

The Science of CME

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Knowledge Translation Program
knowledge to practice
Faculty of Medicine, University of Toronto

 **Continuing Education**



FACULTY OF MEDICINE

GREAT MINDS FOR

A GREAT FUTURE

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**GUIDELINES
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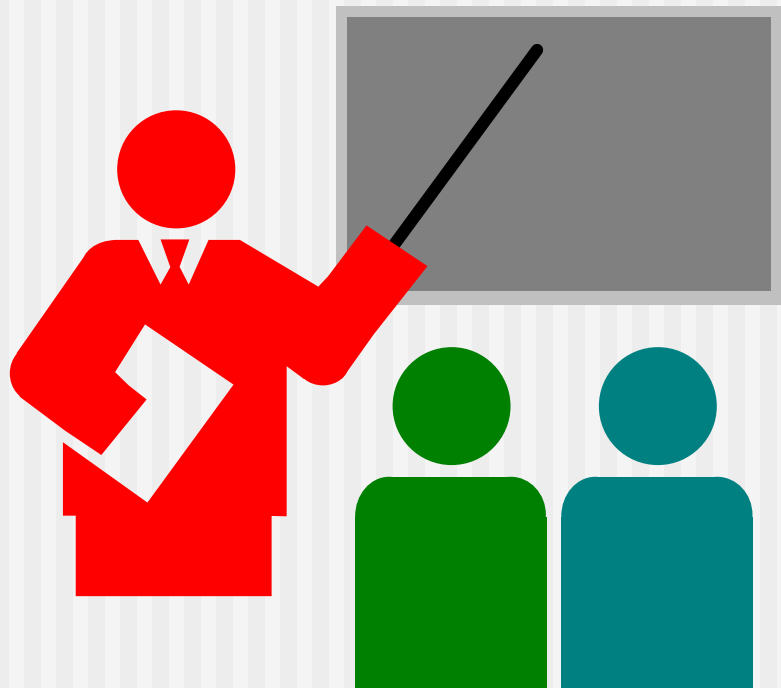
Four Questions – *or, all you wanted to know about CME but were afraid to ask*

- 1) What do we mean by CME? By other terms like, dissemination, knowledge translation, a clinical care gap?
- 2) Does it work?
- 3) How would we know if it does or doesn't?
- 4) (How) can we fix it?

Question #1

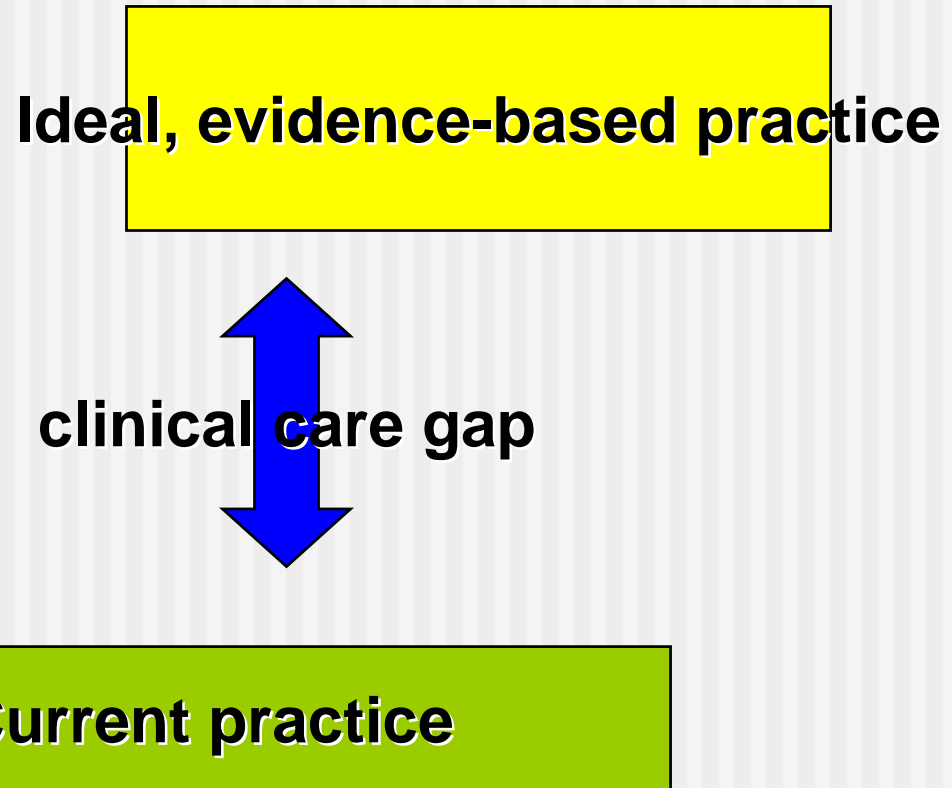
What do we mean by CME? By other terms like diffusion, implementation, 'work'?

what do we mean by 'CME'?



- educational materials
- formal CME: lectures, small groups, courses
- outreach visits
- opinion leaders
- patient-mediated strategies
- audit/feedback
- reminders (paper, computerized, interactive, etc)
- comprehensive, practice-based interventions
- computer tools

The clinical care gap



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- **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)...*

-
- “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*



“Information (knowledge) management is like having your mouth to a firehose”

*David Naylor,
Dean, Faculty of Medicine, University of
Toronto*

Question # 2

CME: *Does it work?*



Several Reviews

- **INCLUSION CRITERIA:**
 - Randomized Controlled Trials
 - Replicable, educational interventions: meetings, feedback, audiotapes, reminders, lectures, etc
 - >50% practicing physicians/professionals
 - Objective outcomes of physician performance or patient/health care status

The effect of formal CME - conferences, symposia, rounds, meetings, lectures

JAMA, 1999;282:867-74

■ Effective

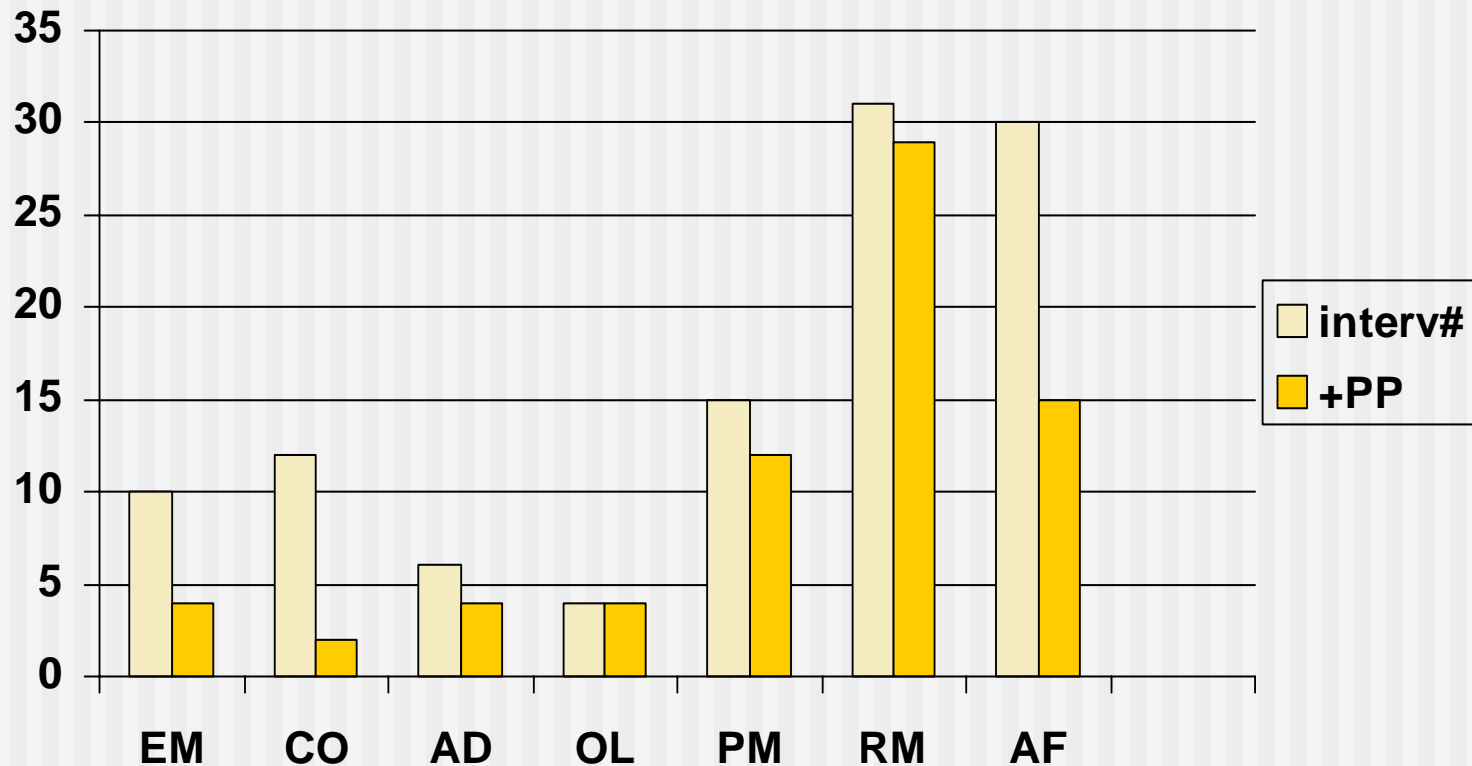
- * Interactive Lecturing
- * Sequenced Sessions
- Needs assessment
- Enabling, reinforcing materials

■ Not so Effective

- Didactic Teaching
- One-time only sessions
- No Difference
 - Group size



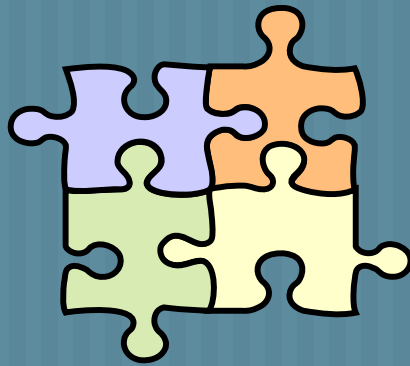
Changing Physician Performance - a systematic review of the effect of CME strategies *JAMA* 1995;274:700-705



Other overall findings...

- *Needs Assessment* appear to be important – the more the better (subjective needs, objective, gaps and barrier analysis)
- *Multiple methods* may NOT work best
- No evidence yet about *long-term effects*
- *Group size*: no demonstrated effect
- *Effective CME* may have predisposing, enabling and reinforcing strategies
- Knowledge necessary but not sufficient for change
- Quantitative methodology necessary but not sufficient to understand change

Question # 3: How would we know if CME worked?

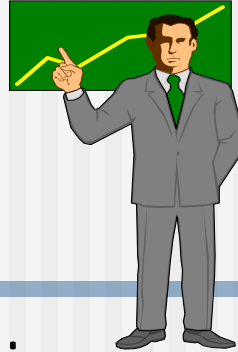


The Clinical Care Gap

- Overuse
- Underuse
- Misuse

Chassin, 1998

overuse



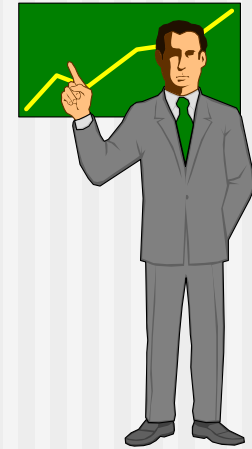
- Acute pharyngitis
 - Fahey 1998
- Acute Otitis Media
 - Delmar 1997
- Acute bronchitis
 - 65-80% vs. 20%
 - Gonzales 1997
- **?PSA screening**
- **?Mammography for low risk women age 40-50**
 - Gotzsche, 2000

■ Others.....

*(Ministry of Health,
Ontario data, 2001):*

- Hysterectomies
- Repeat C-Sections
- **Modified radical mastectomy in breast CA**
- **Routine, pre-op chest X-rays, EKGs**
- **Lumbosacral X-rays for acute low back pain**
 - *Routine q6-12month echocardiograms in stable CHF
- *? Sleep studies

underuse



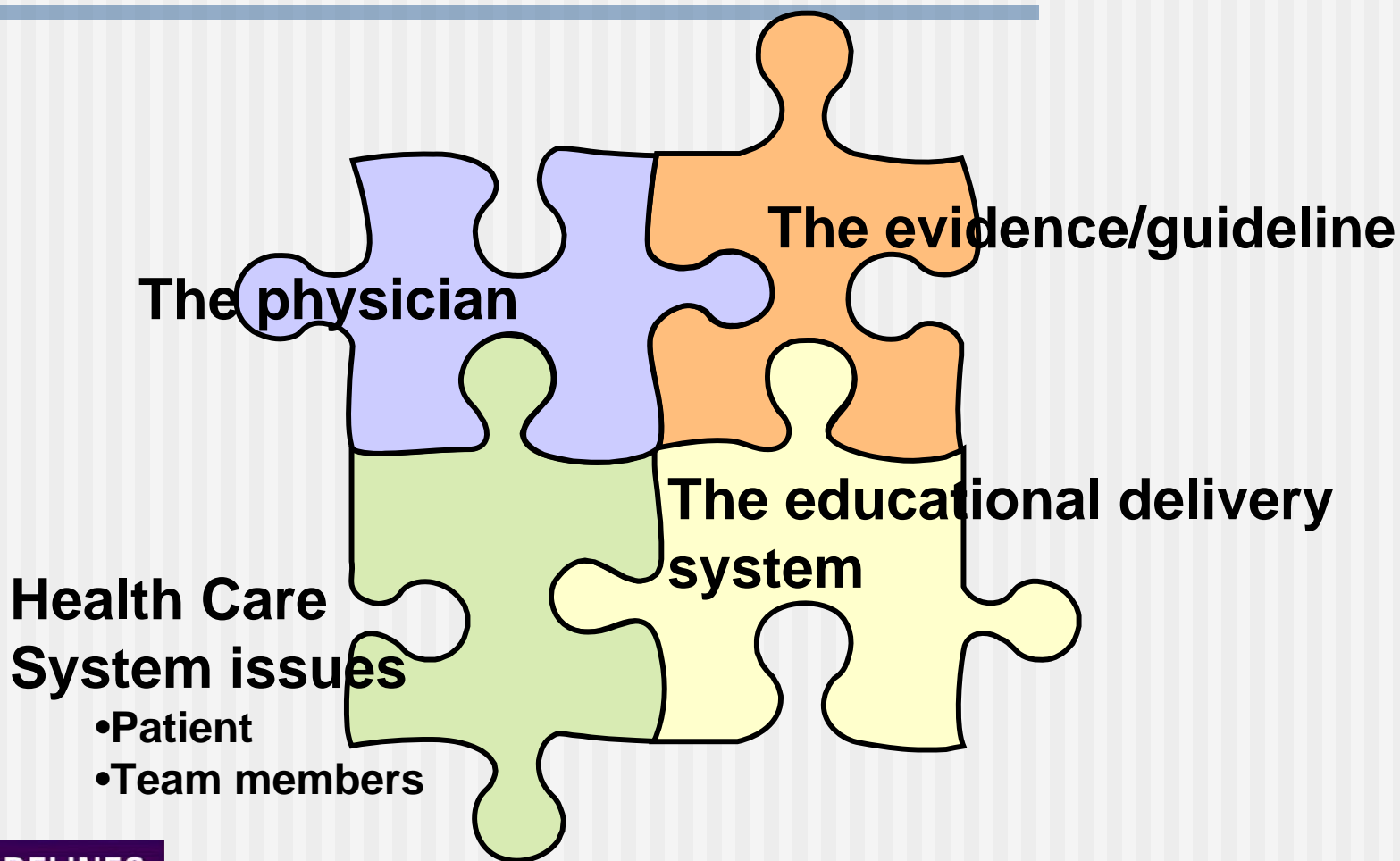
- Pap Smears: *Pirkis, 1998*
- CHF & ACE inhibitors
Hickling 2001
- Post MI patients
 - Lipid lowering:
 - ASA
 - Beta blockers
- Atrial Fib & anticoagulation
- Diagnosis of mental disorders
- **Inadequate sampling of omental lymph nodes in colorectal CA**

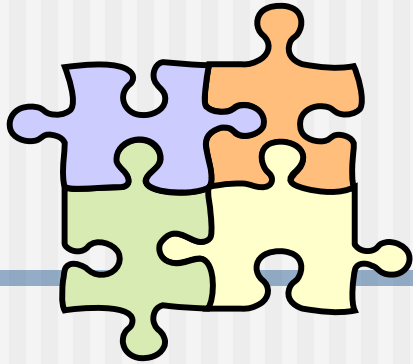
■ ...and misuse

- Beta blockers in diabetics, asthmatics
- Tricyclic antidepressants in the presence of cardiac arrhythmias
- *Cisapride* (knowing what we know today)

What causes the gap?

The evidence-to-practice puzzle

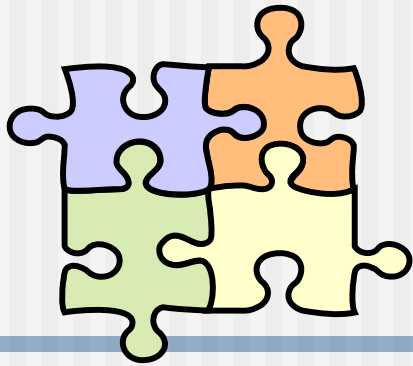




....problems with the guideline, evidence itself

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





.....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*



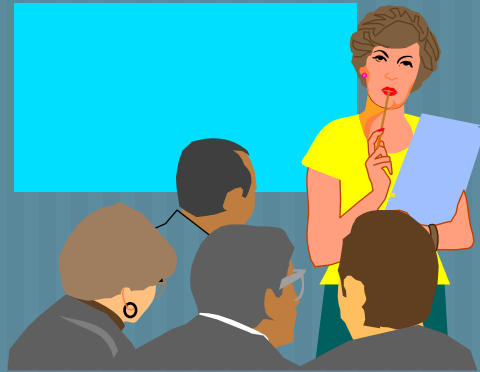
- **The Pathman Model**
 - awareness: of a guideline, practice innovation, change
 - agreement: with the innovation or guideline
 - adoption: 'trying out' the new practice, irregularly
 - adherence: abiding by the new practice on all appropriate occasions
 - *Pathman, 1996*

No time...



No, Thursday's out. How about never-is never good for you?

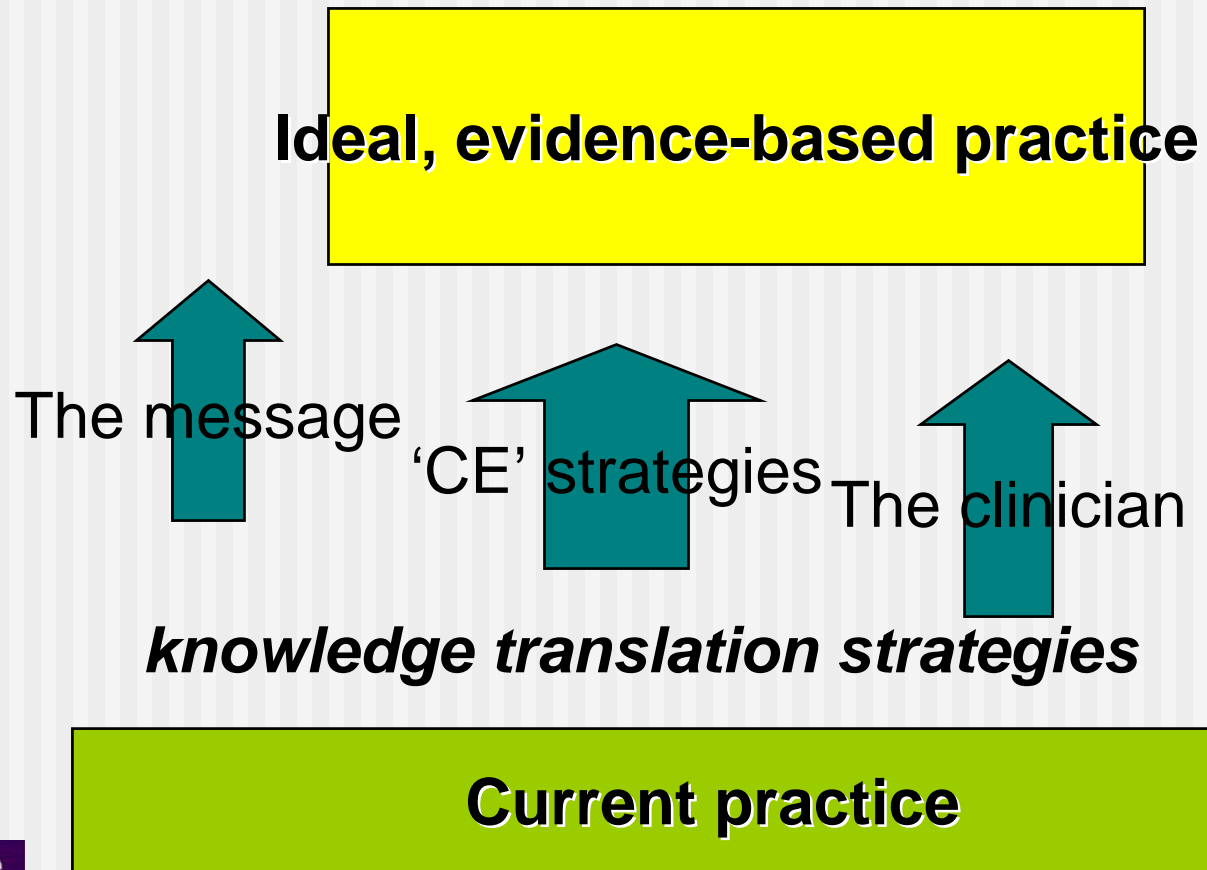
Question #4: Can we fix CME?



"Never make
forecasts,
especially
about the
future."

*Sam
Goldwyn*

The clinical care gap: possible solutions



‘Solving’ the message problem

- **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 medical schools, licensing body, professional associations, hospitals, etc
- www.gacguidelines.ca

‘*solving CME*’; using the tools of knowledge translation

Educational (KT methods)	Current picture	Possible scenario
Less effective	Didactic courses Print materials	
Effective	(audit, feedback)	Effective CME methods

Methods for changing provider performance by Pathman stages

Methods/ Stages	Awareness	Agreement	Adoption	Adherence
Predisposing	Print material, Lectures, Conferences Academic detailing, Media	Interactive sequential sessions		
Enabling		Small groups, Opinion leaders	Pt. Education, workshops Opinion leaders	
Reinforcing			Reminders, Audit/ feedback	Reminders Audit/ feedback



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

Consumers can drive change, too

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)

A few final words

- Large body of educational literature, unheeded, misunderstood \implies 'knowledge translation'
- From CME: no single effective change agent (except maybe reminders); methods work at different levels of change - predisposing, enabling & reinforcing
- Need to re-conceptualize CME, in order to incorporate models of 'knowledge translation', or guideline implementation
- Similar need exists in pre-practice training: a seamless, evidence-based educational continuum
- Hope for the future: ACGME competencies, new funding, awareness of the care gap

*For more
information.....*



www.ktp.utoronto.ca



www.cme.utoronto.ca



www.gacguidelines.ca