.utoronto.ca

www.cme.utoronto.ca/rdrb



Guideline Implementation - an overview





1) Designing the Intervention: needs and barriers

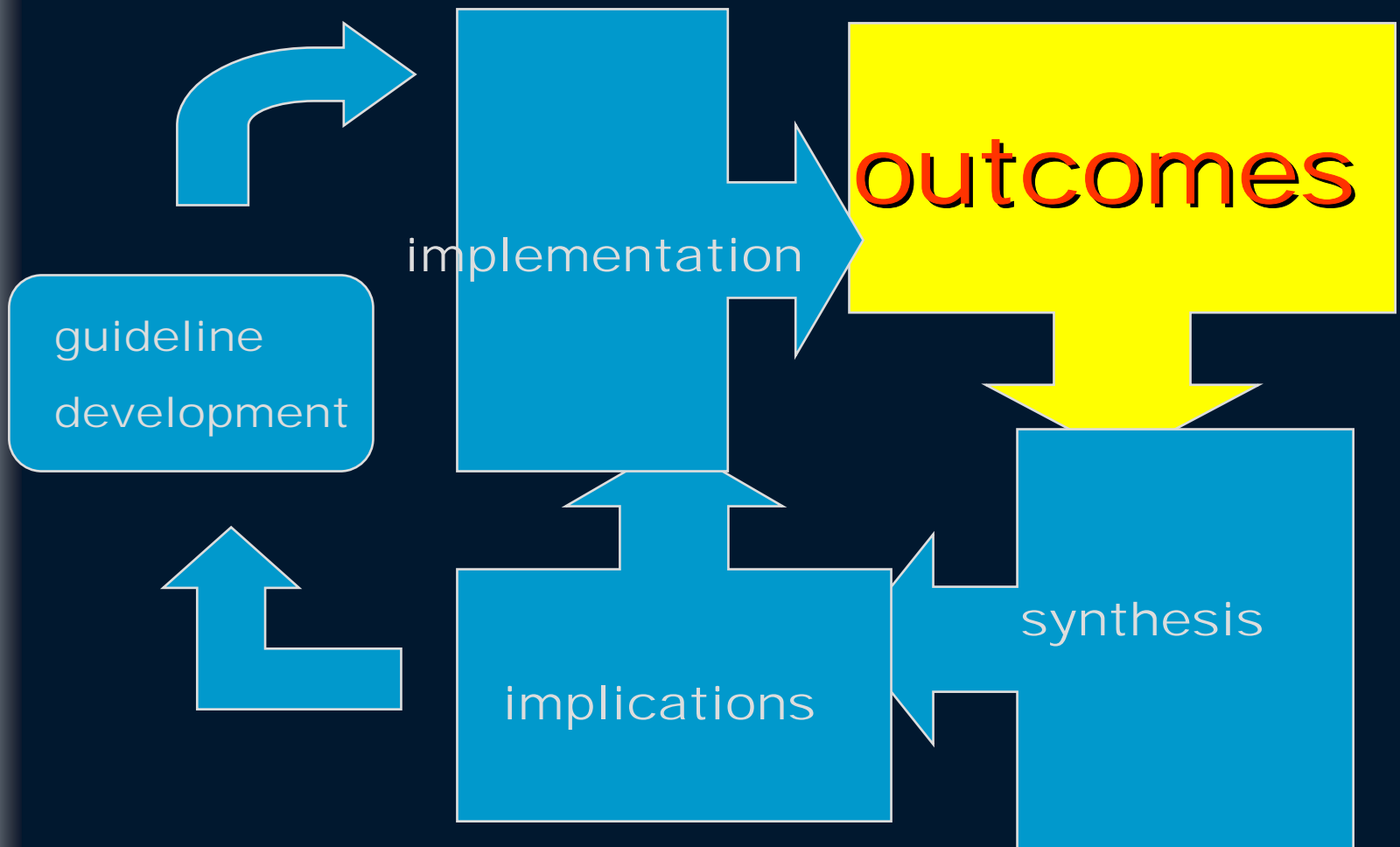
- So-called 'marketing', gap analysis or needs assessment strategies
- Requires analysis of
 - subjective needs (e.g., by focus groups)
 - objective needs (e.g., by chart review, data analysis)
 - barriers to change
- ***Very few studies, poorly designed, generally imbedded in other interventionist studies; considerable qualitative, educational research***

2) *Implementation strategies, interventions*

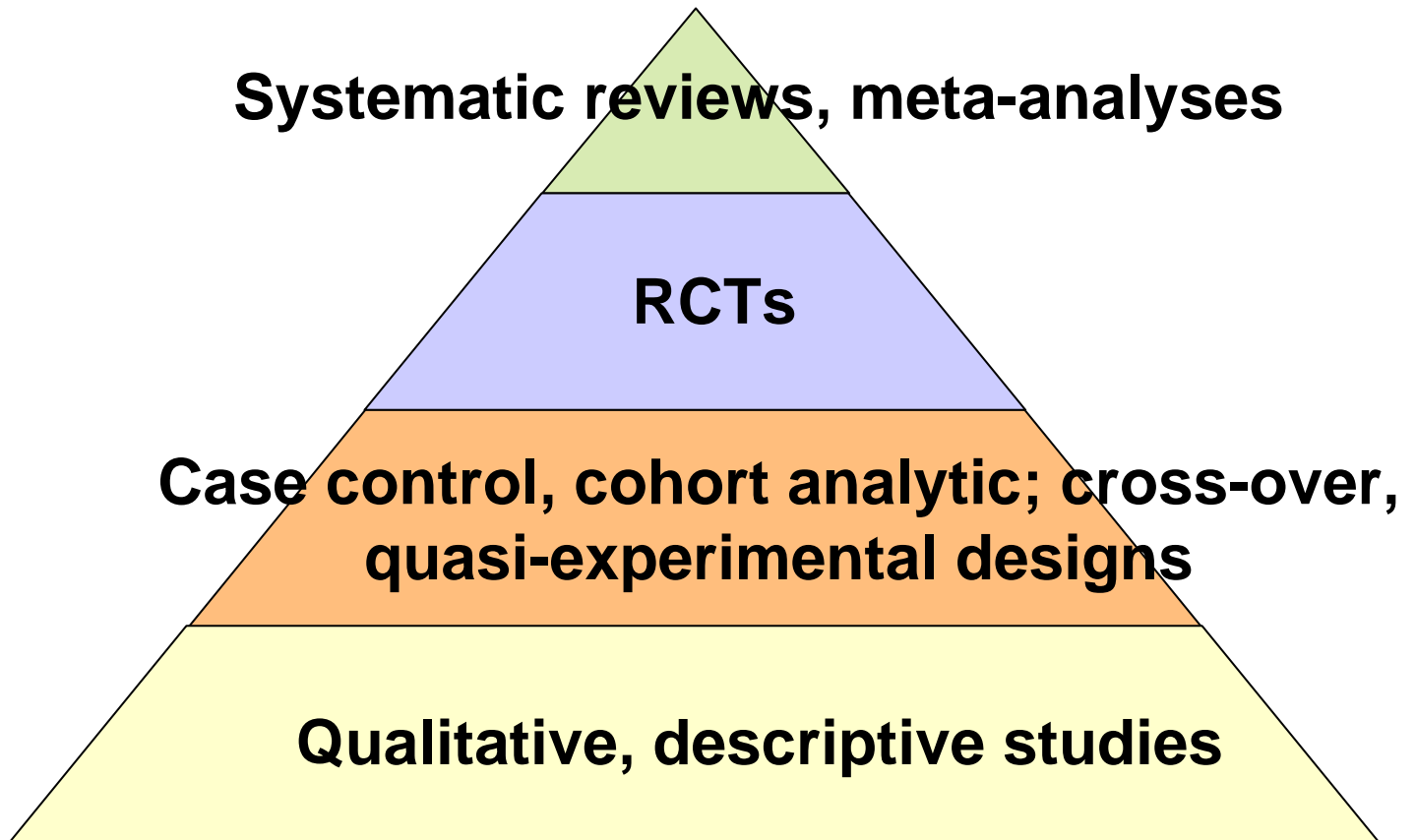
- Target – health professionals
 - Educational materials
 - Educational meetings, small group sessions, consensus processes
 - Outreach visits
 - Local opinion leaders
 - Audit/feedback
 - Reminders
 - Combination strategies
- Target – public/patients
 - Mass media
 - Patient mediated strategies
- ***Many quantitative studies, several hundred RCTs***



Guideline Implementation - an overview

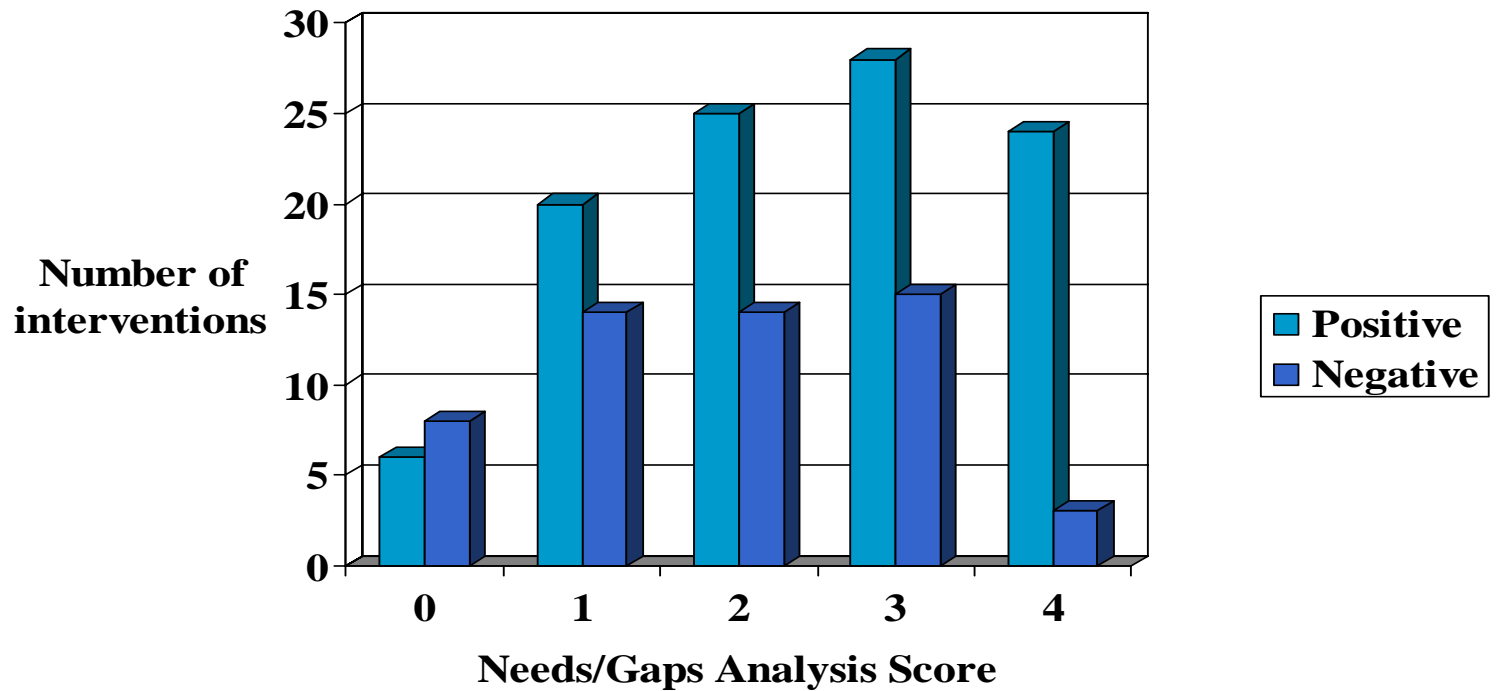


A hierarchy of the knowledge translation literature



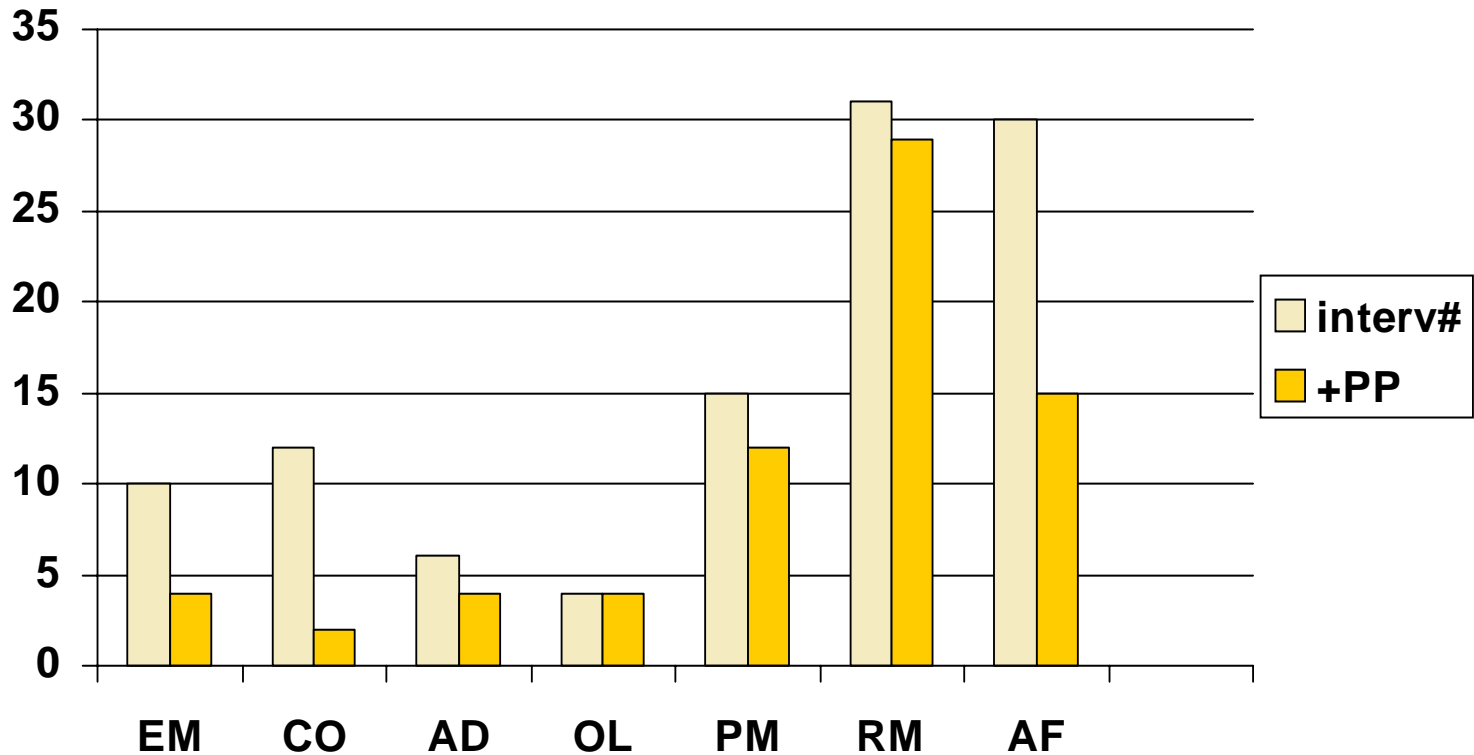
Effect of interventions

a) by needs/gap analysis



Davis & co., JAMA 1995

b) the effect of interventions on performance and HC outcomes



JAMA, 1995

c) By Formal 'CME'/CPD: *The effect of formal CME – 14 RCTS of conferences, symposia, rounds, meetings, lectures, JAMA 1999*

■ **Effective**

- Interactive or mixed didactic/interactive sessions
- Sequenced Sessions
- Needs assessment, enabling, reinforcing materials

■ **Not so Effective**

- Didactic Teaching
- One-time only sessions

■ **No Difference**

- Group size





d) The Effect of Interventions – an update

1) single health professional-targeted interventions (Grimshaw 2004, others)

■ **Educational Materials**

Small-moderate effect (8%); though earlier studies show little effect (Grimshaw 2004)

■ **Formal educational activities**

Small effect (approx 1-5%)

Small group learning?
(Cochrane 2000)

■ **Reminders:**

Moderate effect: (14%)

■ **Audit/Feedback**

Moderate effect (7%)

■ **Local Opinion Leaders**

Mixed effects

■ **Outreach Visits**

Moderately effective –
NB: prescribing and prevention



The Effect, an update, cont'd

2) examples of multiple interventions targeted to health professionals

■ **Multifaceted Interventions**

Difficult to determine effect: dependent on mix & strength of intervention in part - in general moderate effects (say 10%);

No apparent relationship between number of interventions and effect (Grimshaw, 2004)

■ **Compare:**

- Fox et al 1989, 1993
- earlier reviews attributed more power to multiple interventions

■ **Examples:**

- Educational materials, outreach + meetings
Moderate results: 11%
- Educational materials + audit-feedback
Moderate effect: 7%

MORE Effect, Updates

3) Interventions targeted to patients, public

- **Patient-mediated strategies**

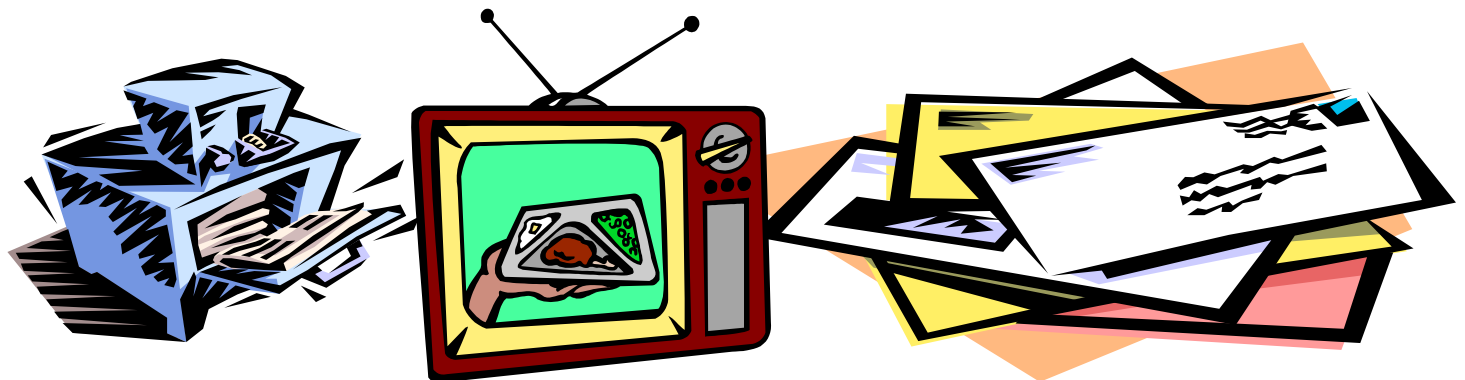
 - Moderate-large effect: (20%)

 - Especially useful in preventive care

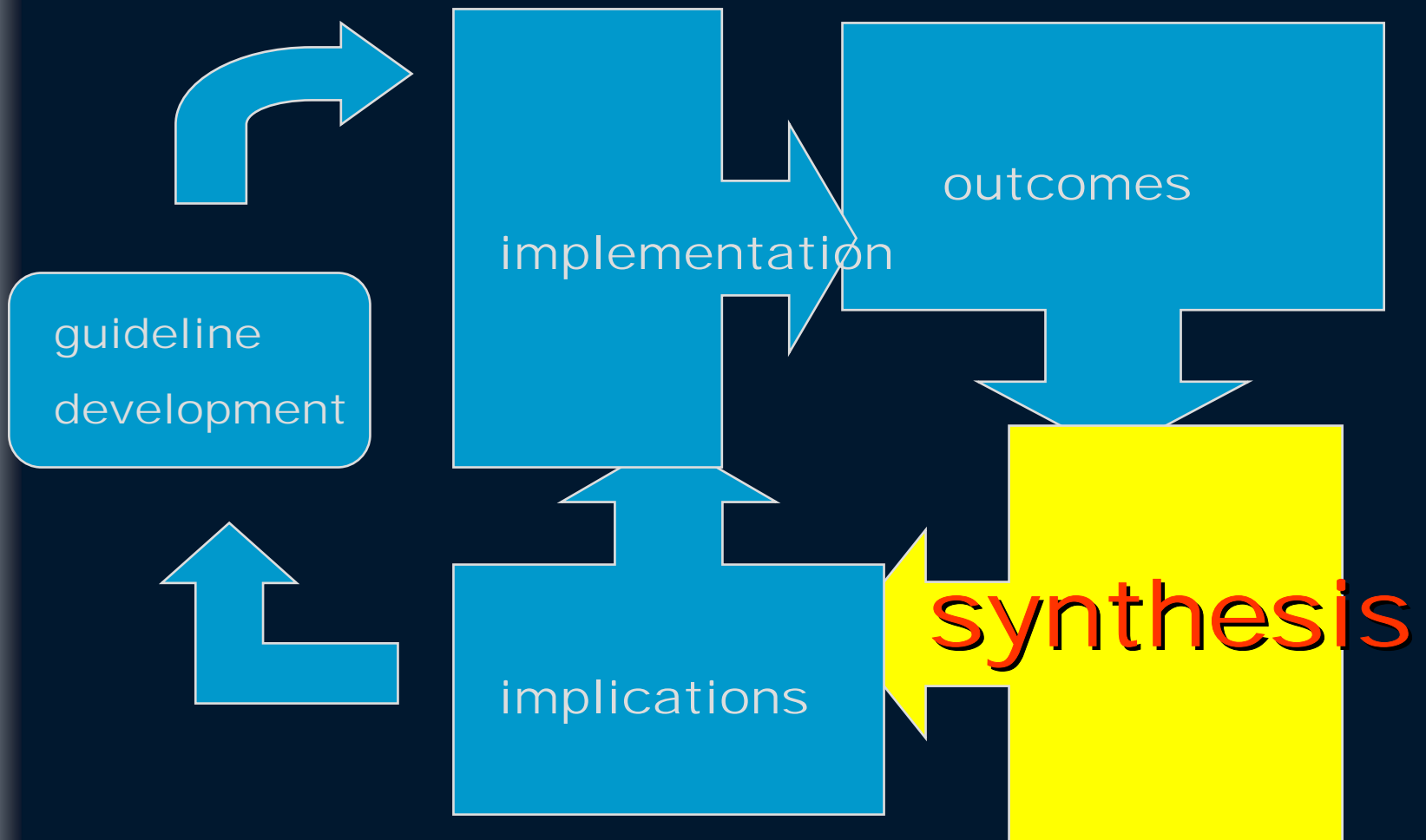
- **Mass Media interventions**

 - 20 studies, poor quality

 - All 'effective' though difficult to determine extent



Guideline Implementation - an overview



Cautions, Comments and Questions about these studies...

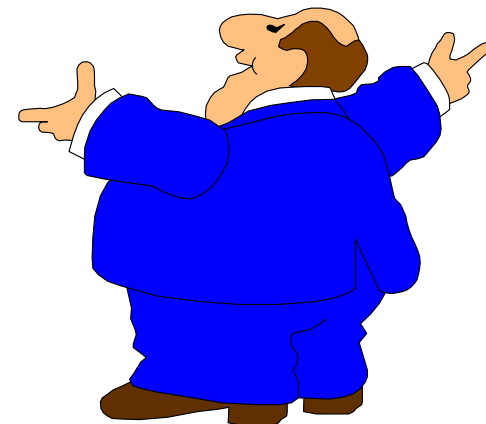
■ CAUTIONS

- *Publication bias, screening, reporting gaps*
- *Methodological issues* – e.g., concealment of allocation
- *quantitative bias*: little/no reference to type or size of change, needs of physicians, clinical setting, types of information, individual clinician characteristics
- *but.....*

■ COMMENTS

- size/scope/nature of field
- models for change
- the obvious: what works, what doesn't work

■ AND MANY QUESTIONS...



Should we be surprised?

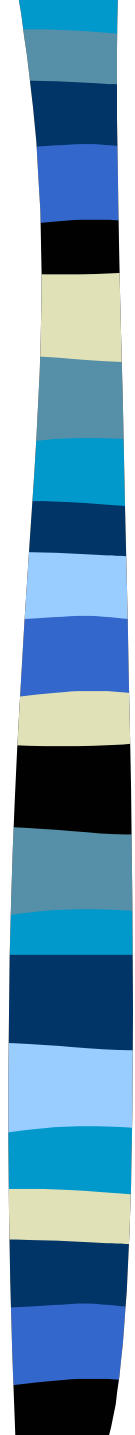
A look at the clinical care gap

- Overuse
 - Underuse
 - Misuse
- Chassin, 1998

Ideal, evidence-based practice

clinical care gap

Current practice





Overuse

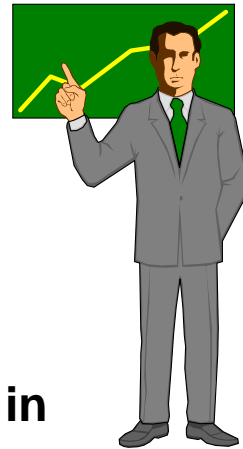
- Antibiotics in acute otitis media, acute bronchitis
- PSA screening
- Modified radical mastectomy in breast CA
- Routine, pre-op chest X-rays, EKGs
- Lumbosacral X-rays for acute low back pain

Underuse

- Pap Smears
- CHF & ACE inhibitors and beta blockers in the elderly
- Post MI patients: lipid lowering, ASA, beta blockers
- Atrial Fib & anticoagulation

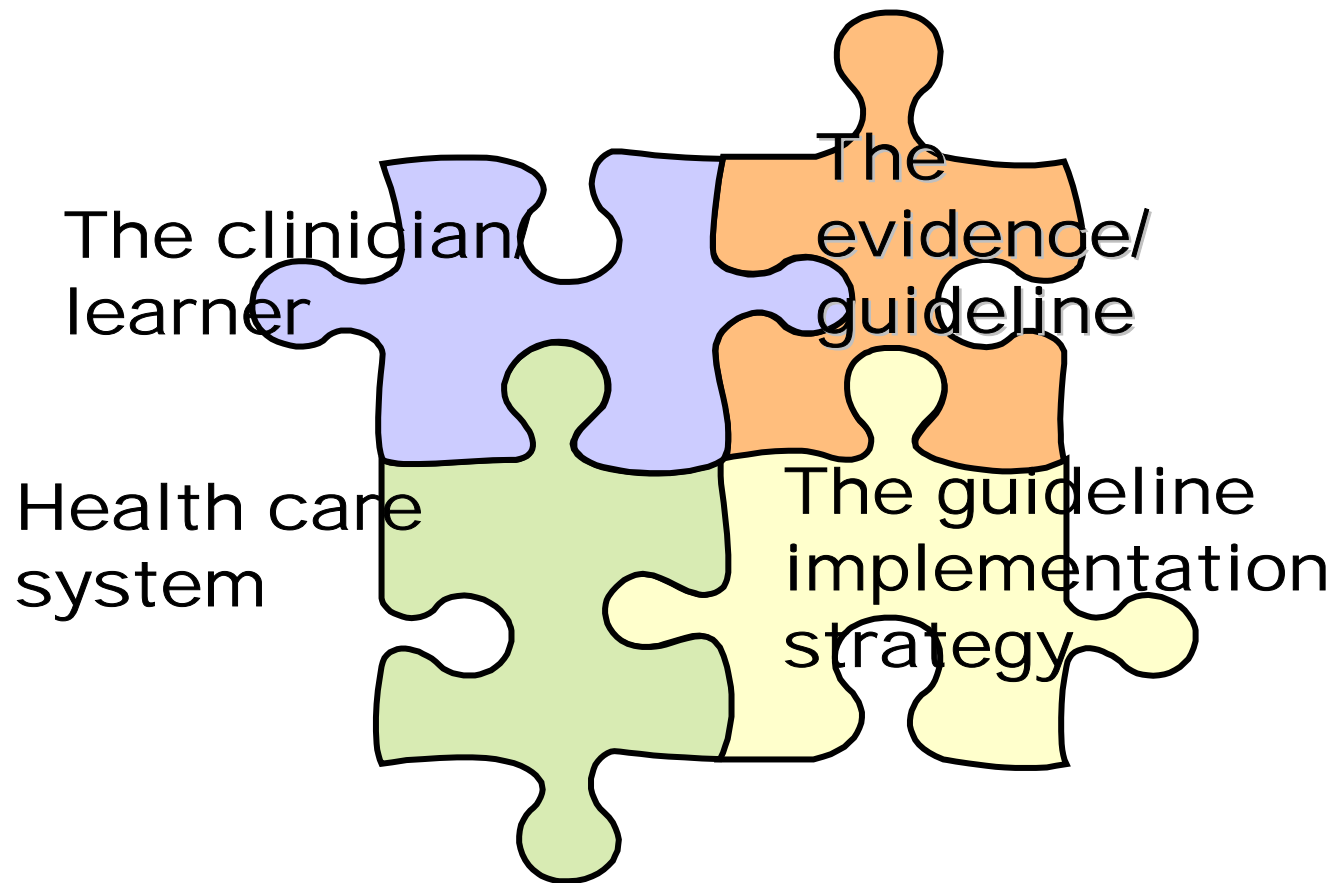
Misuse

- Tricyclic antidepressants in the presence of cardiac arrhythmias
- Beta blockers in diabetics, asthmatics
- *Cisapride*



What causes the gap?

The evidence-to-practice puzzle



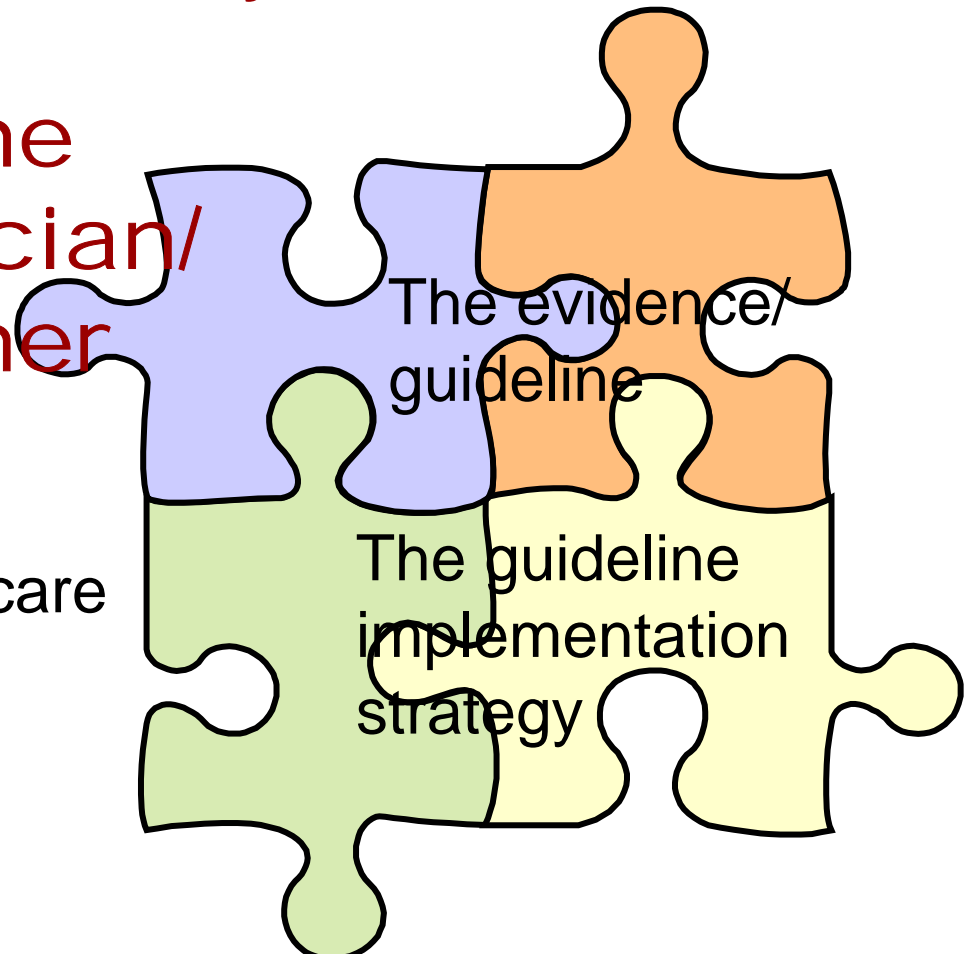
What causes the gap?

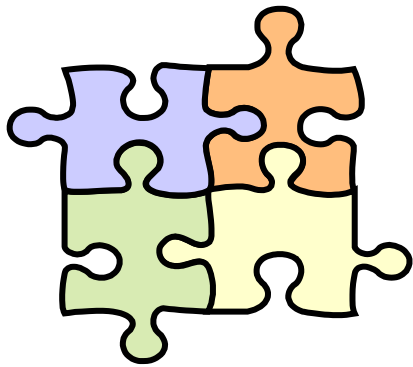
The evidence-to-action puzzle

1) The Evidence Delivery System

2) The clinician/learner

Health care system





.....problems with the learner-clinician

- age, motivation
- (dis)incentives
- experience
- time
- environment
- *training*
 - *Emphasis on knowledge*
 - *Inability to detect needs, evaluate performance*
 - *?self-directed learning*
 - *?critical appraisal*

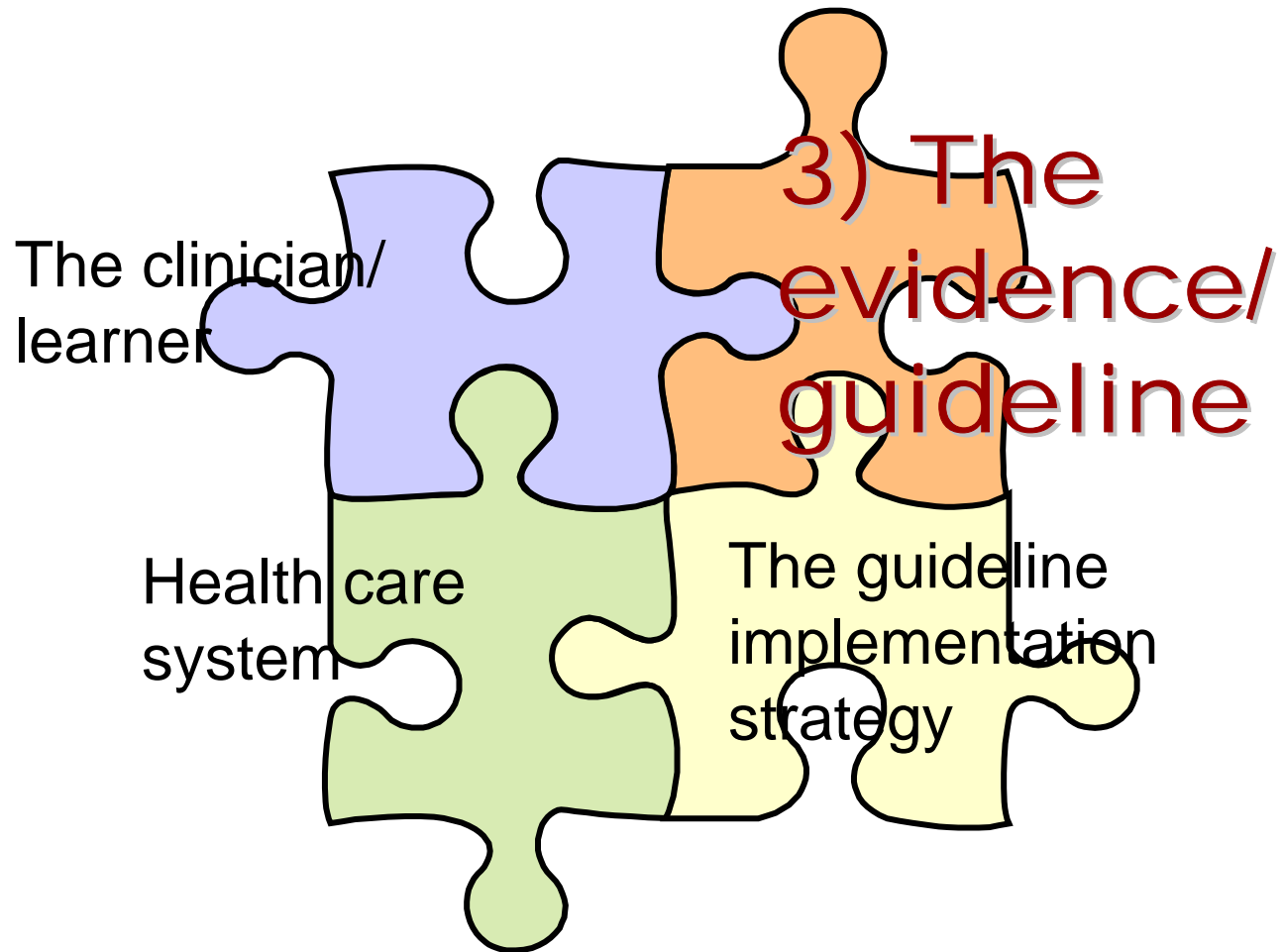


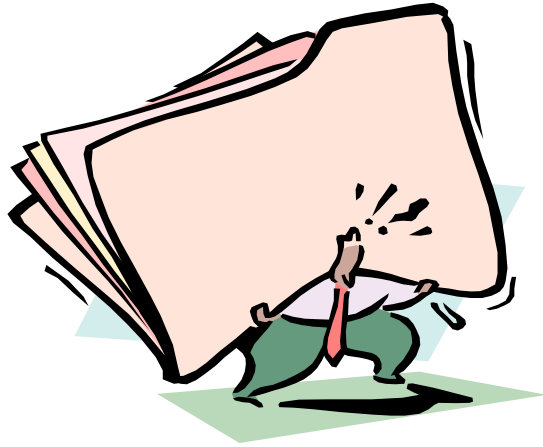
■ The Pathman Model

- awareness: of a guideline, practice innovation, change
- agreement: with the innovation or guideline
- adoption: ‘trying out’ the new practice, irregularly
- adherence: abiding by the new practice on all appropriate occasions
 - *Pathman, 1996*

What causes the gap?

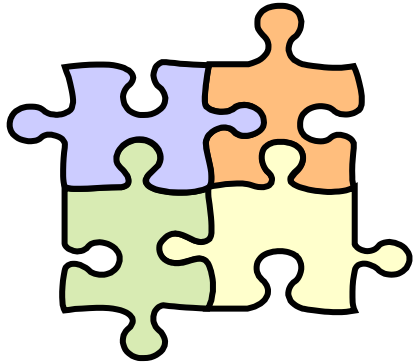
The evidence-to-practice puzzle





a) Volume

**“Information management is like
having your mouth to a
firehose”** *David Naylor, Dean, Faculty of
Medicine, University of Toronto*



b) Other problems

- compatibility
- complexity
- cost
- relative advantage
- accessibility
- format
- patency of evidence, process of development
- opportunity; trial-ability
- *Note the AGREE instrument*



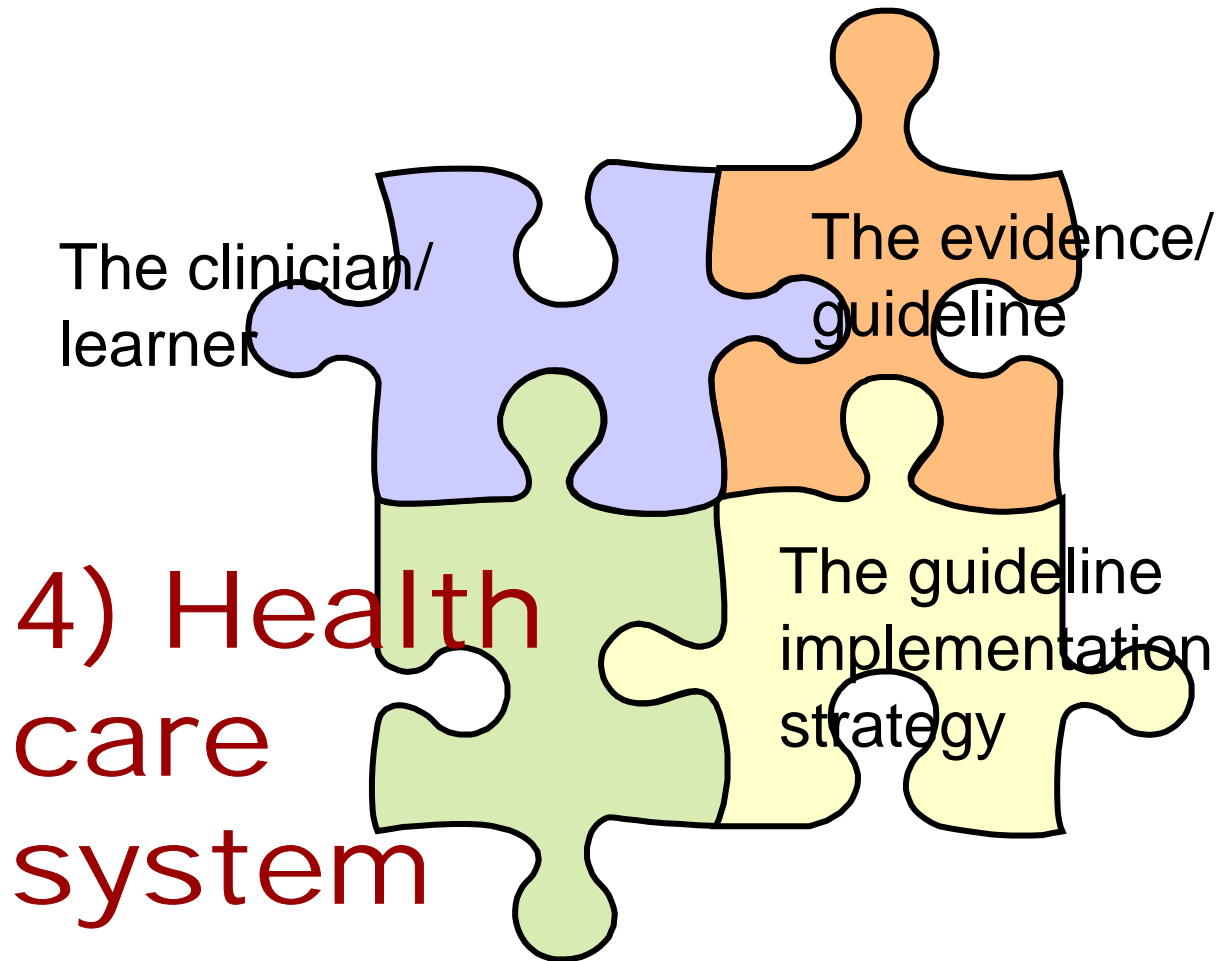
The nature/content of the guideline vs. uptake:



- Guidelines of high complexity less followed than those with low (42% vs. 56%)
- Guidelines easily trialed more followed than those not (56% vs. 37%)
- *But, overall..... characteristics of the guideline account for <50% of variation*

What causes the gap?

The evidence-to-practice puzzle





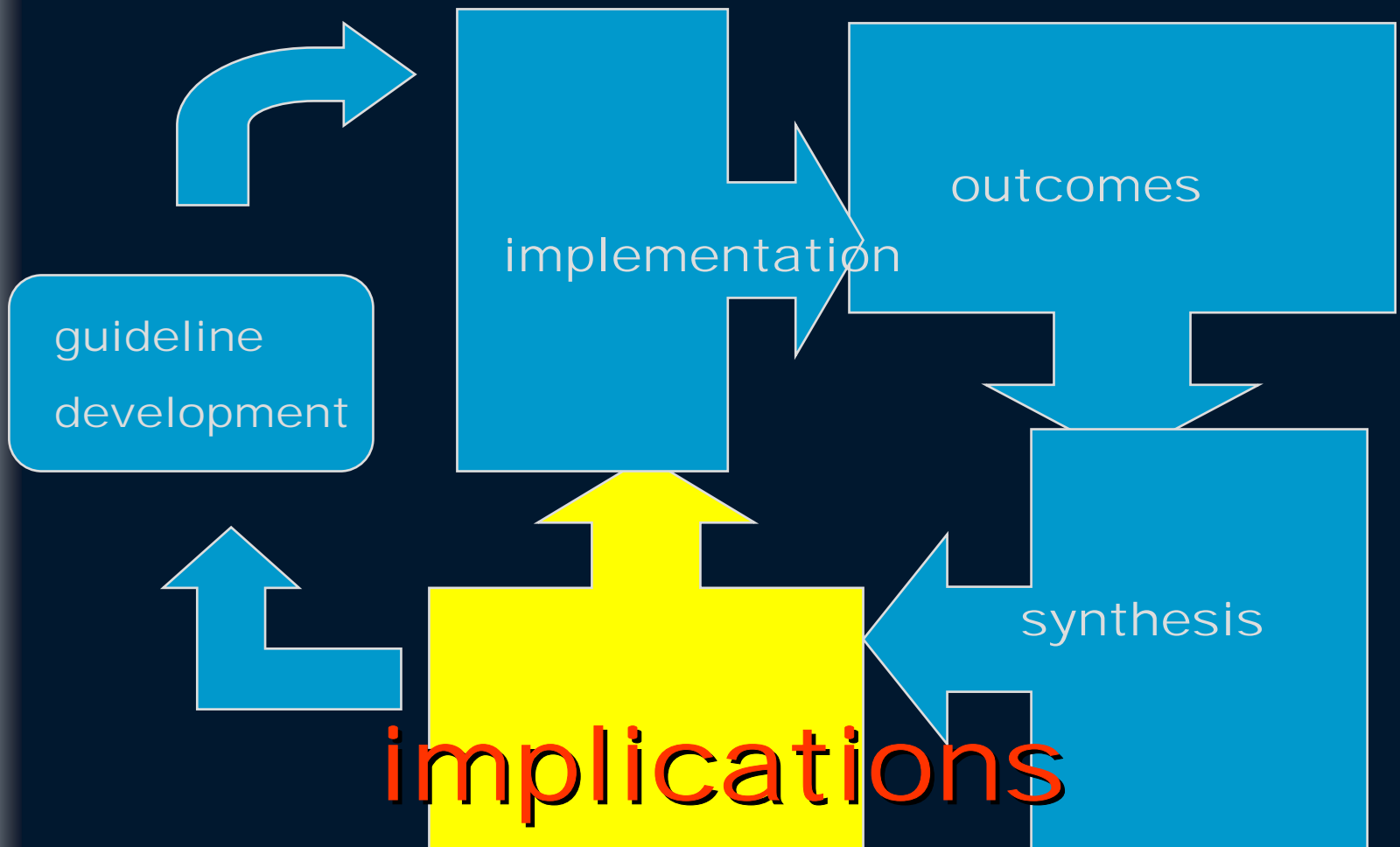
Consumers can drive change

NHS Consumer Health Information Web Site December 2001 5.2 million hits – 171900 visitors (Powell & Clarke, 2002)

Fifty-eight per cent of GPs have been approached by patients with Internet healthcare information. Sixty-five per cent of the information presented by patients was new to GPs. (Wilson, 1999)

"Mrs. Nortman just sent in this fax of a rash that she's got on her stomach."

Guideline Implementation - *an overview*





A NEW NAME, OLD CONCEPT?

- **“Knowledge translation** is the effective and timely incorporation of evidence-based information into the practices of health professionals in such a way as to effect optimal health care outcomes and maximize the potential of the health system”

– *Adapted from the Canadian Institutes for Health Research definition, 2001*

Cell Phones – A metaphor for knowledge translation?

■ **Adoption of innovation,** e.g., cell phones...

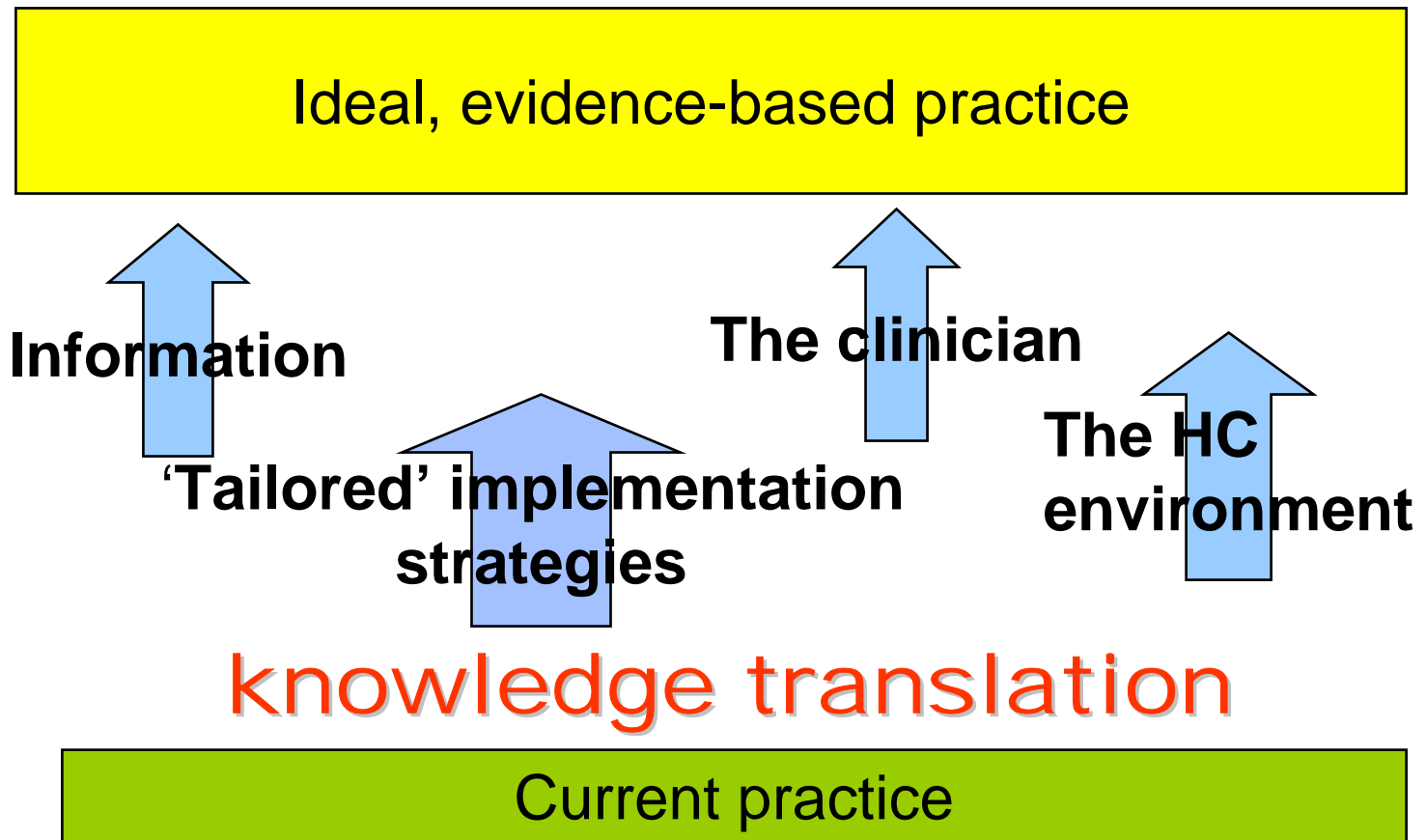
- **Device itself:**
characteristics, functions
- **Communication media:**
advertising, sales, social network of individuals
- **Environmental issues:**
current resources, needs, technical infrastructure
- **Individual/personal characteristics:** tasks, training, need, value, affordability



■ **KT:** does the rate vary with?

- **Information characteristics**
- **Intervention**
- **Health care environment/system**
- **Intra-personal /professional characteristics?**

Variables in Closing the clinical care gap: *is knowledge translation the Next Big Thing?*





**"Never make forecasts,
especially about the
future."**

Sam Goldwyn

***"The future's already here; it's just a
little patchy is all."***

John Parboosingh



Information Solutions:

- **Cochrane, AGREE Collaboration**
- **SIGN, NZ Guideline Activities**
- **The Guidelines Advisory Committee, Ontario**
 - Joint body of the Ontario Medical Association and the Ministry of Health and Long term Care, Ontario
 - Chooses a topic area; reviews all guidelines in that area; scores them by the Cluzeau/AGREE instrument
 - Mounts them on a website
 - Quick, 30 second synopsis
 - Parallel patient synopsis
 - Other links to QA tools, algorithms
 - **Simultaneous distribution/dissemination/implementation through collaborations**

RECOMMENDED
**Clinical Practice
Guidelines**

[ABOUT
THE GAC](#)[REVIEW
PROCESS](#)[GUIDELINE
COLLABORATIVE](#)[BECOME
A REVIEWER](#)[OTHER
GUIDELINE SITES](#)[CONTACT
US](#)[HOME](#)

Guideline Search:

Choose a Guideline:

- Acute Myocardial Infarction (AMI)
- Angina
- Asthma
- Breast Cancer (Prevention)
- Cardiovascular/Heart Disease
- Chest Pain
- Cholesterol/Lipids

More than a collection...

This site gives physicians quick access to recommended guidelines for common medical conditions.

The [Guideline Advisory Committee \(GAC\)](#) endorses each recommended guideline following an in-depth [review](#). Summaries of the guidelines rated most highly and links to all available guidelines are provided.

www.gacguidelines.ca

 Ontario





“Tailoring” Interventions

■ PREDISPOSING

- lectures, rounds, conferences
- printed material
- other, e.g.. A-V material
- academic detailing

Evidence for the Effectiveness of CME; a review of 50 RCTs. JAMA, 1992

■ ENABLING

- patient education
- flow charts, algorithms
- opinion leaders

■ REINFORCING

- audit/feedback
- ## **■ reminders**



Methods for changing provider performance by Pathman stages

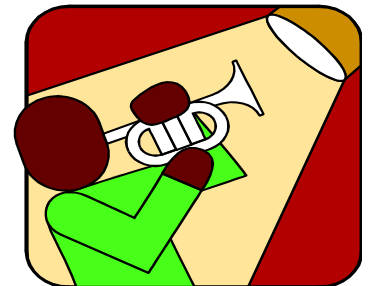
Davis et al, BMJ, 2003

An example – GAC-endorsed implementation projects

Methods/ Stages	Awareness	Agreement	Adoption	Adherence
Predisposing	Print material, Lectures, Conferences Newsletters, <i>Media</i>			
Enabling		Opinion leaders, local consensus, <i>adaptation</i>	Flowcharts, Opinion leaders, <i>e-Decision Support</i>	
Reinforcing			Reminders, Audit/ feedback	Reminders Audit/ feedback

‘Solving’ the learner and health care system problems

- **MD education, other health professional & postgraduate training**
 - Enhance & assess self-directed learning, critical appraisal, knowledge mgmt. skills, portfolios
 - Use learning resources of practice
- **CE, Professional Development**
 - Enhance assessment skills; critical appraisal, knowledge management, search strategies
 - Broaden familiarity with educational interventions, health systems
- **Systems approaches to guideline implementation**
 - Managed care incentive programs
 - Data-, population-health linked interventions
 - Evidence-based policy decision-making





Finally – some practical applications

- *Needs Assessment* appears to be important – triangulating the issue (subjective needs, objective, gaps and barrier analysis)
- Some interventions with small/moderate effects; *NO magic bullets* (except ?reminders)
- *Multiple methods may* work better when considered as predisposing, enabling & reinforcing
- ***Work with variables in KT:***
 - Information sources and formats,
 - Personal characteristics of the clinician, patients, public
 - System-based policies and intervention strategies



■ A few research directions

- Large body of guideline intervention literature, mostly unheeded in study design
- Quantitative methodology necessary but not sufficient to understand change
- Little evidence yet about long-term effects, formal needs assessments, etc., etc
- Need to re-conceptualize guideline implementation in order to incorporate models of ‘knowledge translation’, or guideline implementation; study variables, model change strategies
- *Collaboration* – on tool development, collection, etc; the benefit of the GIN

■ And...remember Vanessa

***For more
information.....***



www.ktp.utoronto.ca



www.cme.utoronto.ca

