TRiaDS in action
Evaluating Infection Control Teams in Dental Primary Care: Translating 'can't' into 'can'

Craig Ramsay

On behalf of the TRiaDS Research Methodology Group

Health Services Research Unit
University of Aberdeen

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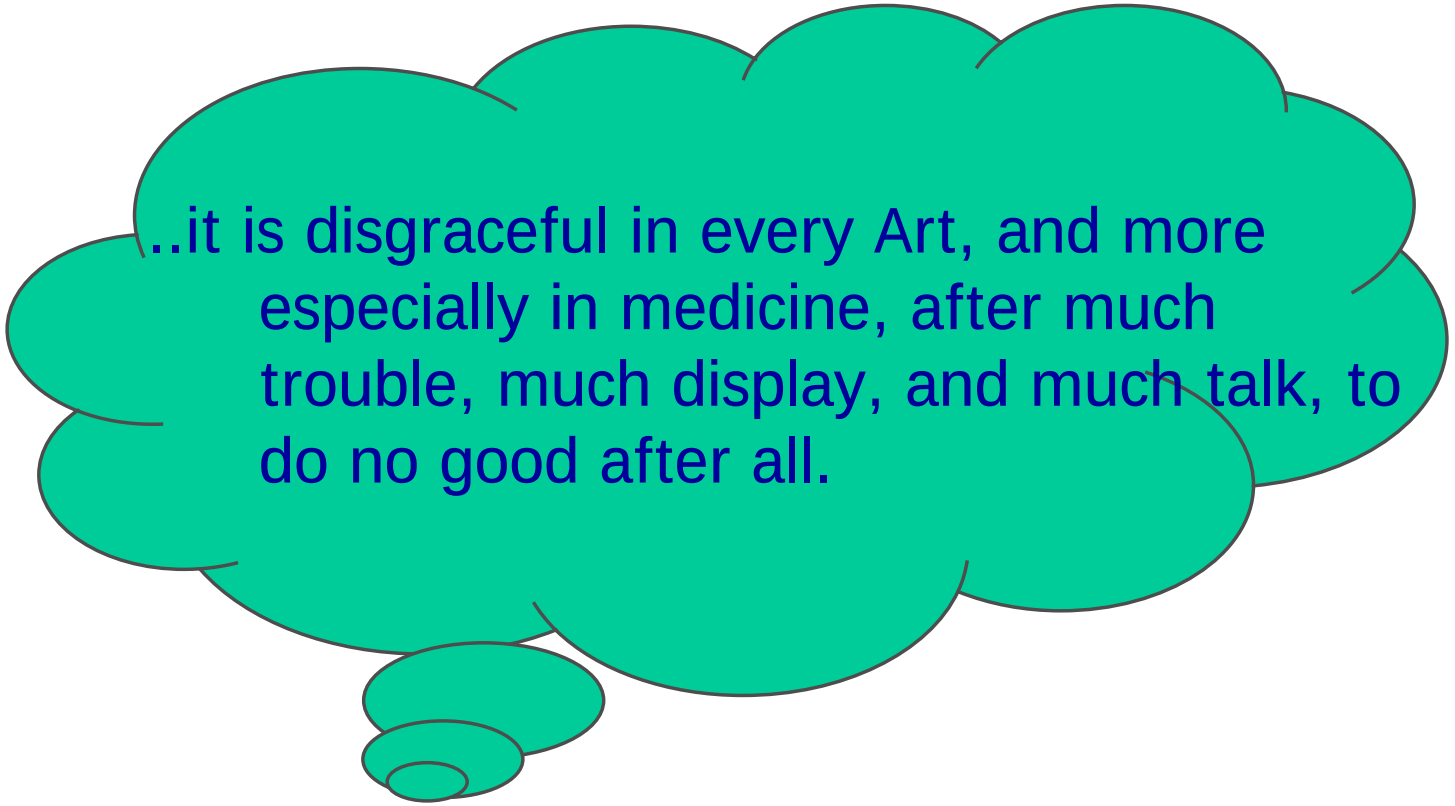
My motivation...



On the Articulations. Hippocrates 400 BC

Knowledge into action

- The translation of knowledge into clinical practice is a slow and haphazard process
- One common policy strategy to help promote knowledge translation is the production of clinical guidance, but
- It has been demonstrated that the simple publication of guidance is unlikely to optimise practice
- Additional knowledge translation interventions have been shown to be effective, but effectiveness varies and much of this variation is unexplained

Translation Research in a Dental Setting

- A programme of KT research embedded within a guidance development programme
- Uses a standardised process to inform
  - Development of guidance
  - Need for, and design of, KT strategies
  - Evaluation of KT strategies
- A multi-disciplinary research collaboration with public, academic, policy, service and professional members

TRiaDS Aim

To improve the quality of the dental healthcare of patients in Scotland by:

- establishing a practical evaluative framework for the translation of guidance
- conducting and evaluating a programme of integrated, multi-disciplinary, knowledge translation research embedded within SDCEP

TRiaDS Aim

To improve the quality of the dental healthcare of patients in Scotland by:

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– conduc[illegible]ulti-
disciplin[illegible]thin SDCEP

Clarkson *et al. Implementation Science* 2010, **5**:57
http://www.implementationscience.com/content/5/1/57

IMPLEMENTATION SCIENCE

STUDY PROTOCOL **Open Access**

The translation research in a dental setting (TRiaDS) programme protocol

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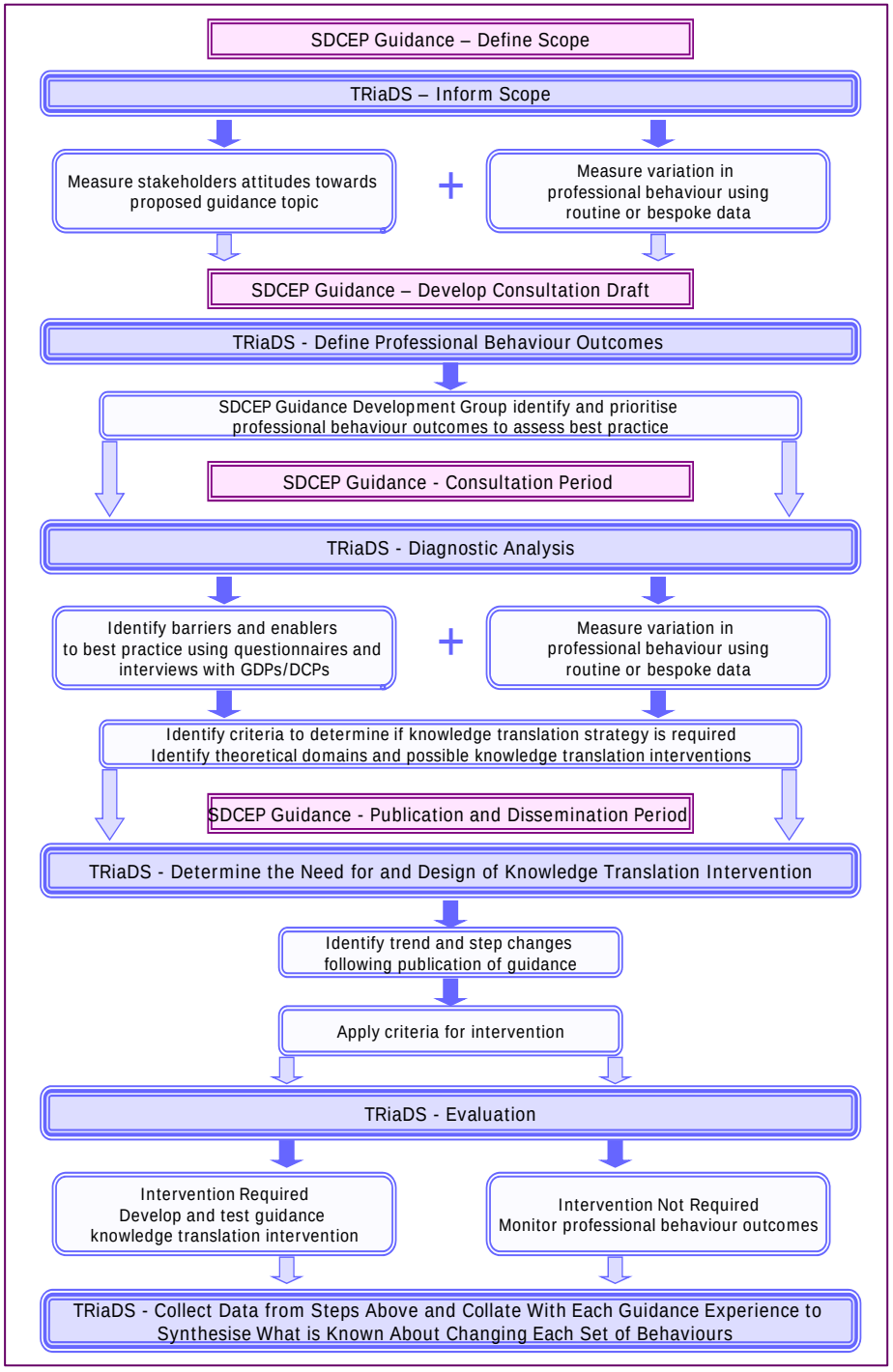
Frameworks in general

- Potentially useful tools for considering all the issues that the research needs to address
- Inevitably, there will be no ideal accepted framework that will fit all purposes
- Indeed different disciplines and areas in this room have frameworks that reflect different philosophical views

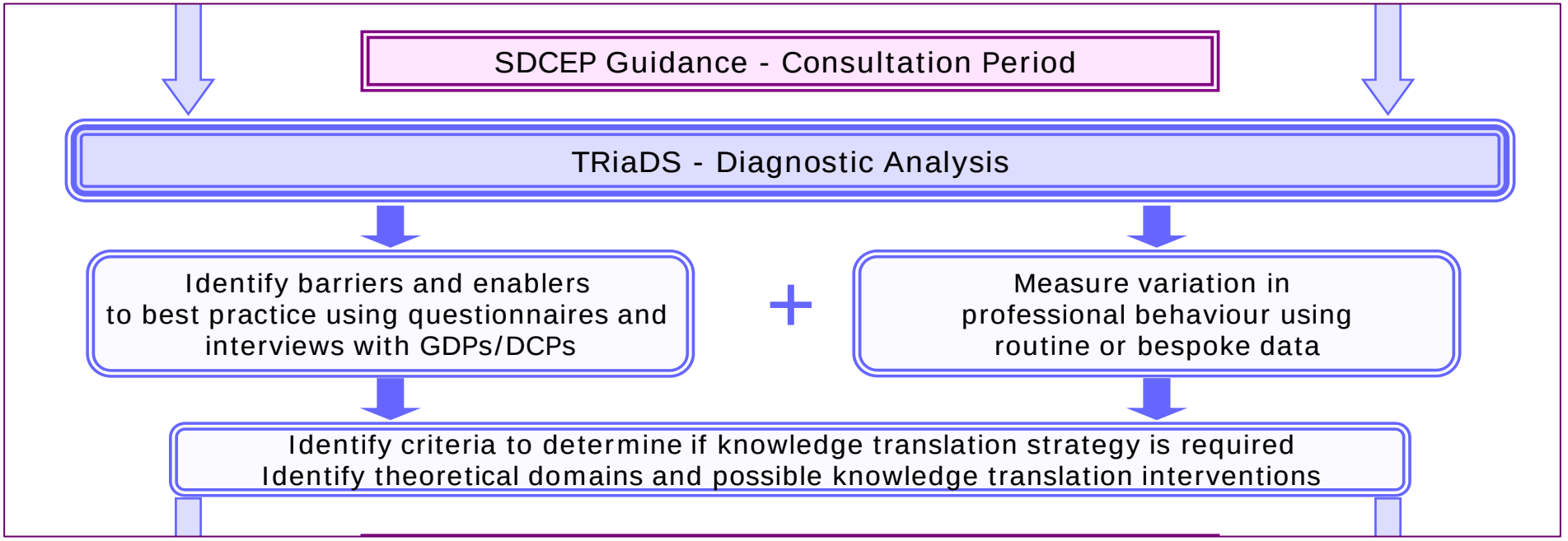
Commonalities across frameworks?

- An understanding of current practice
- An understanding of the reasons for mismatches between current practice and evidence
- An understanding of attributes of individuals responsible for introducing the clinically effective practice (and context in which they operate)

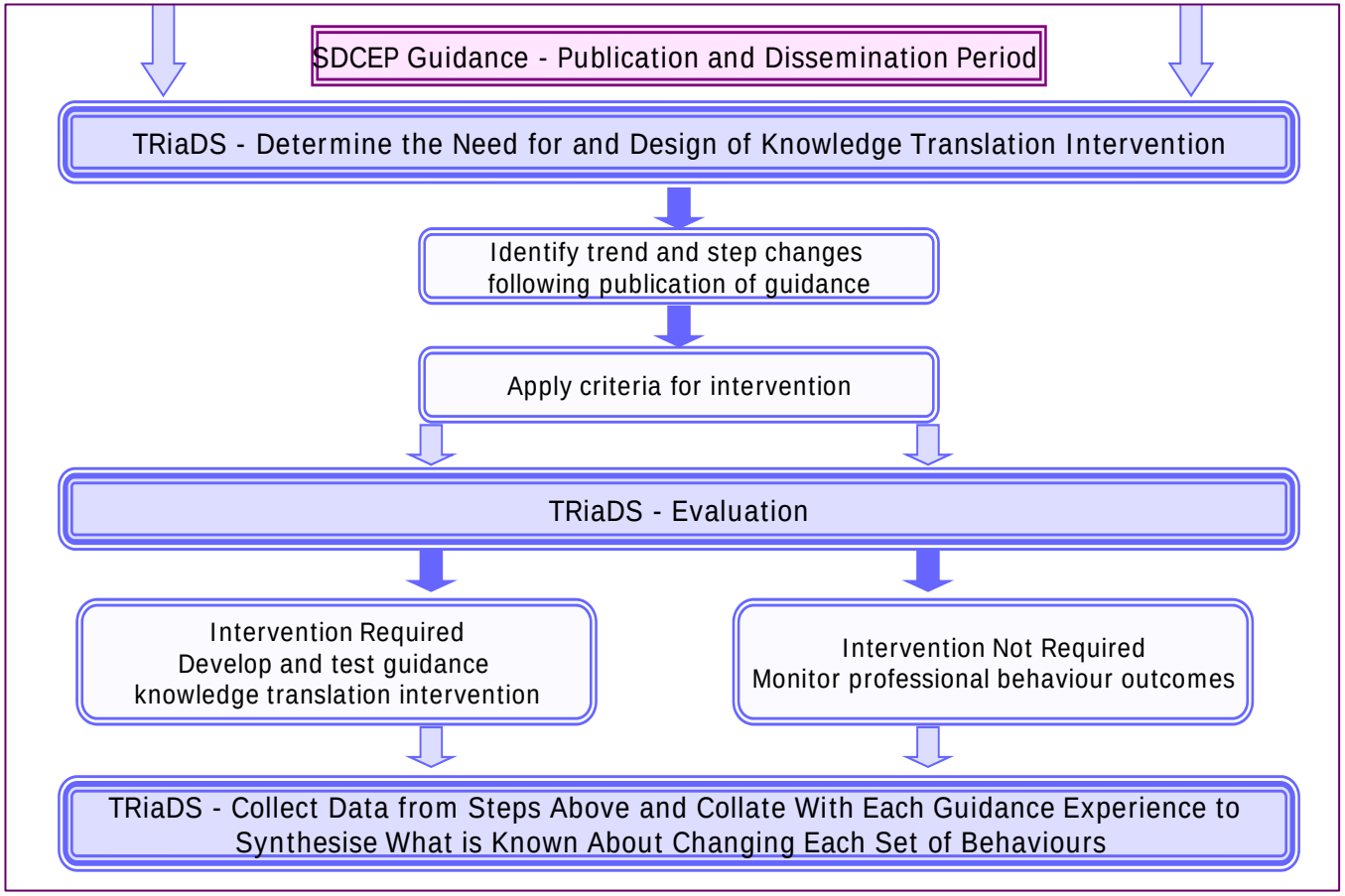
TRiaDS framework



Diagnostic analysis



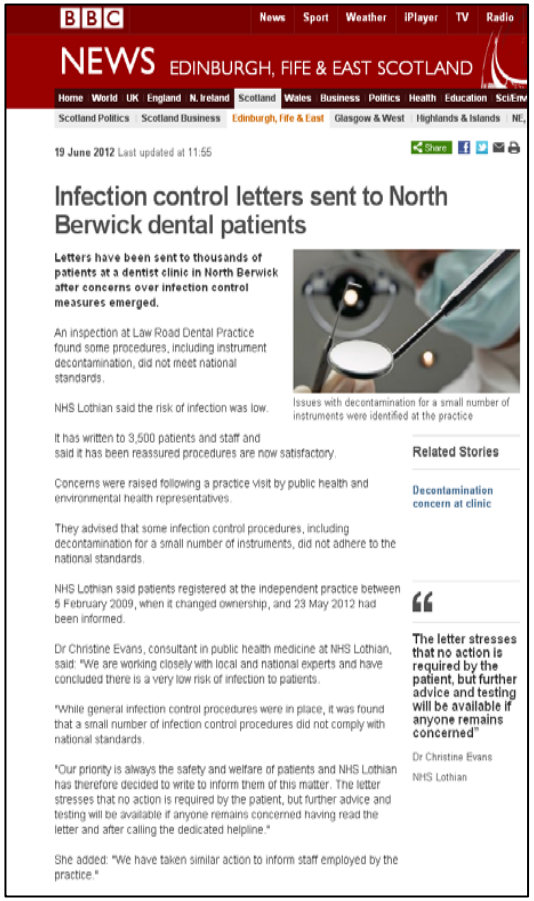
Evaluation


SDCEP Guidance - Publication and Dissemination Period
TRiaDS - Determine the Need for and Design of Knowledge Translation Intervention
Identify trend and step changes following publication of guidance
Apply criteria for intervention
TRiaDS - Evaluation
Intervention Required
Develop and test guidance knowledge translation intervention
Intervention Not Required
Monitor professional behaviour outcomes
TRiaDS - Collect Data from Steps Above and Collate With Each Guidance Experience to Synthesise What is Known About Changing Each Set of Behaviours

Decontamination: the problem

- 180 million reusable instruments locally decontaminated annually in primary dental care
- Large observational study showed practices in Scotland were not following best decontamination practice
- Inadequate decontamination of instruments increases risk of HAIs

Scottish Government priority



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19 June 2012 Last updated at 11:55

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Infection control letters sent to North Berwick dental patients

Letters have been sent to thousands of patients at a dentist clinic in North Berwick after concerns over infection control measures emerged.

An inspection at Law Road Dental Practice found some procedures, including instrument decontamination, did not meet national standards.

NHS Lothian said the risk of infection was low.

Issues with decontamination for a small number of instruments were identified at the practice

It has written to 3,500 patients and staff and said it has been reassured procedures are now satisfactory.

Concerns were raised following a practice visit by public health and environmental health representatives.

They advised that some infection control procedures, including decontamination for a small number of instruments, did not adhere to the national standards.

NHS Lothian said patients registered at the independent practice between 5 February 2009, when it changed ownership, and 23 May 2012 had been informed.

Dr Christine Evans, consultant in public health medicine at NHS Lothian, said: "We are working closely with local and national experts and have concluded there is a very low risk of infection to patients.

"While general infection control procedures were in place, it was found that a small number of infection control procedures did not comply with national standards.

"Our priority is always the safety and welfare of patients and NHS Lothian has therefore decided to write to inform them of this matter. The letter stresses that no action is required by the patient, but further advice and testing will be available if anyone remains concerned having read the letter and after calling the dedicated helpline."

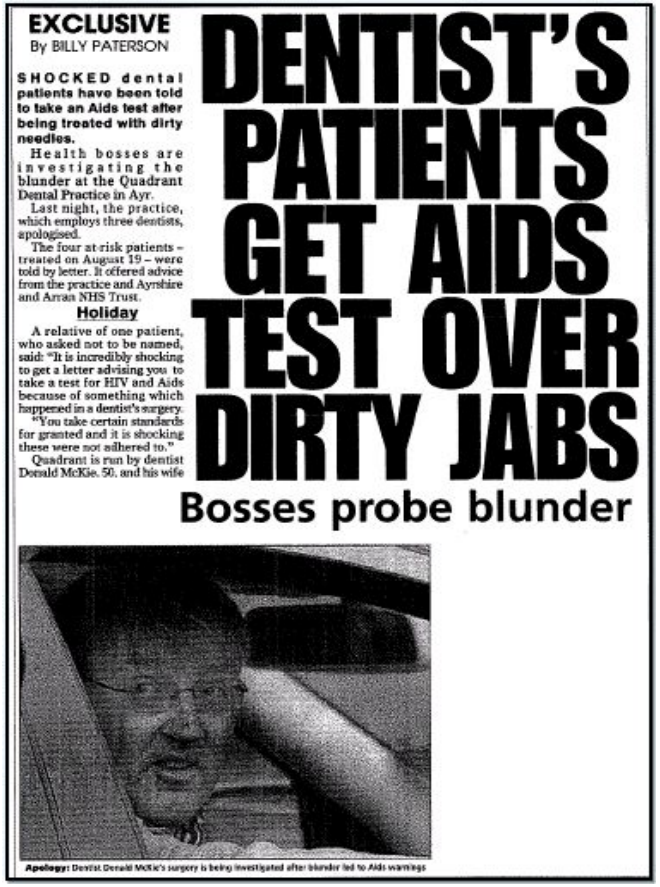
She added: "We have taken similar action to inform staff employed by the practice."

Related Stories

Decontamination concern at clinic

"The letter stresses that no action is required by the patient, but further advice and testing will be available if anyone remains concerned"

Dr Christine Evans
NHS Lothian



EXCLUSIVE
By BILLY PATERSON

DENTIST'S PATIENTS GET AIDS TEST OVER DIRTY JABS

Bosses probe blunder

SHOCKED dental patients have been told to take an Aids test after being treated with dirty needles.

Health bosses are investigating the blunder at the Quadrant Dental Practice in Ayr.

Last night, the practice, which employs three dentists, apologised.

The four at-risk patients – treated on August 19 – were told by letter. It offered advice from the practice and Ayrshire and Arran NHS Trust.

Holiday

A relative of one patient, who asked not to be named, said: "It is incredibly shocking to get a letter advising you to take a test for HIV and Aids because of something which happened in a dentist's surgery.

"You take certain standards for granted and it is shocking these were not adhered to."

Quadrant is run by dentist Donald McKie, 50, and his wife

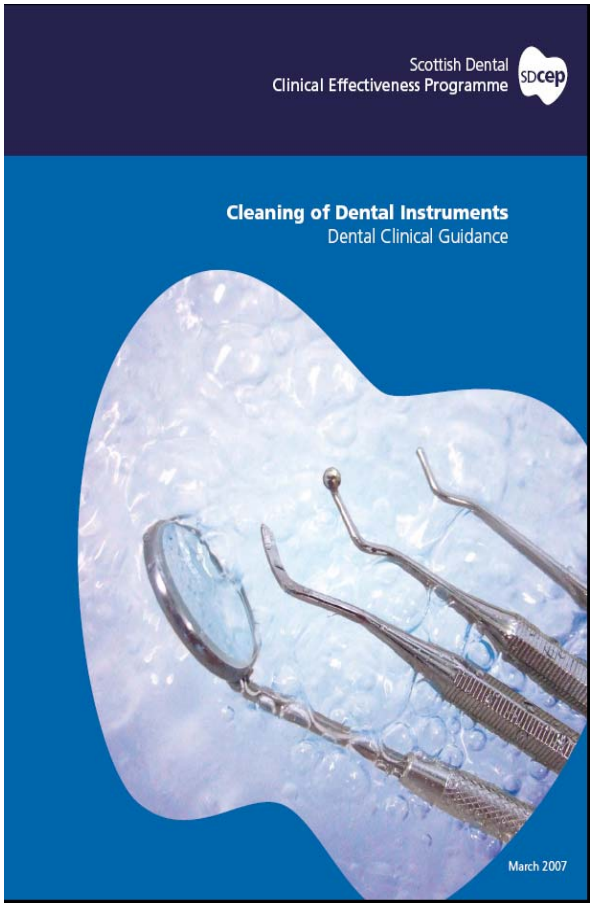
Apology: Dentist Donald McKie's surgery is being investigated after blunder led to Aids warnings

TRiaDS
Translation Research in a Dental Setting

Health Services Research Unit

Policy Initiatives

- Practice improvement funding - £10M+
- Postgraduate (S63) courses
- Infection Control Dental Support (ICDS) team in-practice training
- Clinical guidance



Was there variation in practice?

- Define professional behaviour outcomes
  - 13 specific decontamination behaviours
  - Outcome measurement instrument
- Postal survey to 115 dentists identified large variation in practice

In your current infection control/decontamination practice, do you:	Responses No (%)	Do you plan to change? Yes (%)
Remove hand and wrist jewellery	52%	22%
Clean hands before putting on gloves	37%	14%
Use single use items only once	16%	6%
Work in a clutter - free environment	54%	18%
Inspect all instruments with an illuminated magnifier	93%	22%
Change gloves before seeing ***each*** patient	3%	3%

Implementation Science

BioMed Central

Research article

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Can't do it, won't do it! Developing a theoretically framed intervention to encourage better decontamination practice in Scottish dental practices

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What the theory suggested as an intervention

Pre-motivational targets

For each non-compliant behaviour, the advisor asks if the dental team:

- Know what to do? - *If not,* **target knowledge**
- Know how to do it? - *If not,* **target PBC**
- Think doing it will result in a positive consequence? - *If not,* **target attitude**

Post-motivational target

For each non-compliant behaviour, the advisor & practice records **an action plan** :

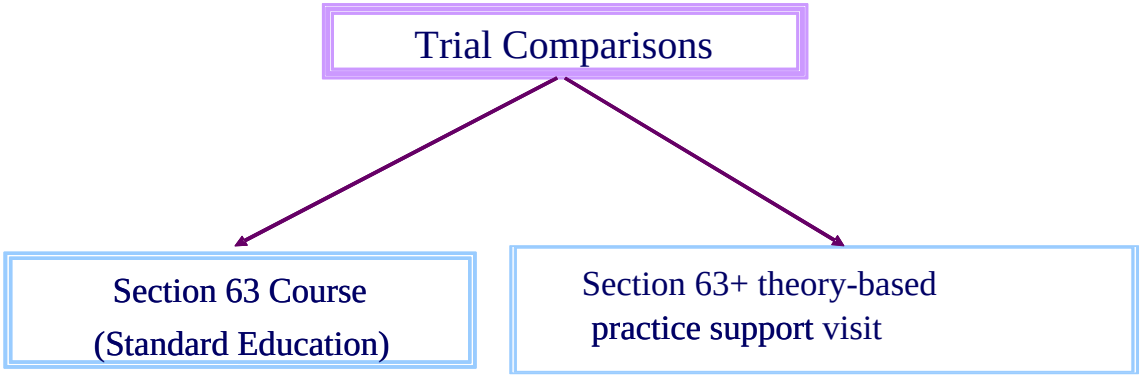
- Who, when, where the required action takes place;
- An appropriate prompt/reminder if required;
- Who, when, where progress/success is monitored
- Follow up telephone support: Check progress / reset plans if required

Tailoring the intervention

Problem	Goal	Action Plan	Who's responsible		Monitoring Progress	Has the action been achieved
Wearing watches during clinical sessions	Watches are not worn during clinical sessions	When I change into my uniform then I will take off my watch [may also develop AP for buying and fixing clock to surgery wall] Reminder (if appropriate) Changing into uniform	All staff		e.g. how, who, when	Date_____ Always ☐ Sometimes ☐ Never ☐ Any comments/problems
			All dentists	X		
			All DCPs	X		
			All non-clinical staff			
			Other (names)			

Evaluation design

In comparison to postgraduate education alone, does the addition of a theory-based, tailored, practice support visit lead to an increase in the implementation of decontamination behaviours in dental primary care?

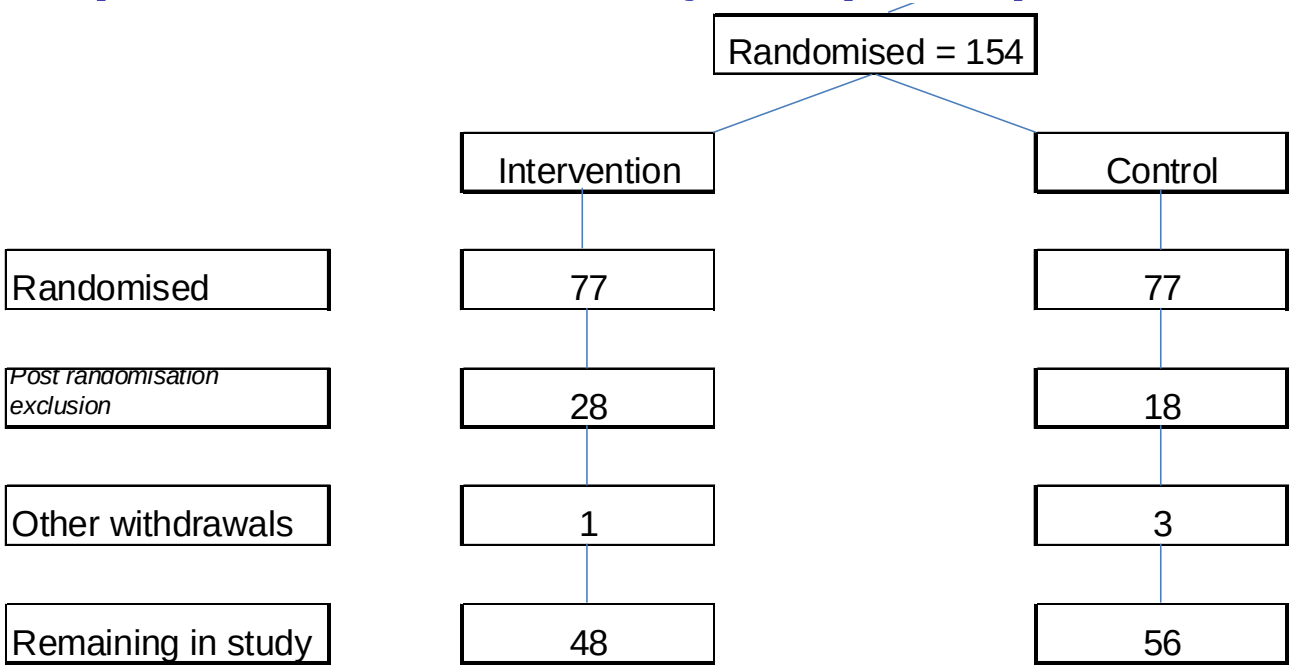


Primary Outcome: number of practices complying with the 13 key decontamination behaviours

Follow-up: 12 months

Results

- **Study was powered to detect a 15% increase (15% to 30%) in the number of fully compliant practices**



- **At 12 months follow-up was completed on all practices except for 1 practice in the intervention group**

Behaviour at baseline

Proportion of practices responding 'Always' for all behaviours

N	n	%	N	n	%
45	4	9%	55	3	5%

Behaviour	Always			
	Intervention		Control	
	n	%	n	%
Remove jewellery	33	73%	39	71%
Clean hands before gloves	39	87%	46	84%
Change gloves between patients	45	100%	55	100%
Use single use items once	40	89%	54	98%
Clutter-free environment	29	64%	36	65%
Follow manufacturer instructions	39	87%	48	87%
Dirty to clean workflow	38	84%	48	89%
Correct detergent	40	89%	50	91%
Protective equipment when cleaning	26	58%	28	52%
Correct container for transportation of equipment	24	55%	26	49%
Disposable non-linting towels for drying	17	38%	24	44%
Inspected with illuminated magnifier	8	18%	4	7%
Written policies followed	24	53%	35	64%

Behaviours at 12 months

Proportion of practices responding 'Always' for all behaviours

N	n	%	N	n	%	OR*	95% confidence interval		p-value
47	14	30%	56	6	11%	3.53	1.19	10.48	0.023

Behaviour	Always: Intervention n	Intervention %	Control n	Control %	OR*	95% CI		p-value
Remove jewellery	39	83%	47	84%	1.06	0.35	3.23	0.92
Clean hands before gloves	44	94%	50	89%	1.41	0.28	7.21	0.68
Change gloves between patients	46	98%	56	100%		n/a		
Use single use items once	46	98%	54	96%	1.48	0.13	16.95	0.75
Clutter-free environment	39	83%	36	64%	2.57	0.95	6.91	0.06
Follow manufacturer instructions	44	94%	54	96%	0.54	0.09	3.41	0.51
Dirty to clean workflow	45	96%	53	95%	1.37	0.21	8.97	0.74
Correct detergent	45	96%	55	98%	0.39	0.03	4.49	0.45
Protective equipment when cleaning	30	64%	35	63%	1.30	0.55	3.08	0.55
Correct container for transportation of equipment	36	77%	38	75%	2.03	0.68	6.00	0.20
Disposable non-linting towels for drying	34	72%	32	57%	2.46	0.98	6.19	0.06
Inspected with illuminated magnifier	18	38%	20	36%	0.87	0.35	2.17	0.77
Written policies followed	39	83%	45	82%	1.25	0.43	3.63	0.68

Attitude

Behaviour	Attitude						
	Intervention			Control			
	N	Mean	SD	N	Mean	SD	p-value
Clutter-free environment	46	6.8	0.6	55	6.5	1.0	0.16
Disposable non-linting towels for drying	46	6.4	1.2	55	6.0	1.6	0.31

Scale 1 = most negative attitude to 7 = most positive attitude

Perceived behavioural control

Behaviour	Perceived behaviour control						
	Intervention			Control			
	N	Mean	SD	N	Mean	SD	p-value
Clutter-free environment	44	6.3	1.1	54	5.8	1.5	0.13
Disposable non-linting towels for drying	45	6.3	1.3	53	6.2	1.6	0.78

Scale 1 = most negative response to 7 = most positive response

Intention

Behaviour	Intention						
	Intervention			Control			
	N	Mean	SD	N	Mean	SD	p-value
Clutter-free environment	44	6.9	0.4	54	6.9	0.4	0.86
Disposable non-linting towels for drying	45	6.7	1.0	53	6.3	1.6	0.26

Scale 1 = most negative response to 7 = most positive response

Summary of results

- There was a significant increase in the proportion of practices exhibiting “perfect” behaviour (11% upto 31%)
- There was a general improvement from baseline suggesting the course alone was changing some behaviours
- Suggestion that decluttering and appropriate drying of utensils were contributing factors
- Perceived behavioural control appeared to be related to the decluttering behaviour (ie increased) and intention (attitude) for drying of utensils

Lessons learned

- **RESEARCH:** Close working between researchers and service deliverers can make implementation research possible
- **IMPLEMENTATION:** ICDS team continue to follow the intervention and is now a routine part of service support and delivery
- **COMPROMISE:** Service delivery won't wait – research may involve compromises

Main conclusion

- **Demonstrated that the TRiaDS approach to knowledge translation embedded within a guideline programme works (at least in dentistry)**

- **The challenge is to integrate the framework into other areas**

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