

Why am I an evidence-based dentistry champion?

Jan E. Clarkson

Director

Dental Health Services Research Unit

University of Dundee

j.e.clarkson@cpse.dundee.ac.uk

What is Evidence Based Dentistry?

ADA Definition:

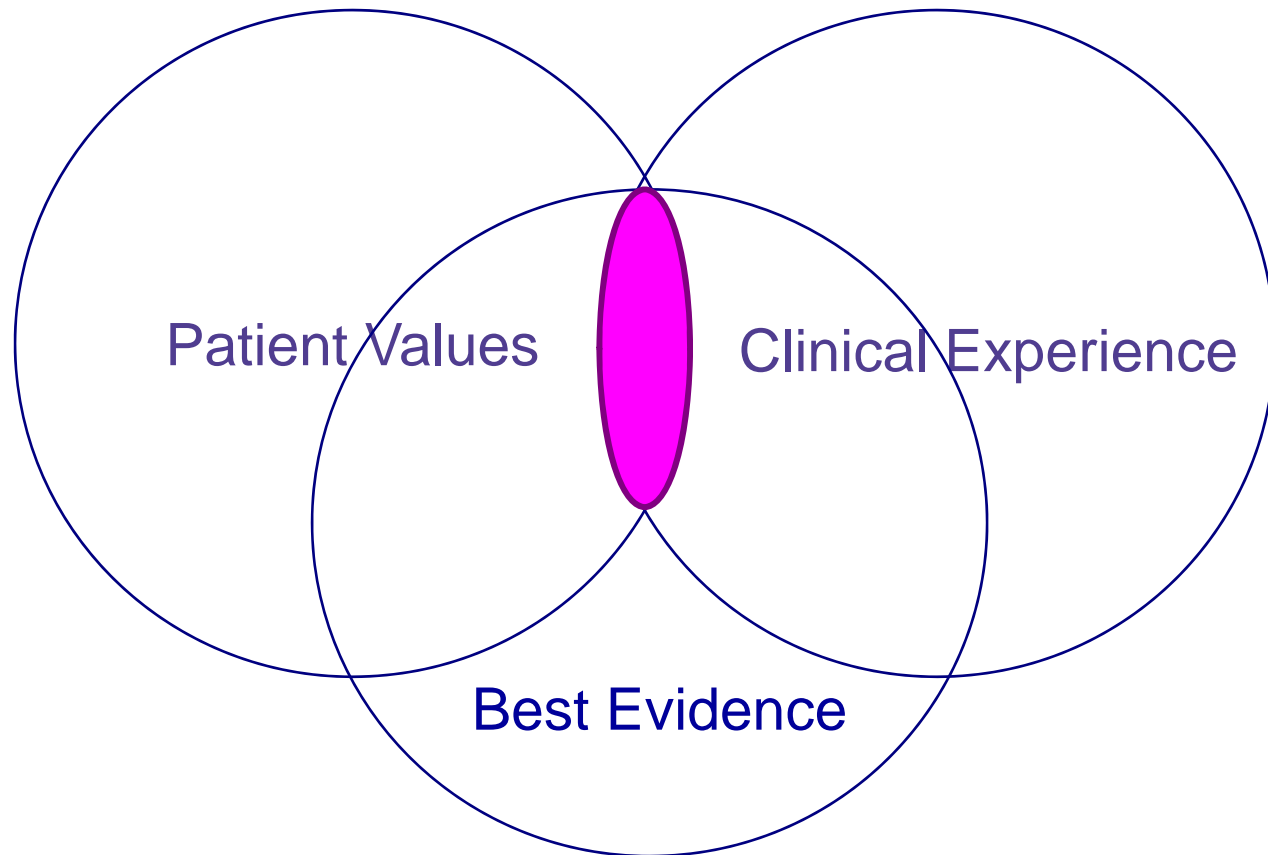
EBD is an approach to oral health care that requires the judicious integration of:

- systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and medical condition and history

with

- the dentist's clinical expertise, and
- the patient's treatment needs and preferences

What is Evidence Based Dentistry?



Sackett et al Evidence-Based Medicine, 2000

What is an evidence-based dentistry champion?

Someone who commits to:

- Applying evidence-based principles and tools to improve the quality, effectiveness, and appropriateness of dental care;
- sharing knowledge and skills to promote the evidence-based decision-making of colleagues, patients and policy makers.

What does being evidence-based dentistry champion require?

Furthering an understanding of the processes and the challenges of:

- Evidence development
- Evidence synthesis and summary
- The creation of best practice guidelines
- Evidence implementation

Evidence development

Before evidence-based decision-making can take place, there must be a body of evidence to access.

- Impetus for body of evidence may be professional uncertainty or mishap, patient pressure, academic interest, political events and funding imperatives

(For example: six month recall interval)

But

- Research results are scattered over a vast number of publications and EB d-m needs to be informed by all the evidence, not just the most easily accessed.

Evidence synthesis and summary

- Reviews may use qualitative or quantitative methods or be produced from a consensus conference or expert panel
- Systematic reviews:
 - are highest level of evidence
 - have a predefined, explicit methodology to bring together all known references to trials on a particular issue and minimize bias
 - provide a comprehensive summary of the available evidence to help identify successful, variably successful, and unsuccessful health care technologies and interventions
- Can be found in the *Cochrane Database of Systematic Reviews* in *The Cochrane Library*.

Evidence synthesis and summary

- The Cochrane Oral Health Review Group (OHG)
 - Set up in 1996
 - 917 members from 40 different countries around the world
 - Ranked 5th out of the 24 UK NHS funded groups.
- Produces systematic reviews of all randomised controlled trials in oral health
 - Has published 80 systematic reviews and 71 protocols with a further 14 reviews and 29 protocols in preparation
- OHG also helps to identify current gaps in evidence relating to a dental treatment protocols

The top 10 OHG reviews

<i>Review Title</i>	<i>Authors</i>	<i>WR¹</i>
1. Interventions for preventing oral mucositis for patients with cancer receiving treatment	HV Worthington, JE Clarkson, OB Eden	47
2. Interventions for treating oral mucositis for patients with cancer receiving treatment	JE Clarkson, HV Worthington, OB Eden	212
3. Home-based chemically induced whitening of teeth in adults	H Hasson, AI Ismail, G Neiva	249
4. Manual versus powered toothbrushing for oral health	PG Robinson, SA Deacon, C Deery, M Heanue, AD Walmsley, HV Worthington, WC Shaw	273
5. Pit and fissure sealants for preventing dental decay in the permanent teeth of children and adolescents	A Ahovuo-Saloranta, A Hiiri, A Nordblad, H Worthington, M Makela	431
6. Interventions for replacing missing teeth: different times for loading dental implants	M Esposito, P Coulthard, MG Grusovin, M Willings, H Worthington	490
7. Interventions for replacing missing teeth: bone augmentation techniques for dental implant treatment	M Esposito, MG Grusovin, S Kwan, HV Worthington, P Coulthard	497
8. Interventions for replacing missing teeth: different types of dental implants	M Esposito, L Murray-Curtis, P Coulthard, HV Worthington	557
9. Interventions for replacing missing teeth: dental implants in fresh extraction sockets	M Esposito, A Koukoulopoulou, P Coulthard, HV Worthington	560
10. Fluoride toothpastes for preventing dental caries in children and adolescents	VCC Marinho, JPT Higgins, S Logan, A Sheiham	598

Creating best practice guidelines

- Systematic reviews create an evidence base by synthesizing and summarizing evidence

But

- It is the role of clinical guidelines to identify and recommend best practice from the evidence base
- This can be problematic when limitations in the available evidence clash with political imperatives to produce guidance

Creating best practice guidance

- **Scottish Dental Clinical Effectiveness Programme (SDCEP)** is a Scottish government initiative
- Provides accessible, evidence-based guidance on priority topics for Scottish dentistry
- The process of SDCEP guidance development involves:
 - *Establishing a guidance development group*
 - *Evidence and information retrieval and appraisal*
 - *Developing a first draft of the guidance*
 - *Consultation and Revision based on feedback*
 - *Peer Review as a means of quality assurance*
 - *Final amendments*
 - *Dissemination (publication in paper form and via the internet)*

Evidence Implementation

- Best practice guidance are a necessary resource to support clinical decisions about patient care

But

- An EBD champion also needs to address the implementation of evidence
- Requires furthering an understanding of:
 - the practical realities of healthcare and clinical settings
 - the challenges of change and adaptation to change
 - the role of the dental team, patients, policy makers and organisations
- Two parts: Dissemination and knowledge translation

Evidence Implementation

Dissemination:

- Increase accessibility to the evidence and best practice recommendations
- Investigate different methods and professional, primary care, public and scientific routes of delivering knowledge (*for example: CPD e-learning*)

Evidence Implementation

Knowledge translation research needs:

- An evidence-base
'Evidence based medicine should be complemented by evidence based implementation' Grol (1997) BMJ
- To occur at and be coordinated across multiple levels:
the patient, clinician, team, organisation, and policy
- To investigate ways to increase the impact of results on current dental practice (*ERUPT ; Decontamination*)
- To ensure its principles and tools inform and are taught in dental training

Evidence Implementation

Knowledge translation:

- Many possible barriers to knowledge translation into clinical practice
- Limited understanding how to enable clinicians to overcome these barriers

But

- Having the knowledge itself rarely influences behaviour
- Many different strategies tried with variable success

Evidence Implementation

Knowledge translation:

- Reviews suggest main problem may be not understanding the mechanism by which knowledge translation interventions achieve their effect
- Since translation often requires behaviour change, we have begun using explanatory frameworks explicitly concerned with behaviour change
- Psychological models explain behaviour in terms of predictive beliefs which can be influenced, as well as include measuring methodology

Knowledge translation

What have we learnt so far?

- Dentists are well-informed about current evidence, have a positive attitude about its implementation, have good intentions, are confident – But their clinical decision-making is still often not evidence-based.

Why?

- Our results suggests dentists need more than 'what' - they need to plan 'when' and 'how'
- Specifying predictive and outcome variables from psychological models increases our understanding of research results, better informs intervention design and so increases the likelihood of intervention success

Knowledge translation

- However, a multidisciplinary approach is really needed to best synthesize the results of translational research programmes and the practical realities of healthcare and clinical settings
- TRiADS (Translation Research in a Dental Setting) is a collaboration of academics, doctors and dentists from primary and secondary care, psychologists, economists, statisticians, triallists and policy makers.
 - Focus is on developing a scientific rationale for choosing and designing knowledge implementation interventions

Why am I an evidence-based dentistry champion?

- Empathy: Having an understanding of the temptation to persist in applying hard-won but out-of-date knowledge, particularly when faced with contradictory research results, uncertainty and brutal time constraints, patient, professional, and business pressures.

But

- Clinicians who do not practice EBD *will* inflict avoidable atrocities, which has implications beyond the individual patient or dentist immediately involved.
- Being an evidence-based dentistry champion now, means contributing to the quality, effectiveness, and appropriateness of dental care in future

Thank you

Knowledge systems for knowledge transfer and uptake

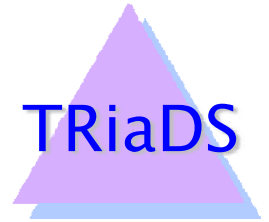
- **Cochrane Effective Practice and Organisation of Care (EPOC) group undertakes systematic reviews of interventions to improve health care systems and health care delivery including:**
 - **Professional interventions (e.g. continuing medical education, audit and feedback)**
 - **Financial interventions (e.g. professional incentives)**
 - **Organisational interventions (e.g. the expanded role of pharmacists)**
 - **Regulatory interventions**
- Bero, Eccles, Grilli, Grimshaw, Gruen, Mayhew,**

TRiaDS

Translation Research in a Dental Setting

- **Funded by the Scottish Government via the office of the Chief Dental Officer**
- **To develop an integrated portfolio of multidisciplinary translational research to establish a practical evaluative framework for implementation**

Vision

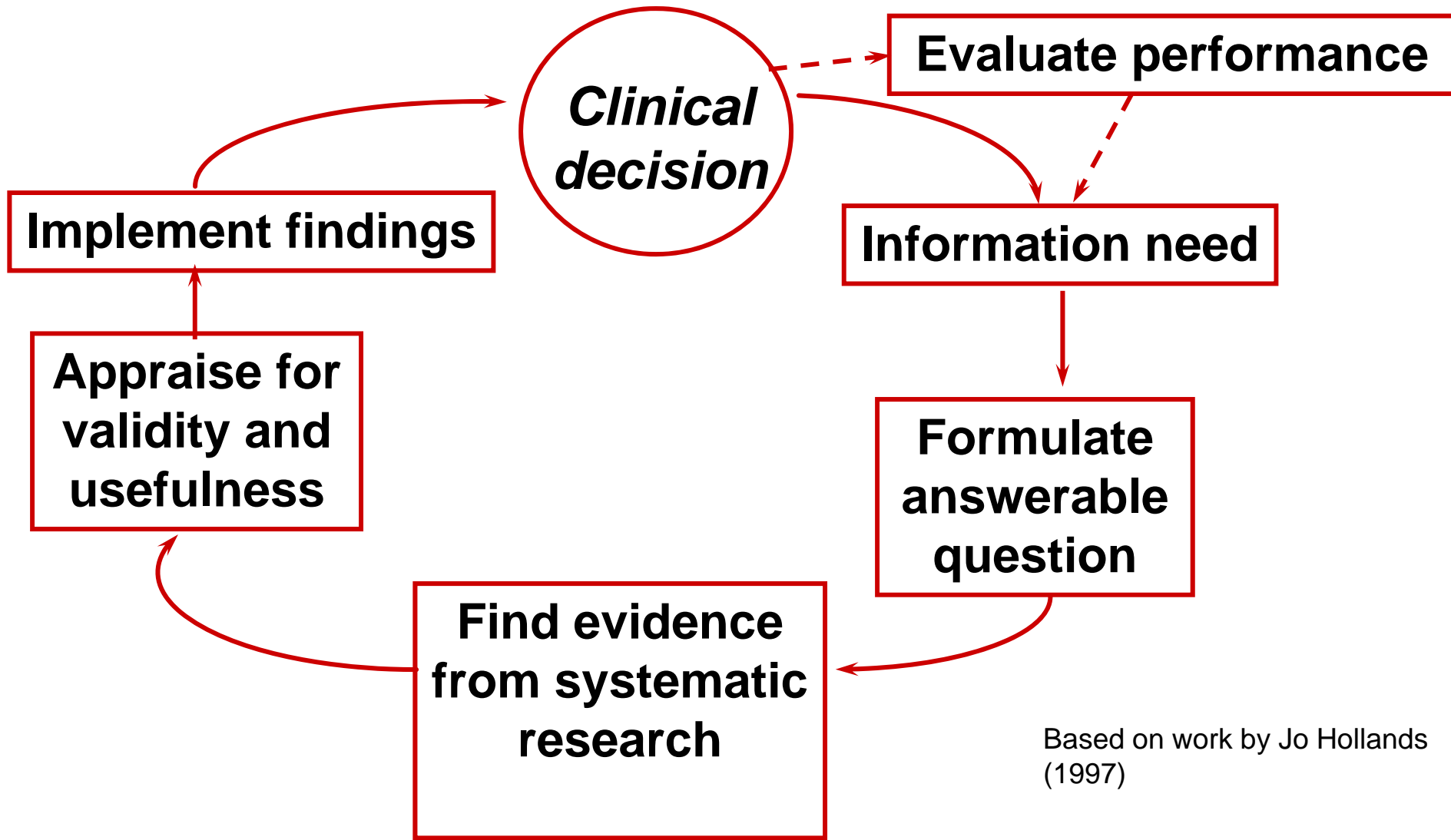


"To improve the quality of dental health care for patients in Scotland (by reducing variation in practice and outcome?), through informing dental service decision-makers on how to effectively and cost-effectively translate national recommendations for effective dental practice (based on best evidence) into existing dental practice."

The approach/aim:

To develop an integrated portfolio ('suite of evaluations') of multidisciplinary translational research to establish a practical evaluative framework (approach) for implementation.

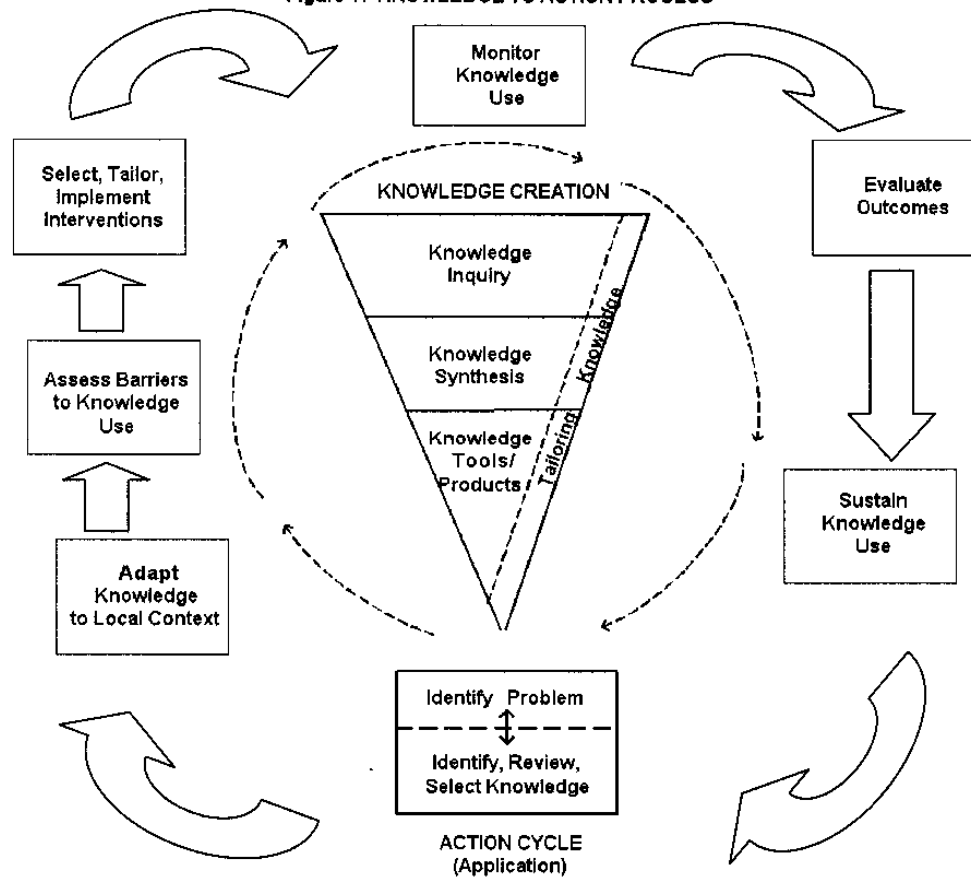
Evidence Based Dentistry



Based on work by Jo Hollands (1997)

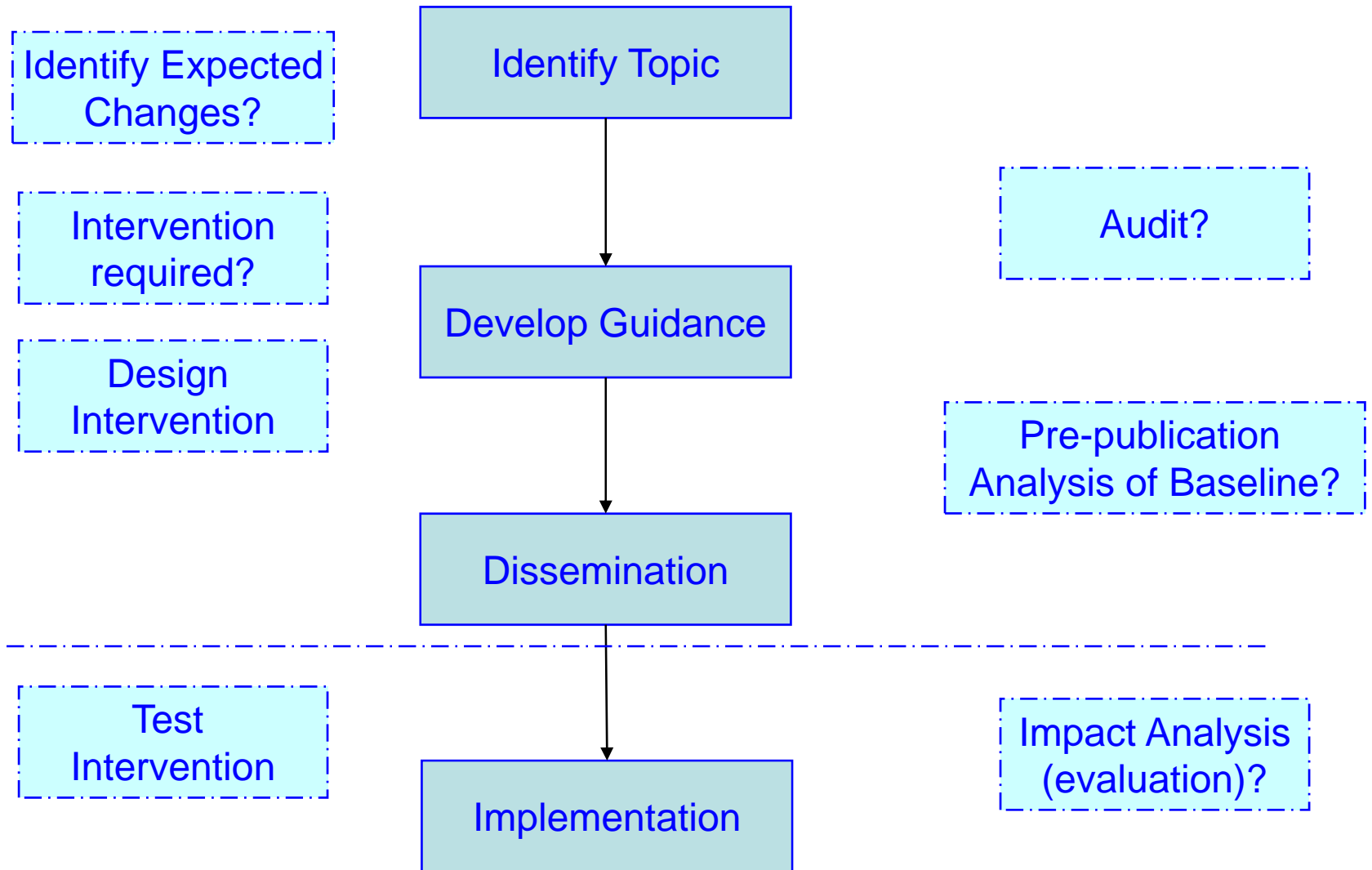
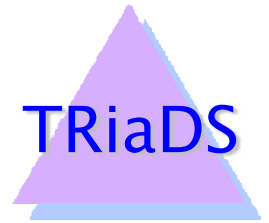
Knowledge to action cycle

Figure 1: KNOWLEDGE TO ACTION PROCESS



Graham et al (2006). Lost in Knowledge Translation. Time for a Map? *Journal of Continuing Education for Health Professionals*

Operational framework for evaluation and implementation



Results: Postal Survey of Decontamination Practice

In your current infection control/decontamination practice, do <u>you</u>:	Responses No (%)	Do you plan to change? Yes (%)
Remove hand and wrist jewellery at the start of each session	52%	22%
Clean hands before putting on gloves	37%	14%
Change gloves before seeing <i>each</i> patient	3%	3%
Use single use items only once	16%	6%
Work in a clutter - free environment	54%	18%
Use disposable, non-linting towels to dry instruments immediately after rinsing	66%	26%
Inspect all instruments with an illuminated magnifier every time after you clean	93%	22%
Follow written policies on cleaning instruments	30%	13%