

Developing a Child Oral Health Audit Intervention

SOHRC Conference

Stirling Highland Hotel, 18 February 2015

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Outline

Background – dental caries

Pilot studies

SOHRC child oral health initiatives



Background

- Dental caries is the most common chronic disease of childhood and adulthood
- Influenced by socio-economic factors
- Impacts quality of life and productivity
- Policy and public health initiatives
 - Childsmile (2005)
 - SDCEP guidance (2010)
 - SDR amendments (2011)
 - SIGN 138 (2014)
 - SDCEP guidance 2nd Edition (due 2015)



Figure 3: Trends in the proportion of P1 children with no obvious decay experience in Scotland; 1988-2014¹

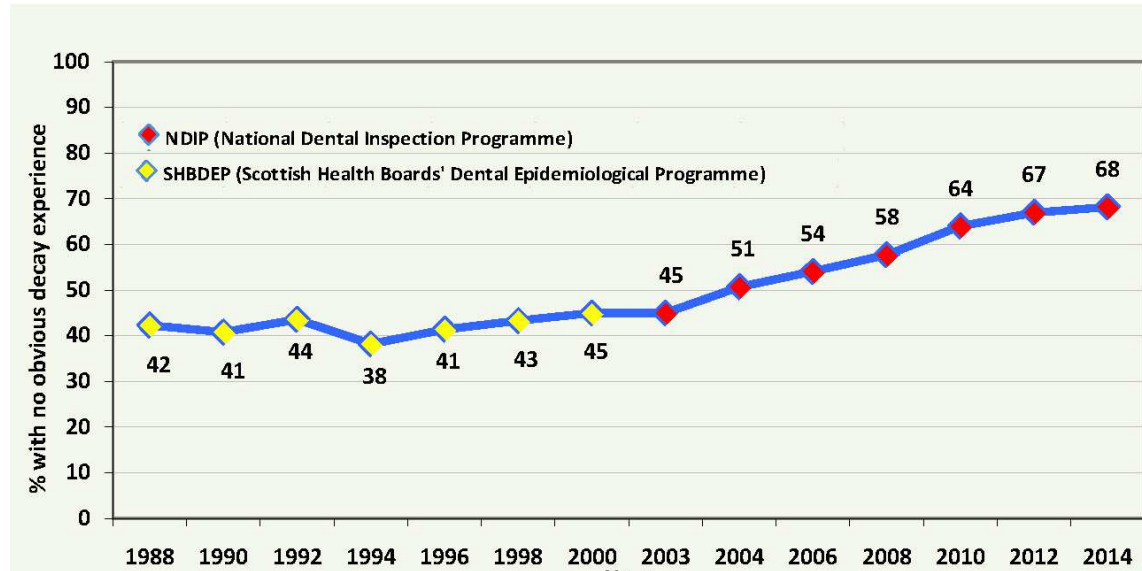


Figure 4: Mean number of decayed, missing and filled primary teeth (d₃mft) in the P1 population in Scotland; 1988-2014¹

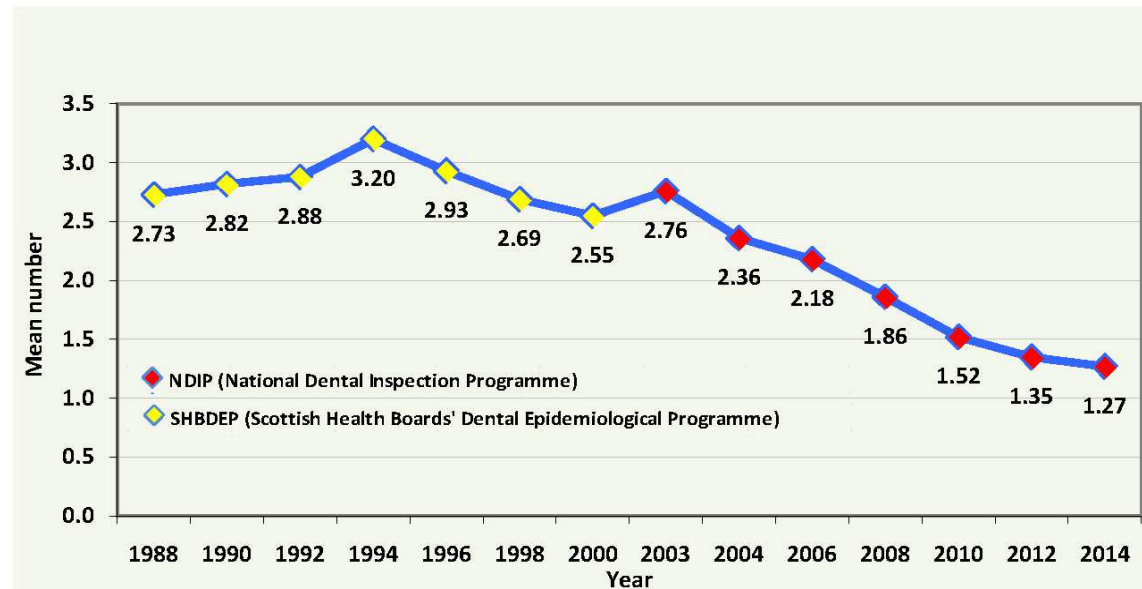
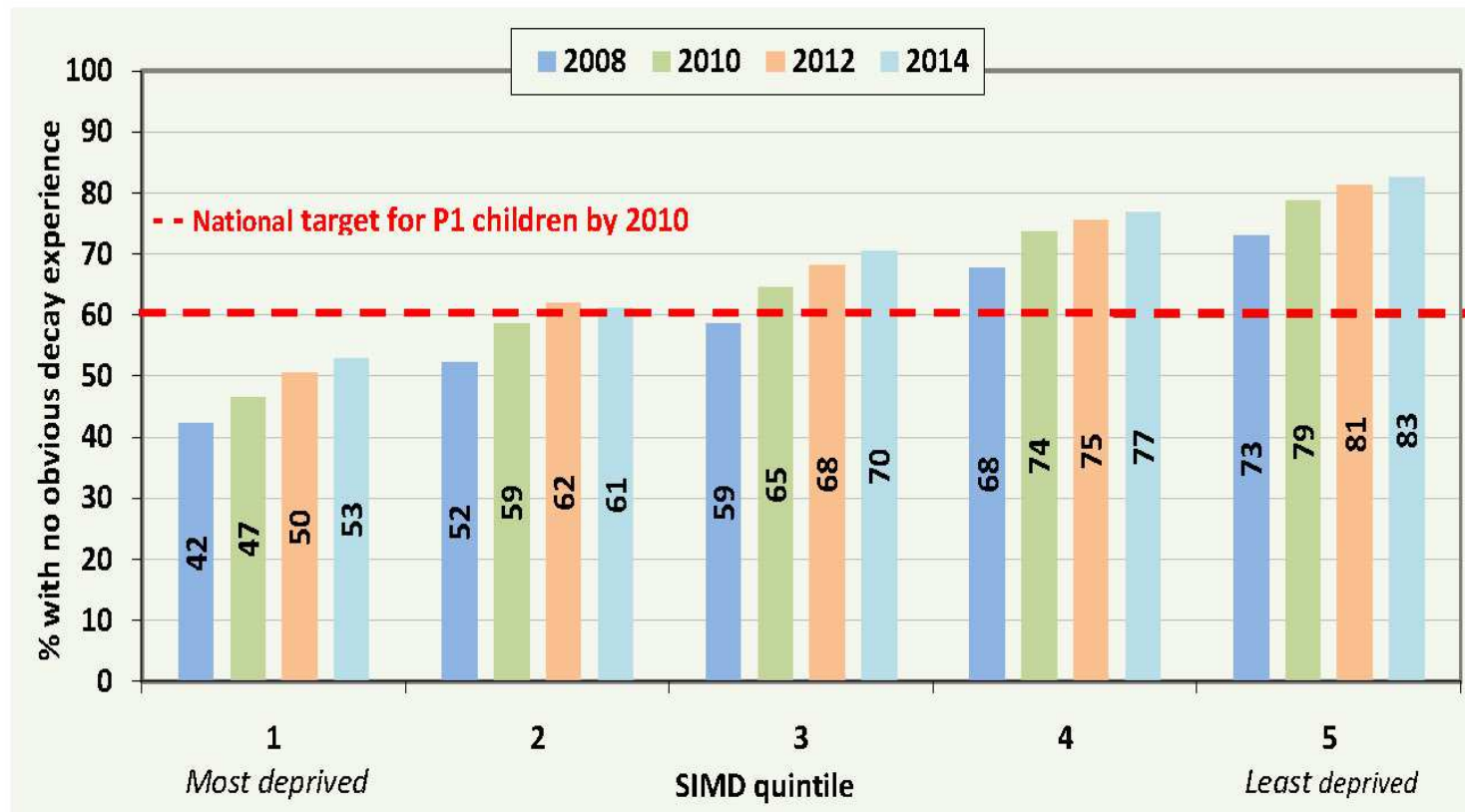


Figure 8: Change between 2008 and 2014 in the proportion of P1 children in Scotland with no obvious decay experience; by SIMD quintile¹⁻²



NDIP 2014 (Source: ISD NDIP Database)

Evidence Based Prevention



Fluoride Varnish- Cochrane Review

- reduction in decayed missing and filled teeth
 - 37% deciduous teeth
 - 43% permanent teeth

SDCEP Guidance

- Apply sodium fluoride varnish (5%) twice a year to children

SIGN 138

- Fluoride varnish should be applied at least twice yearly in all children



Use of FV treatments in Scotland - 34.5% of 3 & 4 year old children had 2 or more FVAs in 2013/14

HEAT target (60%) not achieved

Evidence Based Prevention



Fissure Sealant - Cochrane Review

- sealing occlusal surfaces of permanent molars reduces odds of caries (OR: 0.12) at 2 years e.g if 40% of tooth surfaces develop decay PFS reduces this to 6%

SIGN 138

- Resin-based fissure sealants should be applied to the permanent molars of all children as early after eruption as possible

SDCEP guidance

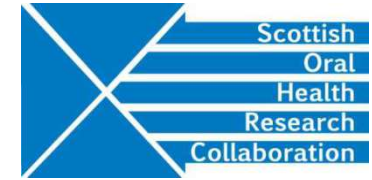
- 2nd Edition to be revised in line with SIGN 138

NDIP 2013

~ 30% first permanent molars P7 children fissure sealed and sound



Pilot Studies



Conducted by SOHRC partners to explore barriers and facilitators to the provision of evidence based care for the prevention of dental caries

TRiaDS (2010/11)

- 'Is further intervention required to translate caries prevention and management recommendations into practice?' *BDJ* 218, 20 - 21 (2015)

Childsmile (2011)

- 'Use of the theoretical domains framework to further understanding of what influences application of fluoride varnish to children's teeth: a national survey of general dental practitioners in Scotland.' *Community Dent Oral Epidemiol* Feb 2015

TRiaDS, Childsmile, SDCEP, Universities Dundee & Aberdeen (2012-14)

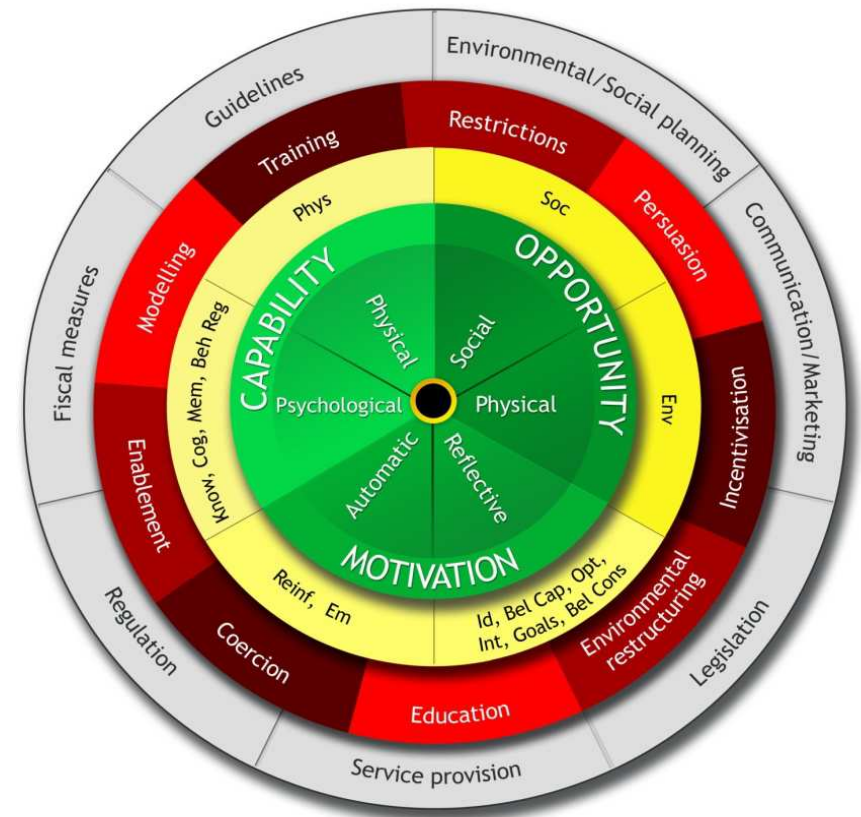
- Prevention and Management of Dental Caries in General Practice (CSO CZH/3/27) – in-depth exploration from multiple stakeholder perspectives



Common Framework

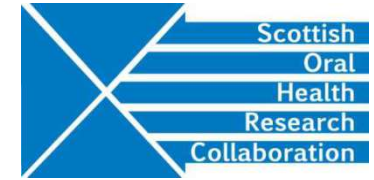


- All underpinned by the Theoretical Domains Framework to identify the key domains that influence behaviour
- Enables
 - use of Behaviour Change Wheel to identify and design theory-informed interventions for change
 - selection of behaviour change techniques with the greatest likelihood of success



Michie et al Implemt Sci 2011

Findings



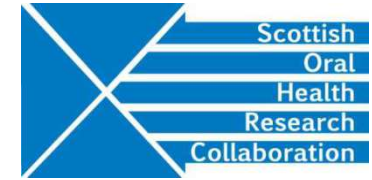
Self-reported FVA and PFS placement broadly corresponded to evidence from NDIP, HEAT target

Salient Theoretical Domains

- FV A and PFS
 - Motivation
 - Social influences (from patients and peers)
 - Beliefs about consequences (benefits and harms)
- FVA
 - Knowledge (awareness of recommendations)
 - Professional identity (belief important part of professional role)



Stakeholder meeting



- Review of findings (data integration matrix)
- Professional behaviour(s) for change prioritised
PFS placement 6-12 year olds (interventions easily adaptable to FVA)
- Review of potential, theoretically relevant intervention types
incentives coercion, environmental restructuring, education, persuasion, modelling
- Selection of interventions with greatest theoretical and practical (policy, practice) likelihood of success
Practice level: Audit with BCTs to target beliefs about consequences include feedback
Patient level: provision of information to increase social influence



SOHRC child oral health initiatives



Coordinated approach to the development of national, pre-approved audits for FVA and PFS placement (TRiADS, Childsmile, SDCEP, NES Oral Health Improvement Tutors)

Preventive Management – Fissure Sealant Audit

Topic: The placement/prescribing of preventive fissure sealants

Introduction: Guidance from SIGN and SDCEP recommend placing preventive fissure sealants (PFS) on 6s and 7s as soon as possible after eruption, regardless of perceived caries risk. This recommendation is supported by clinical evidence, epidemiological data, systematic reviews, and professional organisations.

Despite the clear evidence that PFSs are currently *the* most effective treatment for preventing and arresting decay in permanent molars, NHS payment databases show that they are severely underutilised in Scotland. This cannot be attributed to previous guidance recommendations to fissure seal according to caries risk, as the majority of higher risk children are also not receiving this treatment in Scotland.

This audit is a means to help you assess your own management of children, and if necessary to increase the number of PFS you place or prescribe.

Aim: To support the implementation of guidance recommendations relating to preventive management

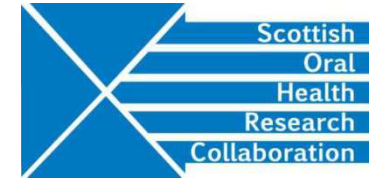
Objective: Enable you to identify and address specific barriers that may be currently deterring you from placing/prescribing a PFS on the erupted 6s and 7s of all patients between 6 and 14 years of age.

There are 5 steps to completing this audit:

- Step 1** Retrospective data collection, Form 1: Complete Form 1 for each of the last twenty 6- 14 year old patients you have seen
- Step 2** → Barriers to placing/prescribing FS and improvement strategies, Form 2: Identify factors that may prevent you achieving the recommended standard, how they may be influencing your PFS decisions, and suggest improvement strategies for your practice
- Step 3** → Improvement planning, Form 3: Create action plans to implement improvement strategies
- Step 4** → Prospective data collection, Forms 4A, 4B, 4C: Record the progress of your action planning for 5 patients (Form 4A), revise if required (Form 4B), then continue to record your progress for a further 15 patients (Form 4C)
- Step 5** → Audit report, Form 5: Complete a report of your audit by answering the questions

Draft

Audit and Feedback



“Any summary of clinical performance of healthcare over a specified period of time” aimed at changing health professional behaviour

- RAPID – use of routine data to provide individualised A&F on antibiotic prescribing rates
 - A&F resulted in a significant decrease in dentists’ antibiotic prescribing rate (6%, ~ 20,000 items)
 - effect greatest for high prescribers (12% reduction)
 - A&F with inclusion of text-based behaviour change message and HB comparator likely to be most effective
- Cannot assume generalisable to FVA or PFS placement
 - different professional behaviours
 - different barriers and facilitators
 - aim to increase desirable behaviour not decrease undesirable behaviour

Ivers NM, et al. *Implement Sci*, 9:14.

RCT evaluating effectiveness of theory informed FVA and PFS A&F interventions



CSO funding application submitted January 2015

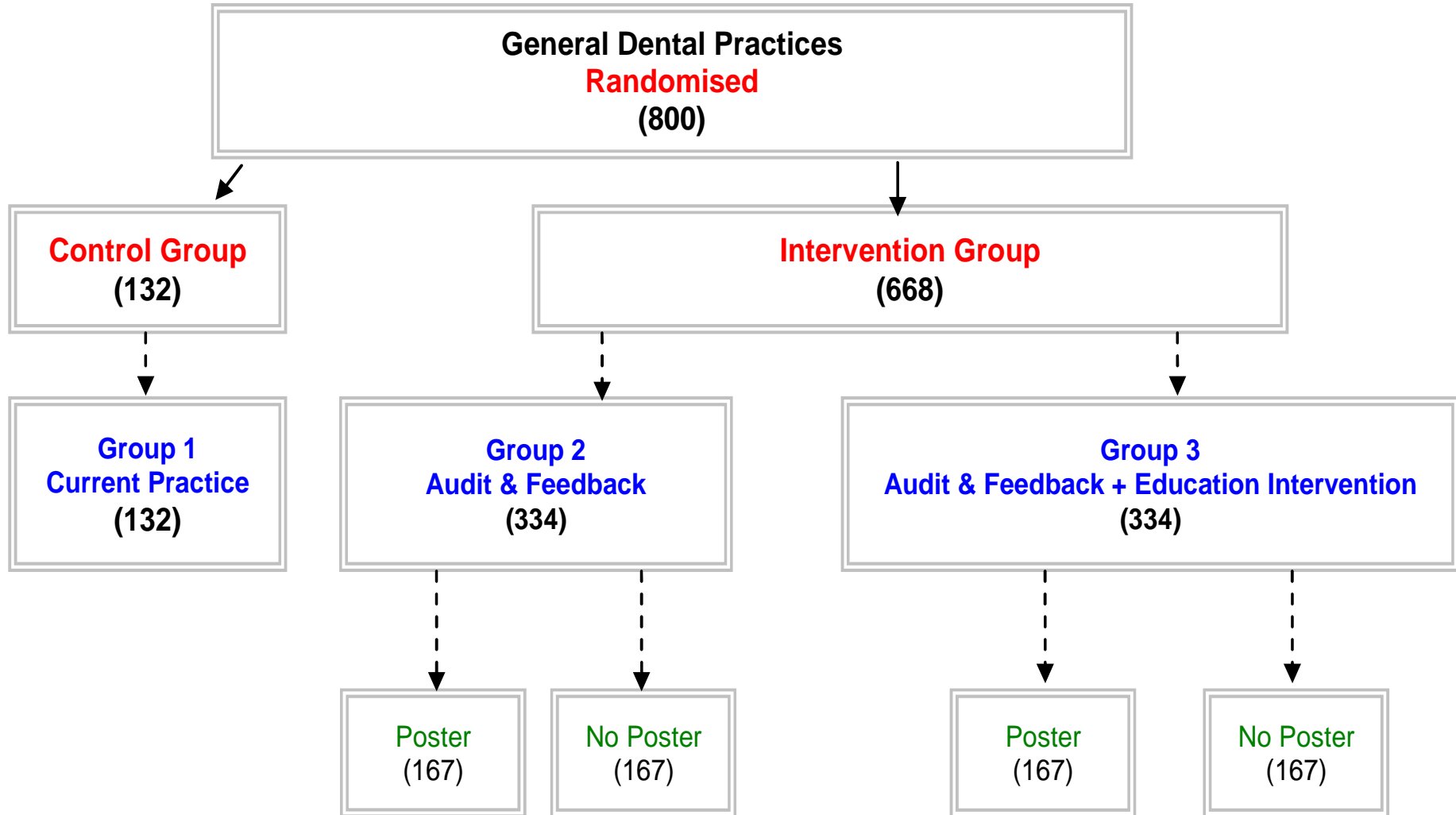
- Current practice
 - Childsmile, SIGN 138, SDCEP 2nd Edition, self-completion FV and PFS pre-approved audits
- Interventions generated from routine data (MIDAS)
 - A&F – including HB comparator and text-based message reiterating behavioural instructions from SIGN and SDCEP guidance
 - A&F plus education intervention – text-based, target knowledge, beliefs about consequences, professional identity

Sub-group interventions

- Patient poster – increase social influence (patients and peers), discussion cues/ prompts



Study Design



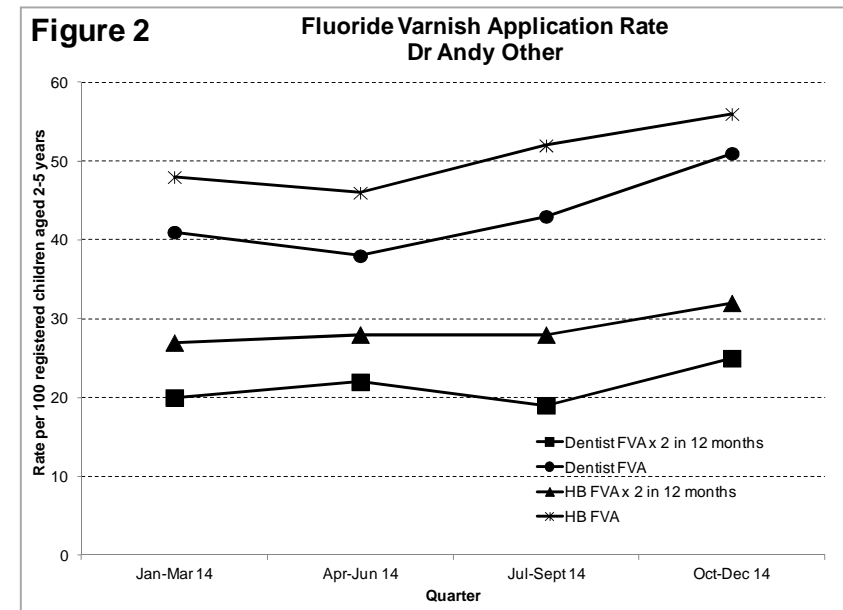
Outcomes

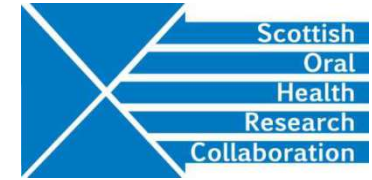
Primary outcomes

- FVA –total number of FVAs per 100 registered children aged 2-5 years.
- PFS –total number of PFS per 100 registered children aged 5-10 years.

Process evaluation to further understand why (or why not) interventions were effective

CSO funding application meeting – July 2015





Thank You

We thank all stakeholders that have contributed to these projects. The views expressed are those of the authors and not the funders who supported the projects.

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