Implementating research evidence into practice Knowledge Translation

Hyeong Sik Ahn MD. Ph.D.

Department of preventive medicine

Korea university, Seoul, Korea

Knowledge translation

‘All breakthrough, no follow through’

Woolf (2006) Washington Post op ed

- The benefits of the US $100 billion/year worldwide investment in bio medical and health research are not optimally achieved because of kno wledge translation failures

Background

- Consistent evidence of inappropriate care:
  - 30-40% patients do not get treatments of proven effecti veness
  - 20–25% patients get care that is not needed or potentiall y harmful
- Suggests that ensuring knowledge translation is a fundam ental challenge for healthcare systems wanting to optimise care, outcomes and costs

Schuster, McGlynn, Brook (1998). *Milbank Memorial Quarterly*

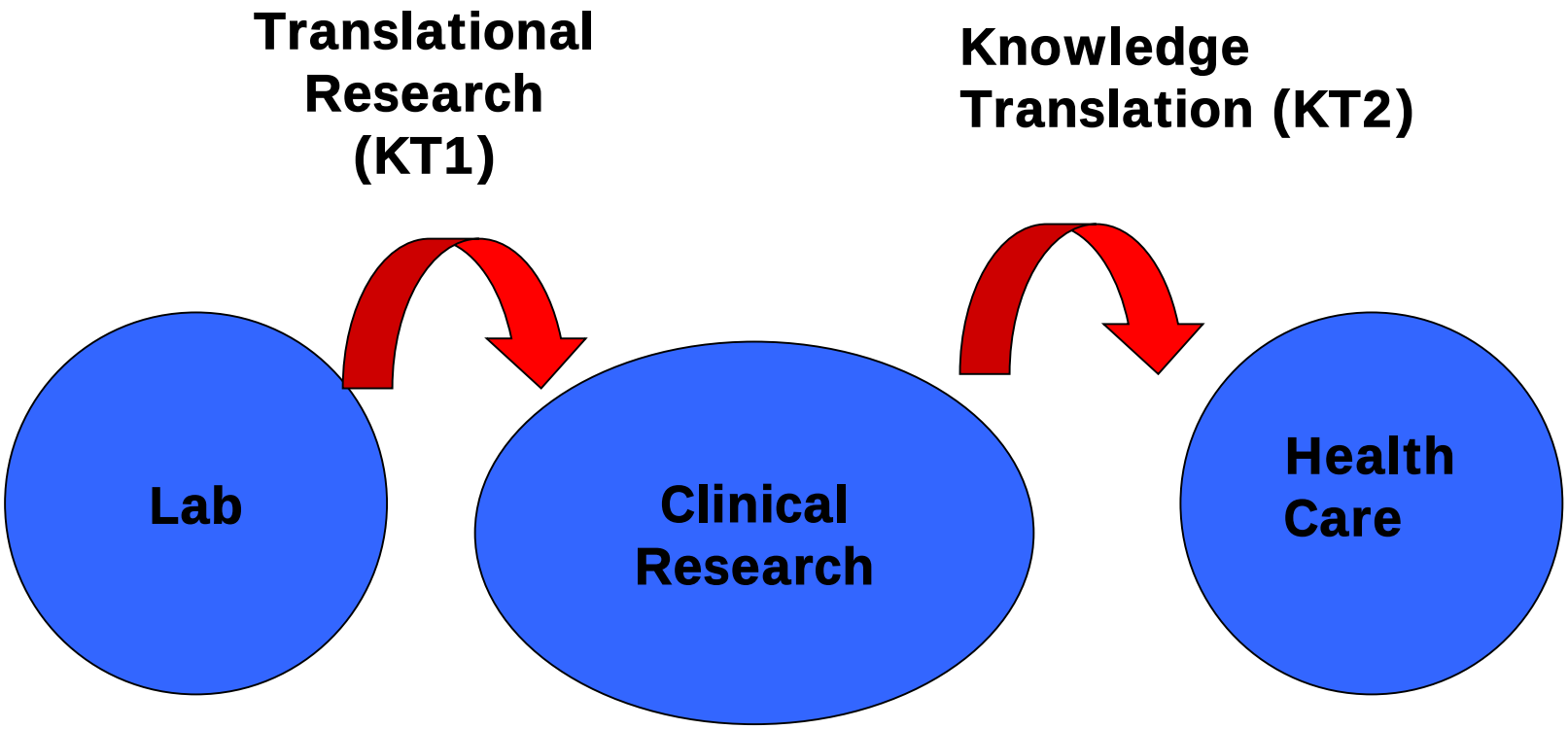
Grol R (2001). *Med Care*

Knowledge Translation

Definition

- **Knowledge translation is the exchange, synthesis and ethically-sound application of researcher findings within a complex system of relationships among researchers and knowledge users.** CIHR

What is KT?



CIHR; Hulley et al, 2007

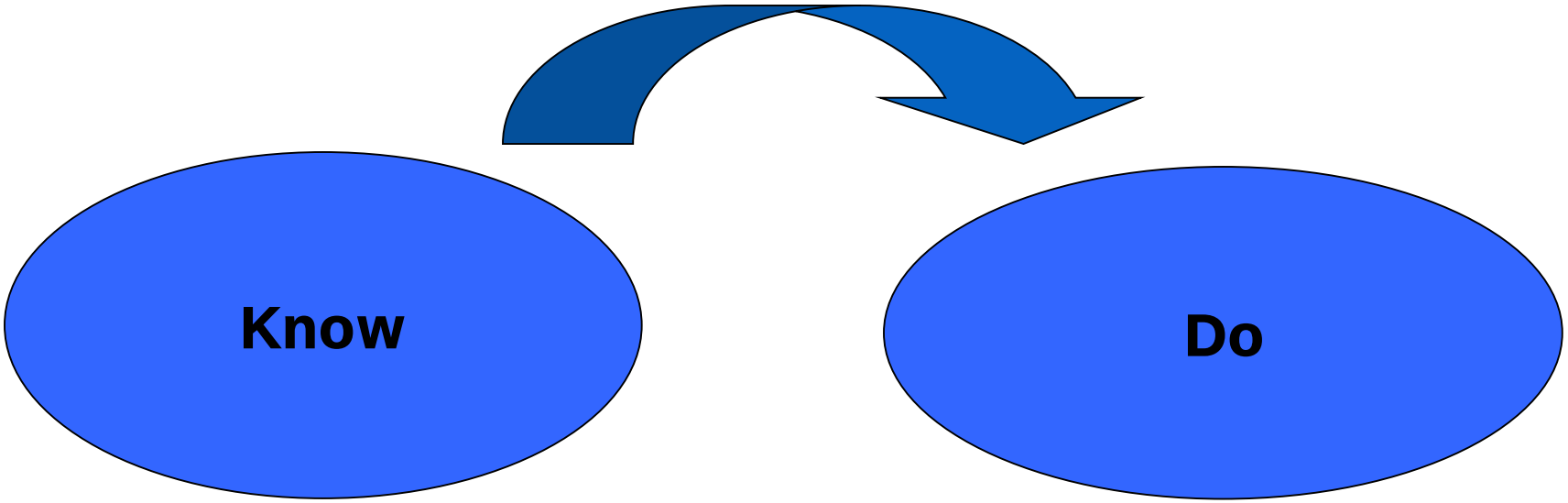
Different Terms for KT

Why does KT matter?

- It is estimated that approximately 85% of research resources are wasted
  - Low priority questions addressed
  - Important outcomes not assessed
  - For every 100 projects:
    - 50 not published
    - 25 not usable or replicable
    - 12.5 have serious design flaws

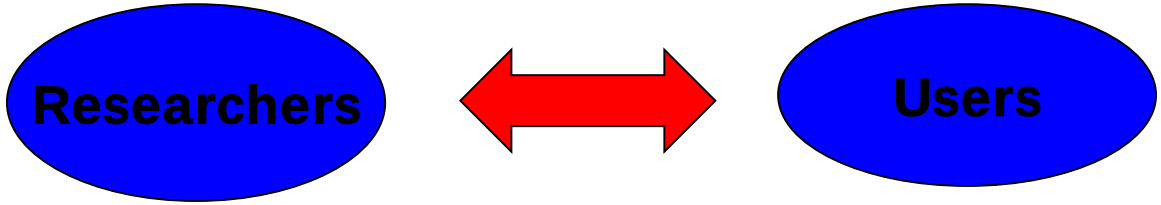
    = 87.5% wasted

KT “closing the know-do gap”



Knowledge Translation

- **Knowledge translation is about ensuring that:**
  - **‘users’ are aware of and use research evidence to inform their decision making**
  - **Research is informed by current available evidence and the experiences and information needs of ‘end users’**



Ranking of importance of factors influencing current practice

- Experience
- Continuing education (practical)
- Colleague Influence
- Continuing Education (theory)
- Professional Literature * secondary sources
- Entry Level Training

Most impt infuence

Least impt infuence

BARRIERS (1)

- **I had considerable freedom of clinical choice of therapy: my trouble was that I did not know which to use and when. I would gladly have sacrificed my freedom for a little knowledge.**
  - **Sir Archie Cochrane. *Effectiveness and Efficiency: Random Reflections on Health Services***
- **There seems to be little relation between the quality of the evidence and its diffusion into practice (Fitzgerald et al 2002)**
- **Information overload**
  - **Rich with diversity yet highly chaotic**
  - **Need tools/processes that can reliably and sensibly address the info**
    - **Agency for Healthcare Research & Quality http://www.ahrq.gov/research/physprac.htm**
- **xx**

BARRIERS (2)

- **Structural (e.g. financial disincentives)**
- **Organisational (e.g. inappropriate skill mix, lack of facilities or equipment)**
- **Peer group (e.g. local standards of care not in line with desired practice)**
- **Individual (e.g. knowledge, attitudes, skills)**
- **Professional - patient interaction (e.g. problems with information processing)**

Knowledge for knowledge translation

- Over 20,000 health journals published per year
- Individual studies rarely sufficient to change policy and practice
- Access to research evidence is poor
- Published research of variable quality and relevance
- Healthcare decision makers (consumers, health care professionals, policy makers) often poorly trained in critical appraisal skills
- Average time professionals have available to read = <1 hour/week

KT key concepts

- What should be transferred?
- To whom should research knowledge be transferred?
- By whom should research knowledge be transferred?
- How should research knowledge be transferred?
- With what effect should research knowledge be transferred?

Lavis JN, Robertson D, Woodside JN, Mcleod CB, Abelson J (2003) *Milbank Quarterly*

KT key concepts

- What should be transferred?
  - HTA evidence
- To whom should research knowledge be transferred?
  - Healthcare professionals (physicians, nurses, physios)
- By whom should research knowledge be transferred?
  - HTA (and partners)
- How should research knowledge be transferred?
  - $50 million dollar question
- With what effect should research knowledge be transferred?
  - *decisions about health and health care are informed by high-quality, relevant and up-to-date synthesized research evidence*

Lavis JN, Robertson D, Woodside JN, Mcleod CB, Abelson J (2003) *Milbank Quarterly*

How effective are various implementation strategies?

Intervention	Number of CRCTs	Range	Median effect size
Educational materials	4	+3.6%, +17.0%	+8.1%
Audit and feedback	5	+1.3%, +16.0%	+7.0%
Reminders	14	–1.0%, +34.0%	+14.1%

Single interventions

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.

What is effective?

- Little to no effect
  - Educational materials
  - Didactic sessions
- Sometimes effective
  - Audit & feedback
  - Local opinion leaders
  - Local consensus project
  - Patient mediated interventions
- Consistently effective
  - Reminders
  - Interactive education (with discussion of practice)
  - Social marketing

(Bero et al., 1998, Grimshaw et al., 2001)

Changing clinician behaviour

- Many effective strategies:
  - Audit and feedback
  - Educational outreach
  - Reminders
- HTA has limited (if any) capacity to deliver these at scale (local healthcare responsibility)
- What can/should HTA do to promote KT for clinicians?

With what effect should research knowledge be transferred?

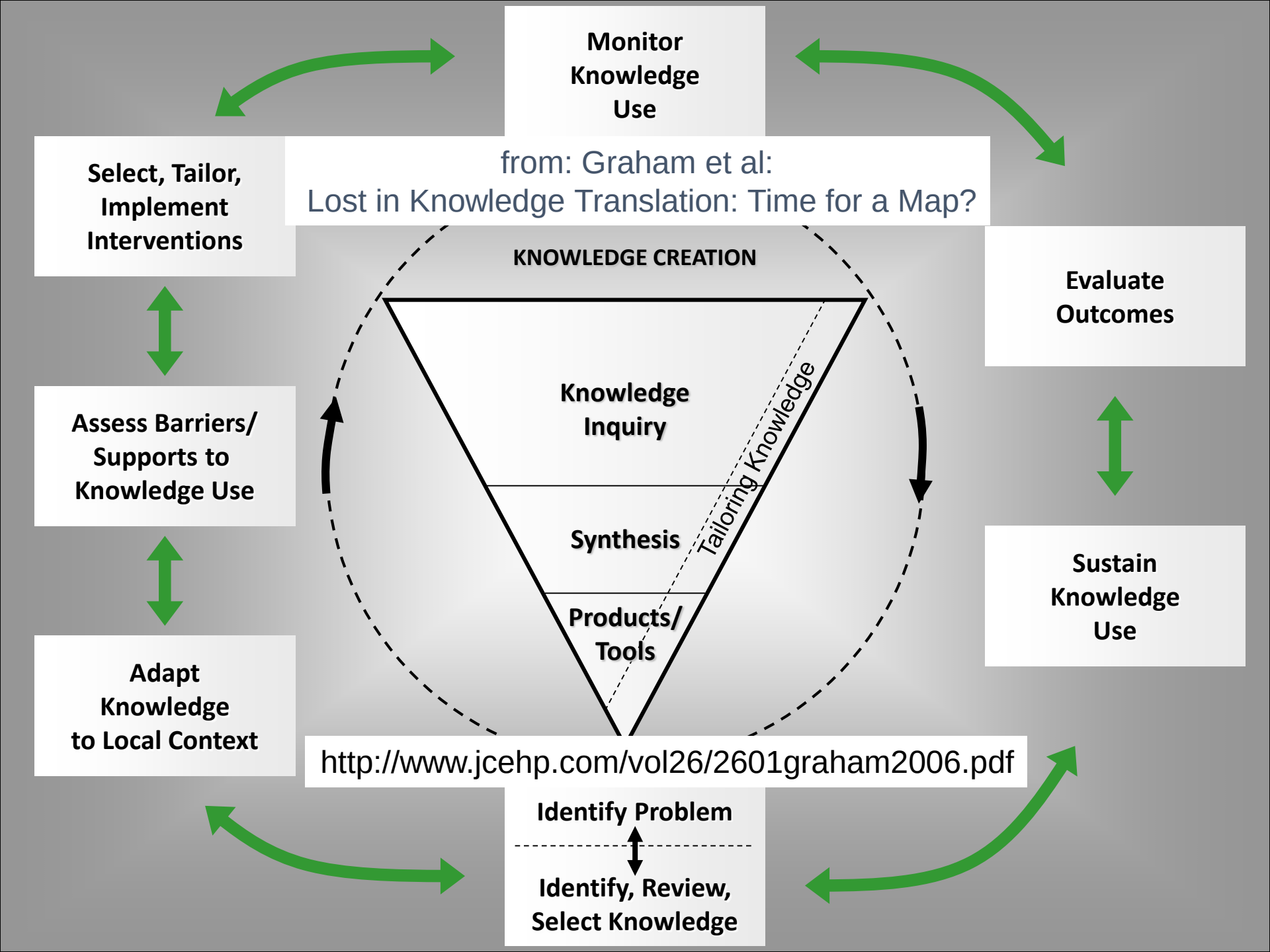
'decisions about health and health care are informed by high-qual ity, relevant and up-to-date synthesized research evidence'

- Decisions ≠ Behaviour
- Many non knowledge factors influence behaviours
- Common KT failures occur despite good or adequate clinicia n knowledge

4 scenarios for KT of cochrane evidence

- Within (or around) the clinical encounter
- Within educational activities
- Within improvement activities
- Evidence grazing

Adapted from Grimshaw and Eccles (2001)


Monitor Knowledge Use
from: Graham et al:
Lost in Knowledge Translation: Time for a Map?
Select, Tailor, Implement Interventions
Assess Barriers/ Supports to Knowledge Use
Adapt Knowledge to Local Context
KNOWLEDGE CREATION
Knowledge Inquiry
Synthesis
Products/ Tools
Tailoring Knowledge
Evaluate Outcomes
Sustain Knowledge Use
http://www.jcehp.com/vol26/2601graham2006.pdf
Identify Problem
Identify, Review, Select Knowledge

Within the clinical encounter

- Active – clinician seeks evidence
  - ‘Just in time’ evidence (classic evidence based m edicine)
  - Evidence needs – easy and rapid access, aggregated t o clinical problem, comprehensive, broad based (bey ond effectiveness)
  - Issues – clinicians only recognise and pursue a mino rity of their evidentiary needs, time pressures, limite d reach (within/across clinicians)

Within the clinical encounter

- Passive – evidence based systems and processes faci litate evidence based practice
  - Examples – CDSS, test ordering sets, clinical pathw ays, decision aids
  - Evidence needs – complete for specific problem
  - Issues – often locally developed or contextualised, n eed to be incorporated into workflows, interventions have assumptions, requirements and limitations, goo d local reach

Within educational activities

- Most professionals required to undertake profession al development to maintain their accreditation
  - Broad range of educational opportunities that eviden ce could be embedded in
  - Clinicians often fail to recognise knowledge needs w hen engaging in educational activities, educational s essions often developed locally and non standardised , explicit use of robust evidence is often poor, many educational providers (often sponsored by vested int erests), reach of local activities limited

Within improvement activities

Issue is how HTA could support improvement activities?

- Increasing interest in guideline implementability that could be applied within (subset of) systematic reviews
  - Behaviourally specific language
  - Identification of potential barriers of recommendations
  - Identification of resource implications of recommendations
  - Educational tools
  - Practice support tools

The Knowledge to Action Model

Knowledge creation, distillation and dissemination are not suff icient to ensure behaviour change…

We need to effectively implement!