Putting the Best Brain injury Care into Practice; A How to Guide

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17 years

- More than 17 years to translate evidence generated from discovery into health care practice (Balas& Boren, 2000)
- Of that, only 14 per cent of it is believed to enter day-to-day clinical practice (Westfall, Mold & Fagan, 2007).
  - Balas EA, Boren SA Managing clinical knowledge for health care improvement. In: BemmelJ, McCray AT, eds. *Yearbook of Medical Informatics.* Stuttgart, Germany: Schattauer Publishing; 2000:65-70.
  - Mold and Fagan Practice-based research Jama 2007 297:403–6

How to start a movement

- https://www.ted.com/talks/derek_sivers_how_to_start_a_movement#t-170389

Objectives

By the end of this presentation you should be able to:

- Discuss three barriers and/or facilitators to implementation of best practices in Brain injury care
- Pick strategies that could be used to enhance practice in Brain injury care

Clinical scenario

- Zach-12-year-old who is boy who sustained a concussion in a hockey game 2 weeks ago.
- no red flags for an intracranial lesion nor any indication for imaging.
- He had headaches some complaints of dizziness. He is somewhat fatigued and has difficulty concentrating.

Clinical scenario

- Dr. Jones recommended Zach have complete rest until his symptoms resolved
- Zach has been on complete rest for 14 days and is getting annoyed and irritable.
- The family is asking Dr. Jones how he should be managed from here.

Objective 1

- Discuss three barriers and/or facilitators to implementation of best practices in Brain injury care

Uptake of Evidence is influenced by :

- **Perceptions** of the research evidence or Innovation to be implemented
- Factors related to the p**otential adopters**
- Factors related to the **practice environment**

Ottawa Model of Research Use

How many articles would you have to read every day 365 days/yr to keep up?

A. 5

B. 10

C. 15

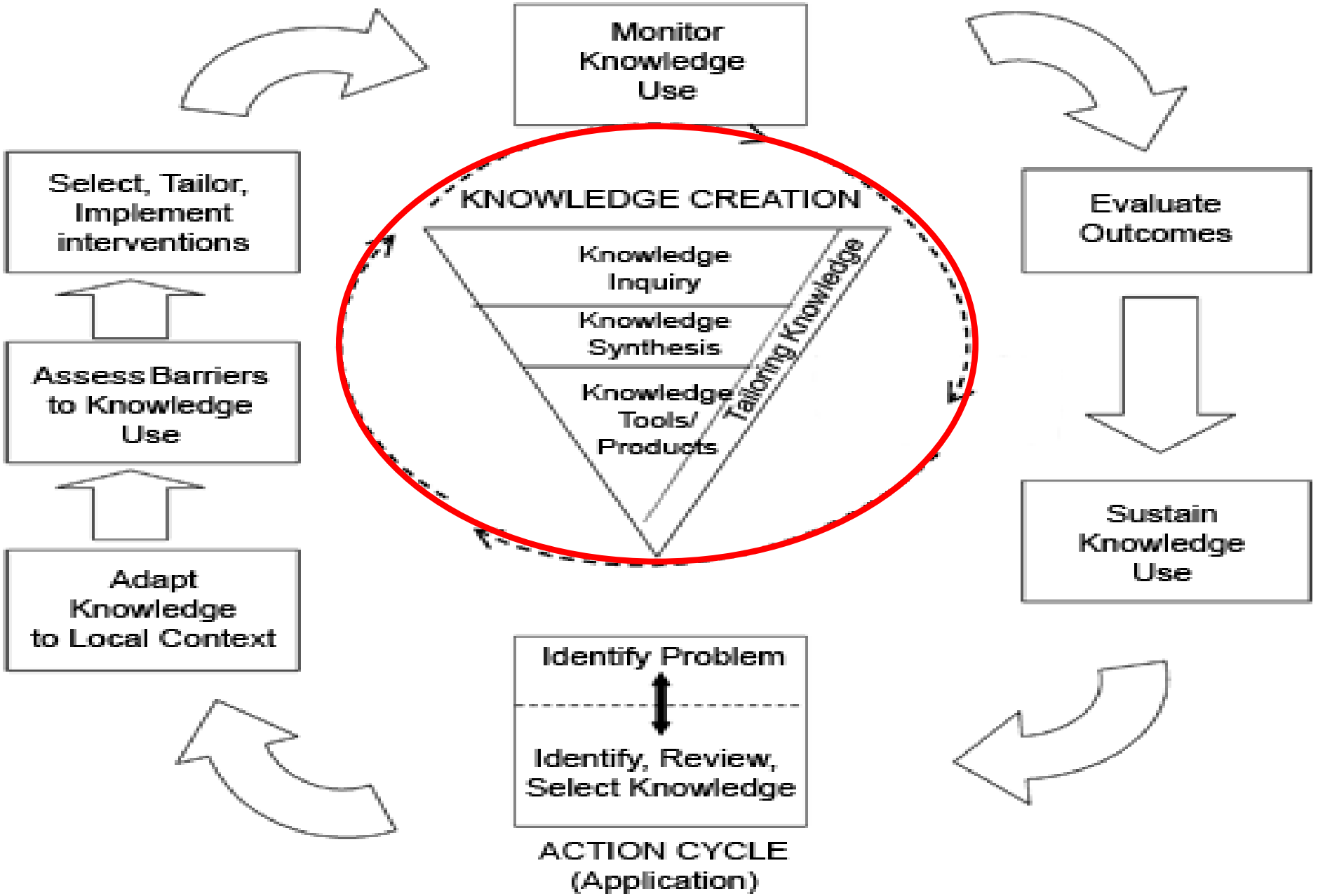
D. 20

E. 25

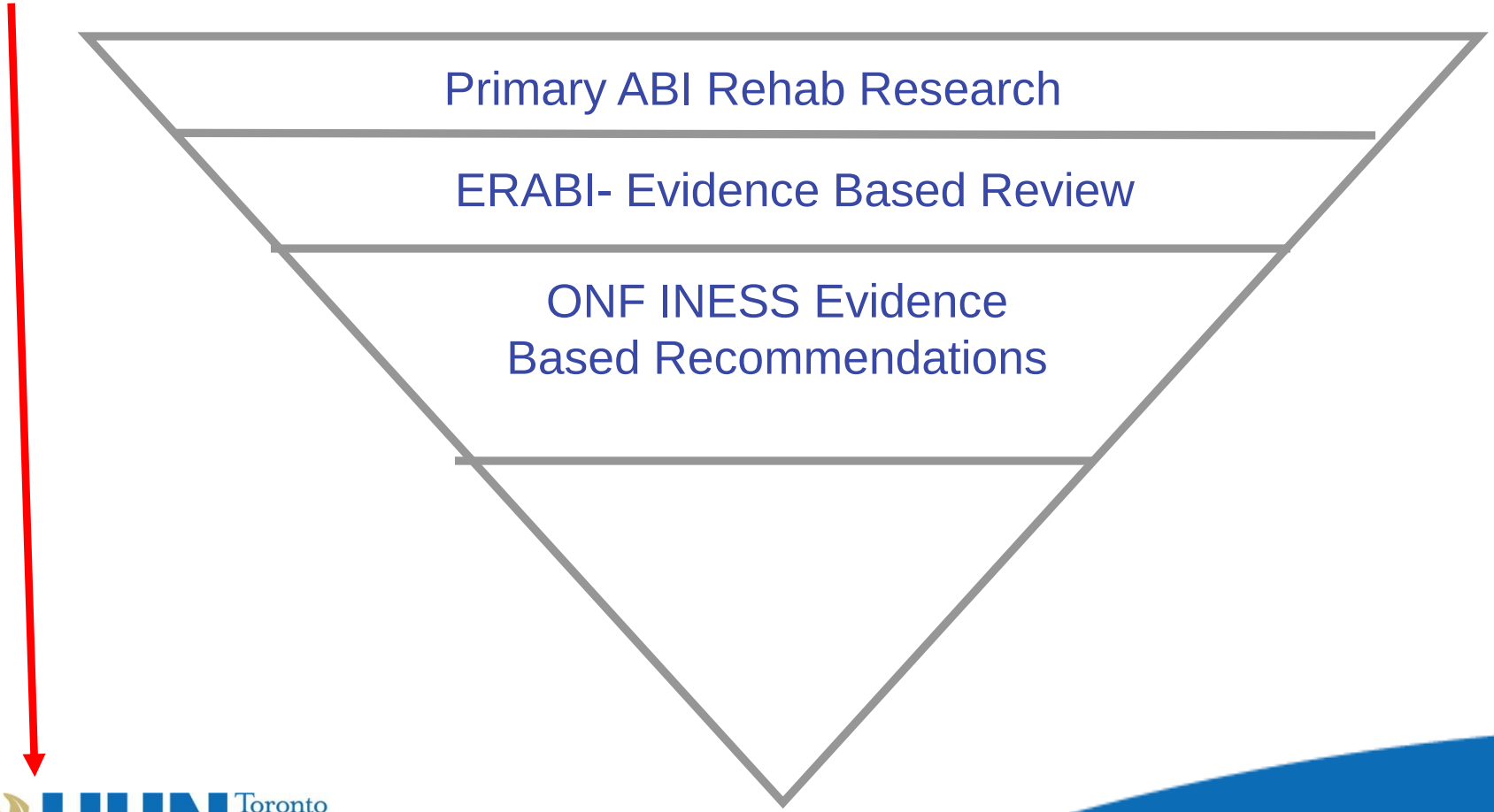
F. 30

Shaneyfelt JAMA 2001

KNOWLEDGE TO ACTION PROCESS



Tailoring ABI Knowledge



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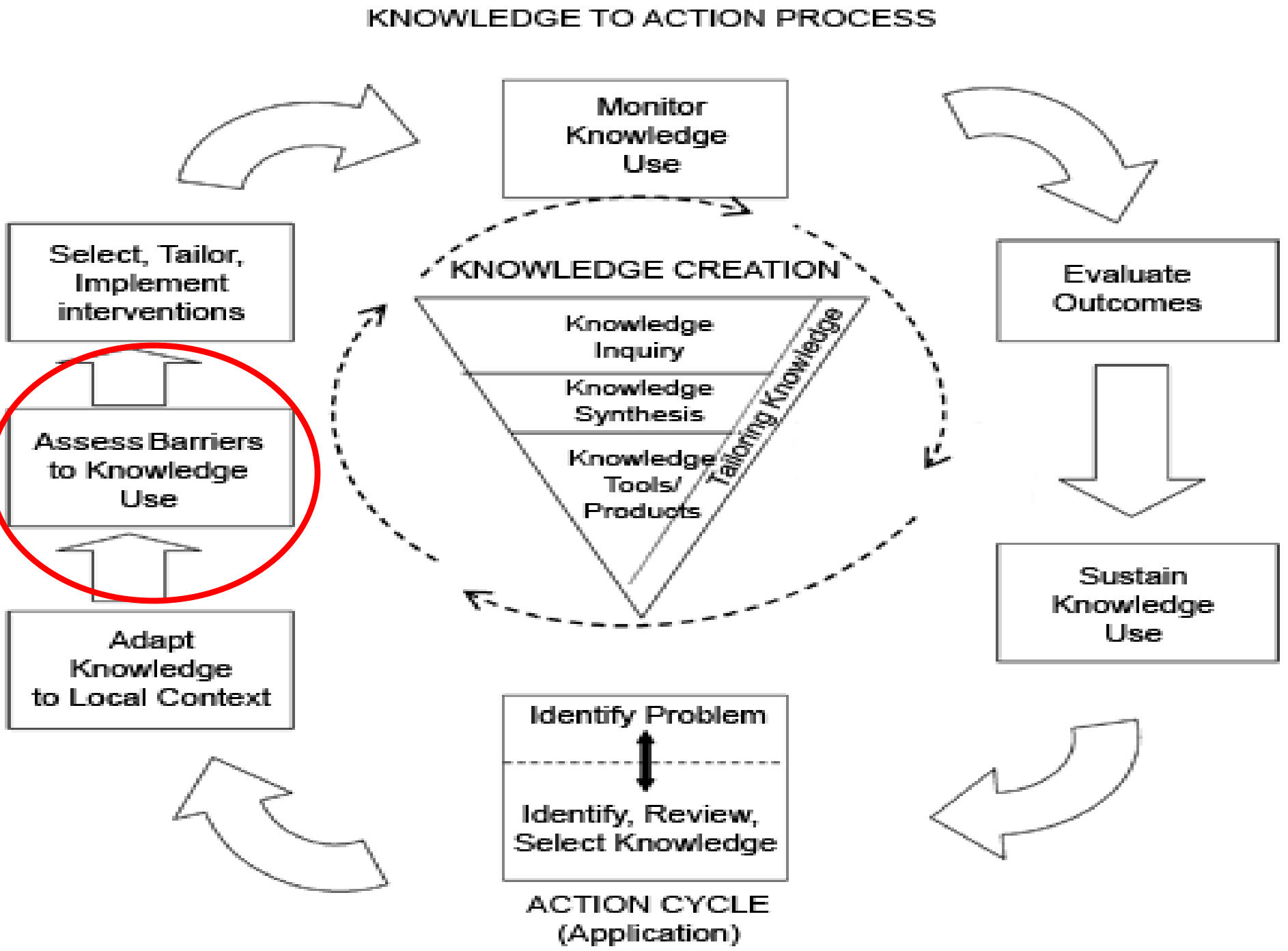
KNOWLEDGE TO ACTION PROCESS
Monitor Knowledge Use
Select, Tailor, Implement interventions
KNOWLEDGE CREATION
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Knowledge Synthesis
Knowledge Tools/ Products
Tailoring Knowledge
Evaluate Outcomes
Assess Barriers to Knowledge Use
Sustain Knowledge Use
Adapt Knowledge to Local Context
Identify Problem
Identify, Review, Select Knowledge
ACTION CYCLE
(Application)

Uptake of Evidence is influenced by:

- **Perceptions** of the research evidence or Innovation to be implemented
- Factors related to the p**otential adopters**
- Factors related to the **practice environment**

Ottawa Model of Research Use

Barriers related to Potential Adopters

- Knowledge
- Skills/habits
- Social/professional role and identity
- Beliefs about capabilities
- Beliefs about consequences
- Motivation and goals
- Memory, attention and decision processes
- Behavioural regulation
- Emotion

Michie (2005) *Quality and Safety in Health Care*

Uptake of Evidence is influenced by:

- **Perceptions** of the research evidence or Innovation to be implemented
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- Factors related to the **practice environment**

Ottawa Model of Research Use

Barriers related to the Practice Environment

- Social influences

  Decision-making

  Policies, rules, laws

  Availability of technology/supplies

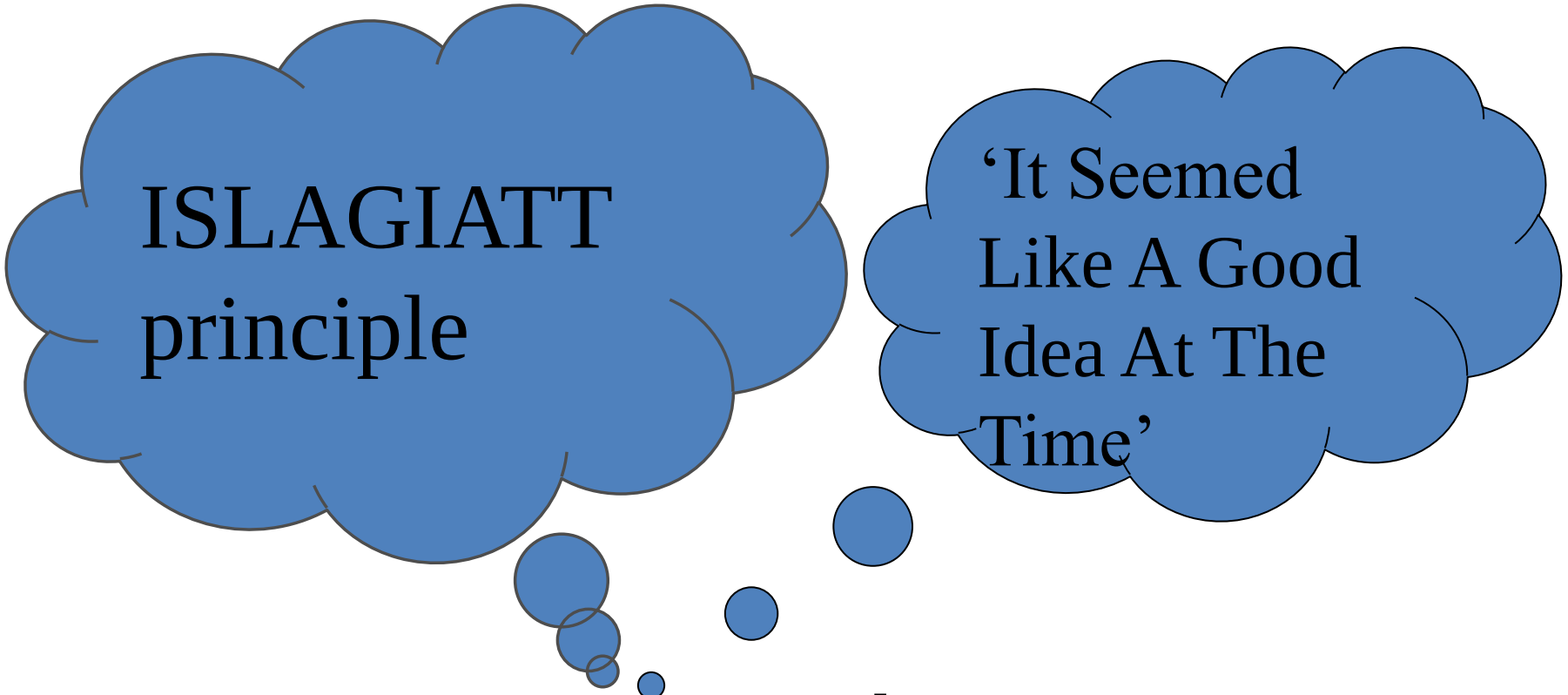
  Physical layout

  Workload/time pressure
- Resources, remuneration, funding systems
- Medical/Legal Issues

Objective 2

- Pick strategies that could be used to enhance practice in Brain injury care

Selecting, tailoring and implementing KT interventions



Martin P Eccles

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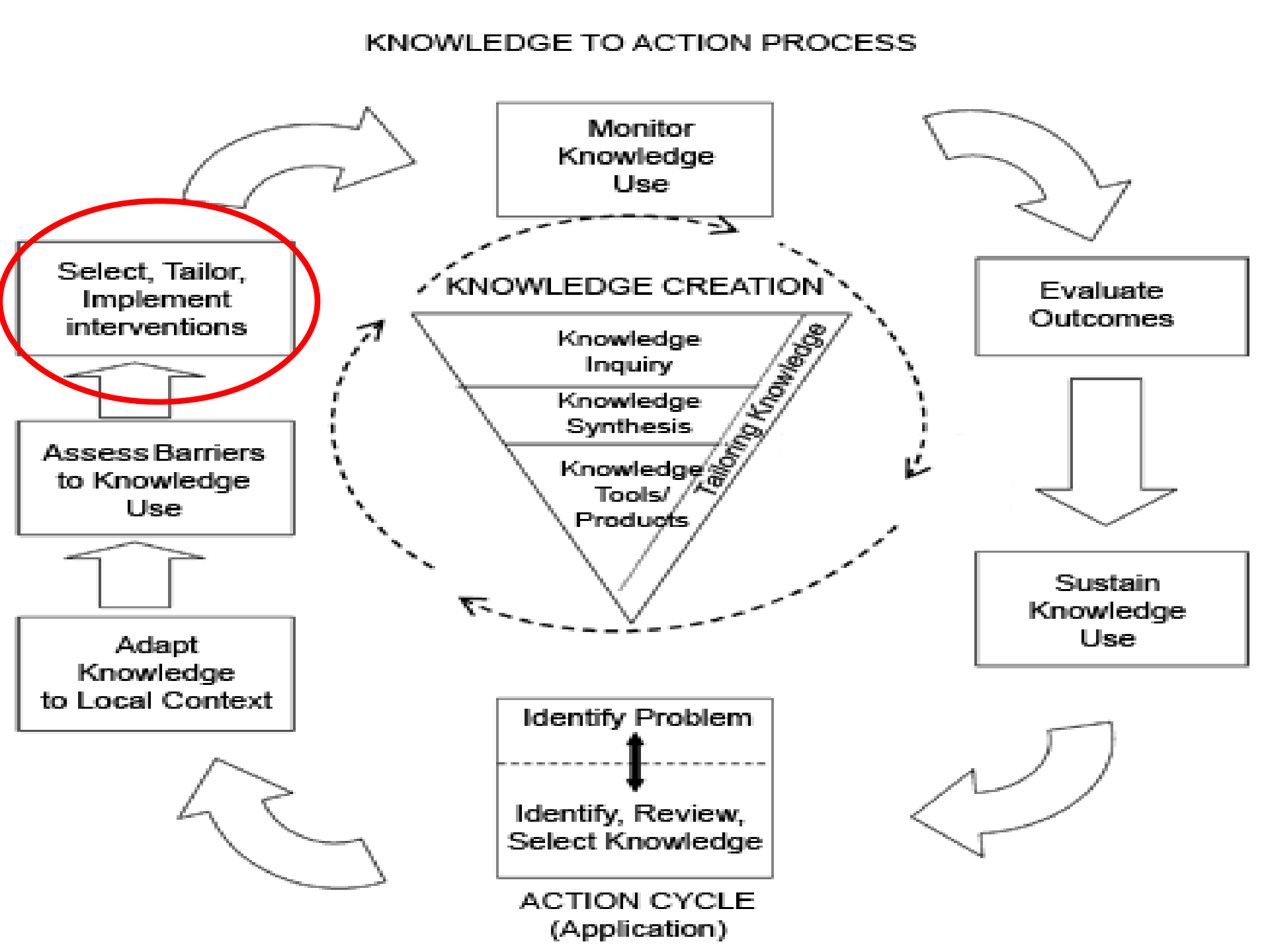
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Behavioural perspective

- Knowledge translation depends on behaviour
  - Citizens, patients, health professionals, managers, policy makers
- To improve care, we need to change behaviour
- To change behaviour, it helps to understand determinants of current behaviour and how behaviour changes

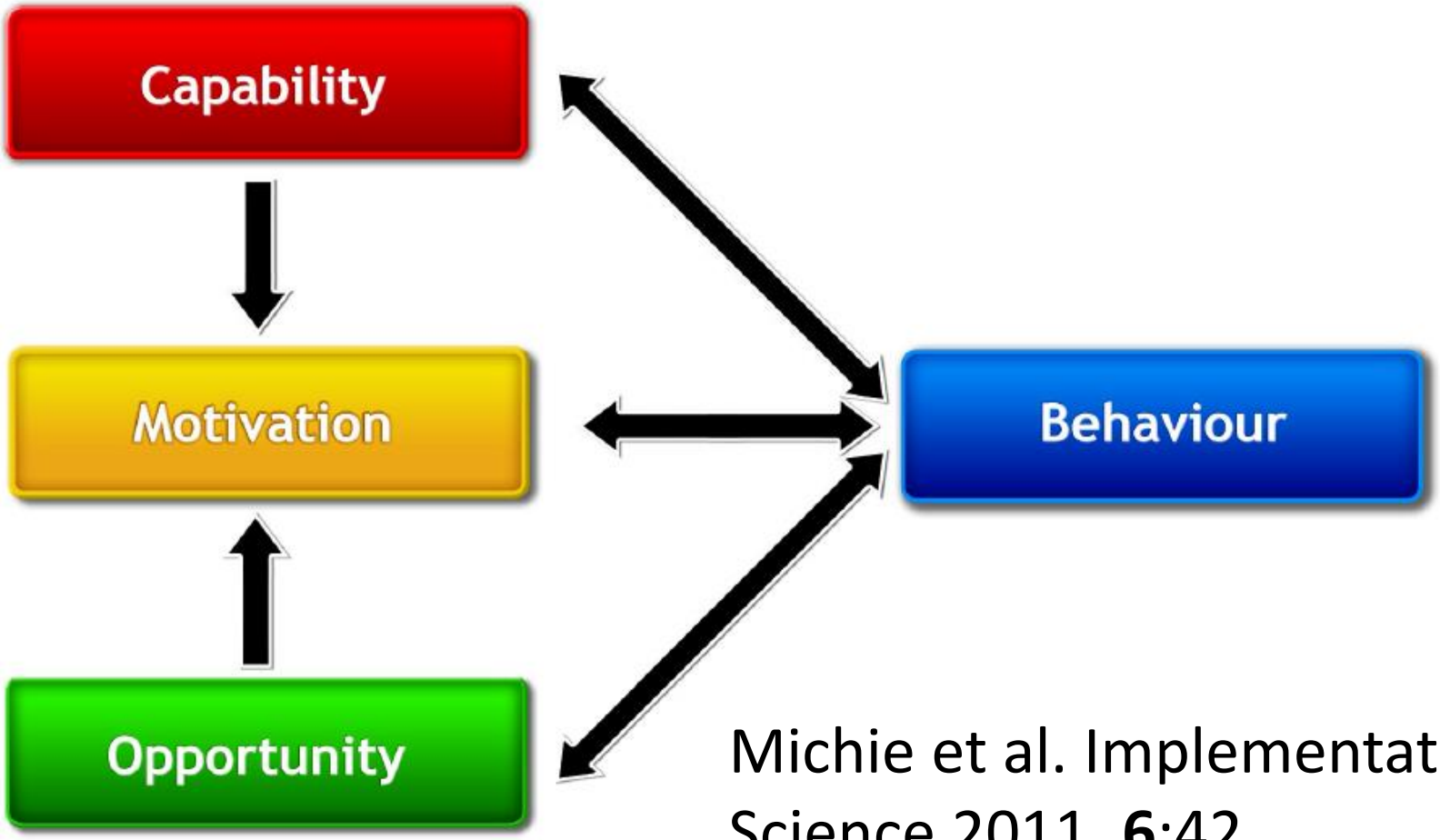
Identifying behaviors of interest

- What is the behavior (or series of linked behaviors) that you are trying to change?
- Who performs the behavior(s)? (potential adopter)
- When and where does the potential adopter perform the behavior (Practice environment)?

Strategy

- Lets understand and Empathize with the target users and the environment they work in
- Select strategies based on our understanding of their situation and behaviours

Behavioural model- Michie et al 2011



Michie et al. Implementation Science 2011, **6**:42

COM-B model (Michie)

- **Capability** is defined as the individual's *psychological and physical* capacity to engage in the activity concerned i.e necessary knowledge and skills and inclination.
- **Opportunity** is defined as all the factors that lie outside the individual that make the behaviour possible. It includes *physical and social opportunities*
- **Motivation**- brain processes that energize and direct behaviour
  - Reflective- Thoughtful
  - Automatic- Emotions/reflex responses

If Problem is Capability?

- Psychological

Education

Enablement

- Physical

Training

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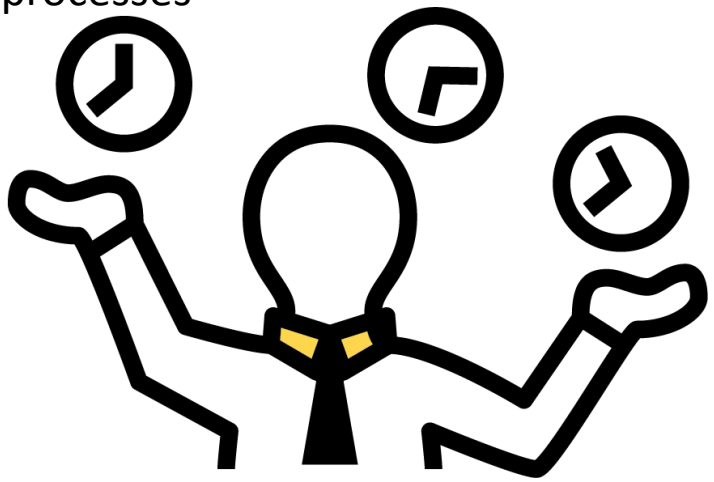
If the challenge is Physical or Social Opportunity to follow evidence

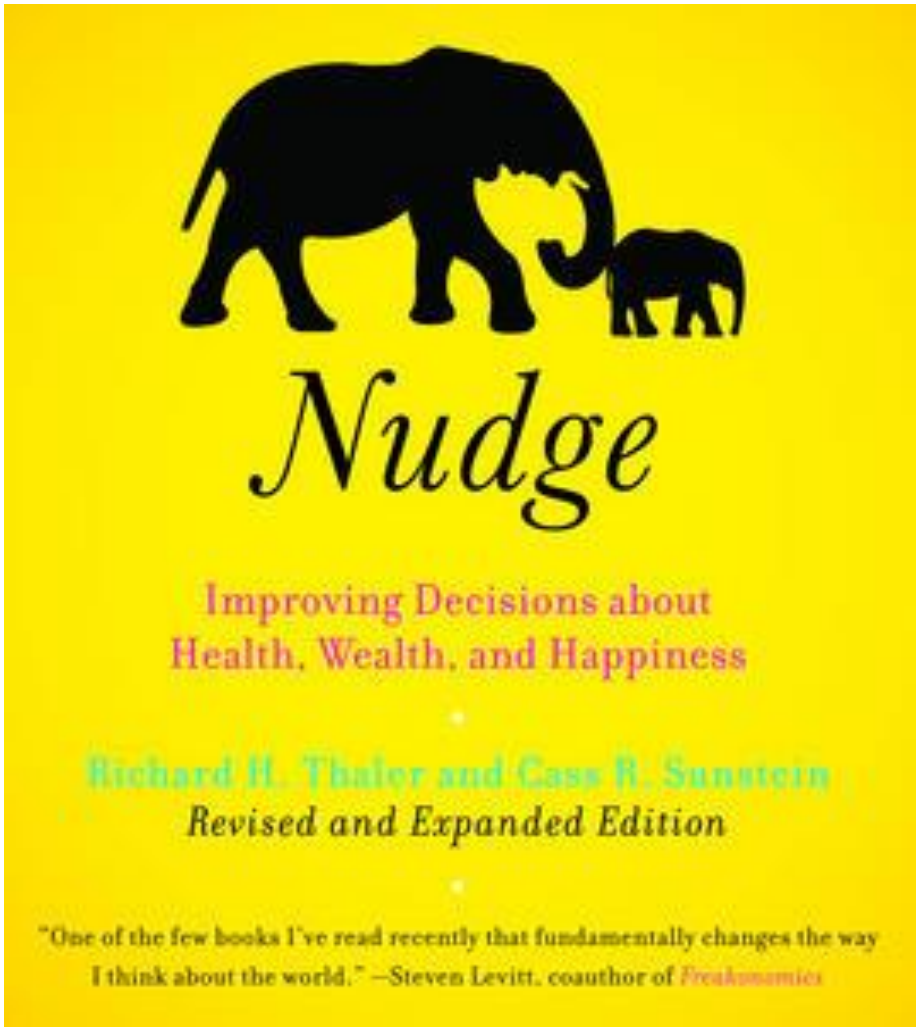
Equipment/ Environmental restructuring

Enablement-Reduce wasted Time and processes



Organizational restructuring

Environmental Restructuring



- Complex world- brain uses strategy
- Cant use executive systems all day
- Changing Choice architecture may increase use of ideal practice
- Benevolent Paternalism

A Nudge in the right direction

If the problem is Reflective Motivation

Education

Incentives

Persuasion

Coercion

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If the problem is Automatic Motivation

Persuasion

Incentives

Coercion

Modelling

Enablement

Environmental Restructuring

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Fake Fly!

Results of Cluster Randomized Controlled Trials

	Median effect
Patient mediated interventions (n=3)	21.0%
Reminders (n=14)	14.0%
Dissemination educational material (n=4)	8.1%
Audit and feedback (n=5)	7.0%
Educational workshop (n=1)	1.0%
Multi-faceted interventions including Educational outreach (n=13)	6.0%

Cochrane EPOC group

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Selecting, tailoring and implementing KT interventions

Intervention	# of trials	Median absolute effect	Interquartile range
Audit and feedback	140	+4.3%	+0.5 to 16%
Academic detailing	69	+5% (prescribing)	3% - 7%
Educational meetings	81	+6%	+3 – 15%
Pay for performance	9	+7%	N/A

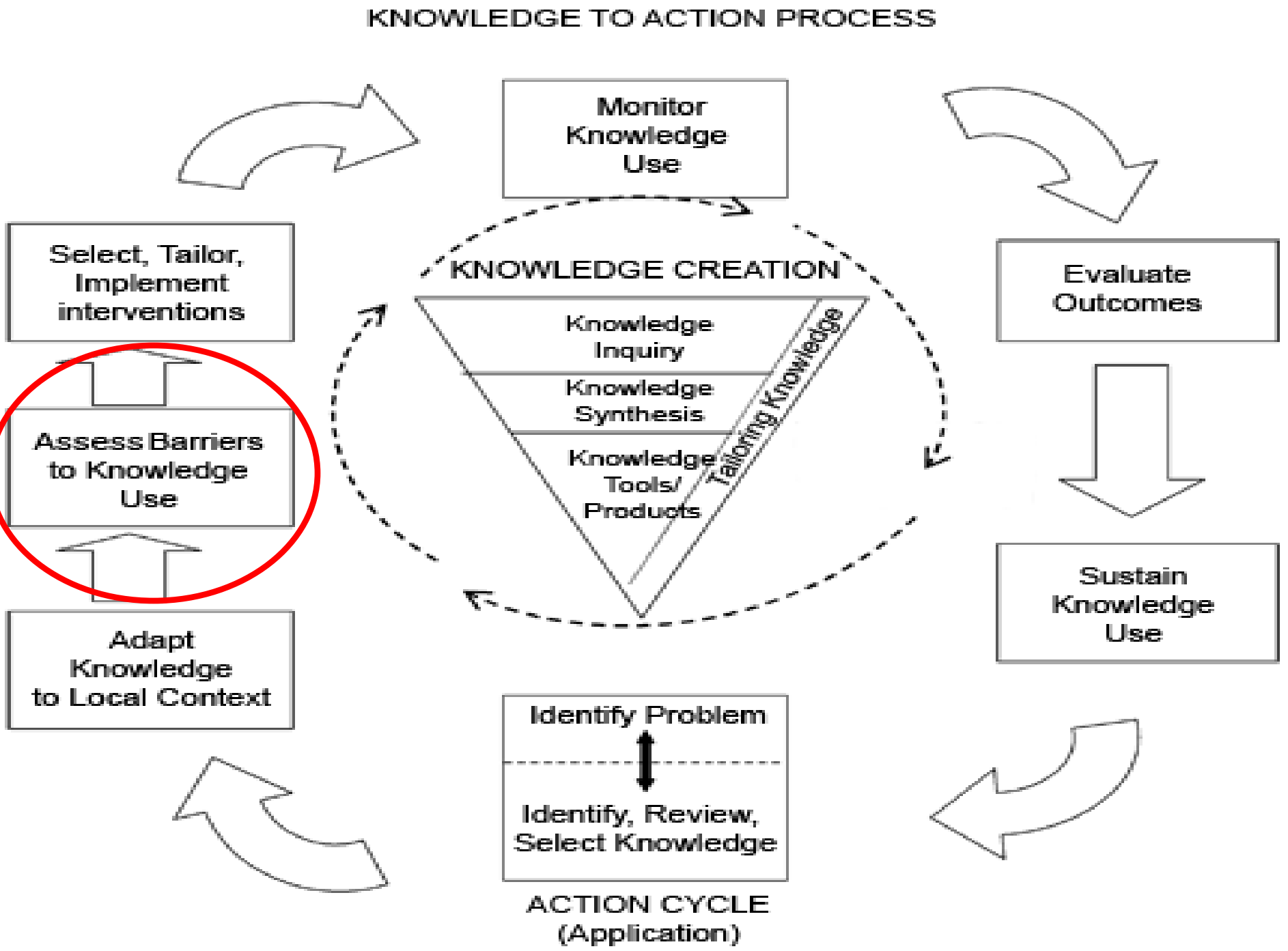
Back to our story…

- Zach and Dr. Jones

Best Practice Behaviour of Interest

- A patient with a first-time concussion should be advised through early education, support and/ or assurance that a full recovery of their symptoms, including cognitive functioning, is typically seen within as early as a few days up to 1 to 3 months post injury.

- After a brief period of rest during the acute phase (24–48 hours) after injury, patients can be encouraged to become gradually and progressively more active as tolerated (i.e., activity level should not bring on or worsen their symptoms).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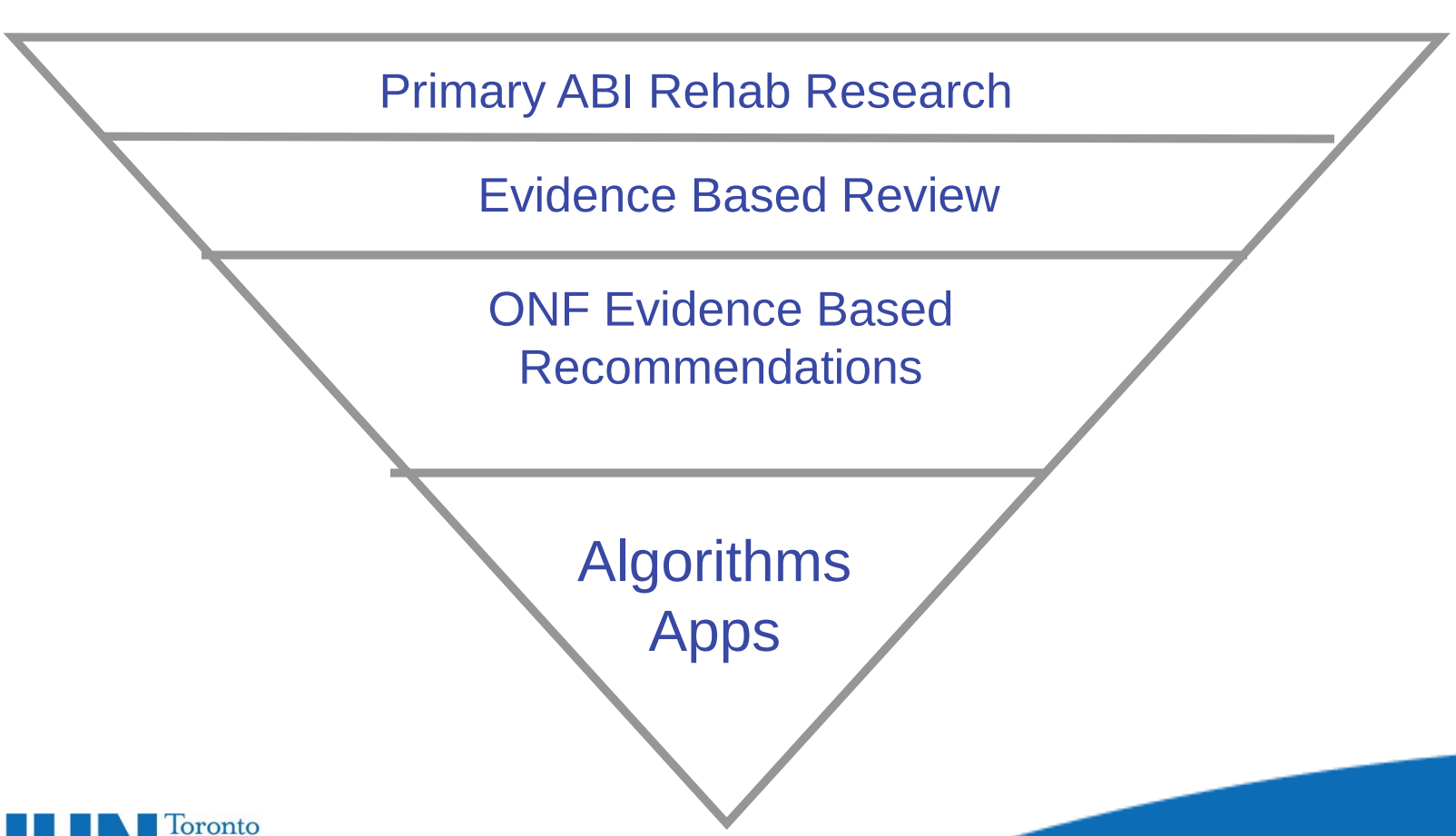
Barriers related to the evidence

- Dr. Jones only received of one hour of training and head injury and concussion in his whole medical training and has attended one sports course
- he does not have any educational materials in his office
- does not have a great deal of experience prescribing exercise.

Tailoring ABI Knowledge



Strategies to overcome this issue

- Tailor the evidence to the user (doctor and the patient)
- the concussionsOntario website
- future iteration is smartphone friendly
- handouts for clinicians and patients
- new apps called concussionEd (Parachute)

If Problem is Capability?

- Psychological

Education

Enablement

- Physical

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Dr. Jones' Psychological Capability

Potential strategies

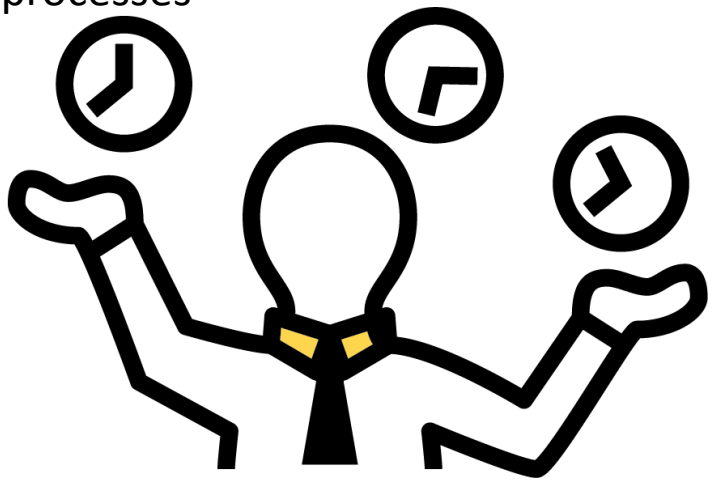
- Marketing campaign for the websites
- bring in an opinion leader like Dr. Charles Tator for a session with a group of family doctors provide guidance address questions there is

NB no problem with the physical capability to deliver.

If the challenge is Physical or Social Opportunity to follow evidence

Equipment/ Environmental restructuring

Enablement-Reduce wasted Time and processes



Organizational restructuring

Opportunity

- *Time management*-scheduled for 10 minutes and many patients are waiting. Zach's mother is very demanding of time to answer many questions.
- Save time - Zach enter his symptoms before coming into appointment on his iphone
- *Environmental restructuring*- Download an educational video about concussion and watch prior to meeting Dr. Jones
- *Organizational Restructuring*- Train Nurse practitioner in concussion management and Education delivered by NP
- *Restrictions not as easy to use hear.*

If the problem is Reflective Motivation

Education

Incentives

Persuasion

Coercion

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Reflective Motivation

Dr. Jones wants to provide best care to his patients and wants to know the best evidence

Strategy

- Education for Dr. Jones about detrimental effects of prolonged rest
- Persuading-Dr. Jones may need to hear from patients who have not done well or opinion leader
- Incentives- extra fees for providing counselling
  - Audt and Feedback- Compare him to other doctors
- Coercion- refuse to pay him unless he provides exercise guidelines

If the problem is Automatic Motivation

Persuasion

Incentives

Coercion

Modelling

Enablement

Environmental Restructuring

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Problem is Automatic motivation

- Dr. Jones is fearful of second impact syndrome,
- Dr. Jones is concerned about the appearance to his patient that he is not knowledgeable about the condition prescribing therefore suggesting no activity seems safer to him.

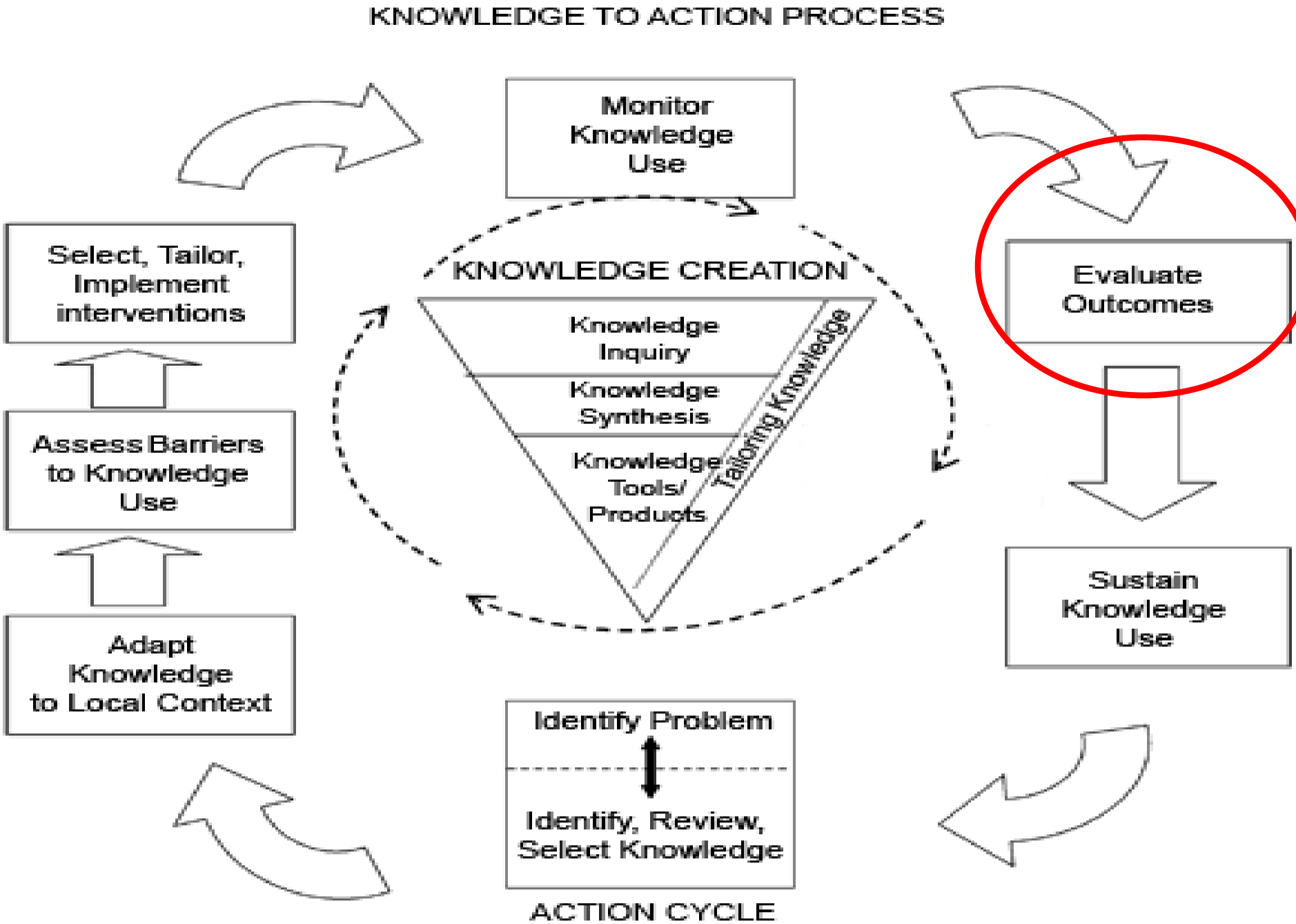
Strategy

- Persuading Dr. jones that risk of second impact is low
- Incentives- extra fees for providing counselling

Problem is Automatic motivation

- Enablement-
  - Develop educational video that targets most common questions
  - Provide patients in the waiting room with key questions to ask and an exercise prescription to be filled out by the doctor (patient mediated intervention)

- Modeling- Have training incorporate role playing or observing how another expert does it and get him to practice the patient education
- Environmental modification- Nudge- modify his EPR to generate a reminder when he types in concussion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Evaluation

Practice Impact/ processes of care (clinician behaviour)

Impact on Patients

Impact on Healthcare decision makers

Impact on Health Care costs or utilization

Conclusions

- Barriers to implementation- usually related to the nature of the evidence, adopter and practice environment
- Define the best practice and the associated behaviour change ie who performs it, where do they provide it and what practice change is required)
- Understanding the capability , the motivation and the physical and social opportunities of the target user will be helpful in planning implementation

Questions and Discussion

People living with the effects of brain injury deserve the best possible evidence based care. Let's work together to overcome the barriers and improve care!

twitter @DocMarkBayley

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