



University of Glasgow

How dentists do Resilient Health Care with minimal support, and what they think of it...

AI Ross

16th August Session 2

INSPIRING PEOPLE



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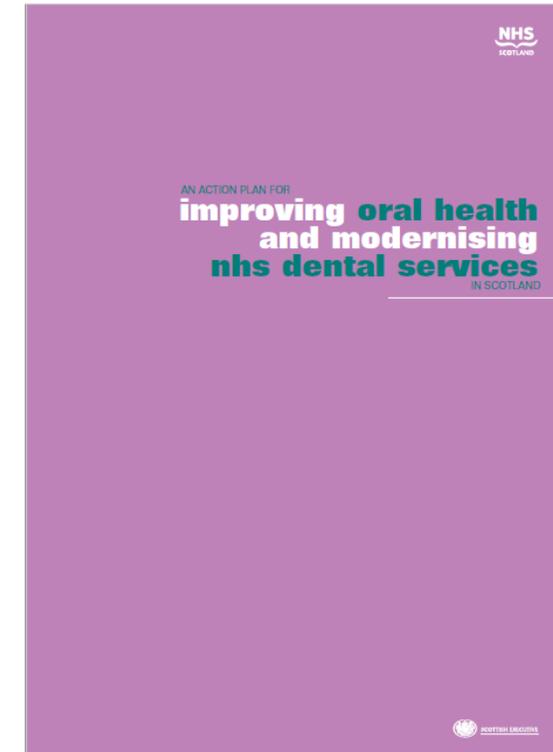
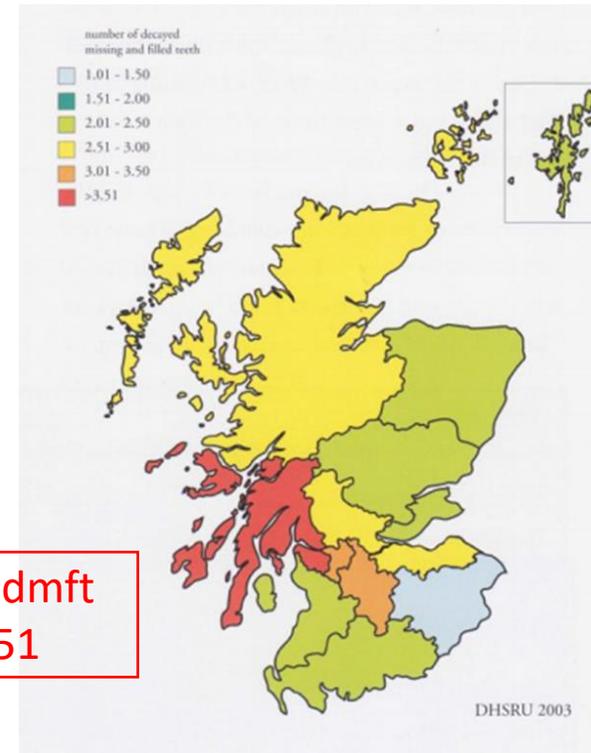
The Resilient Health Care Society

Virtual Summer Workshop, 16-18 August 2021



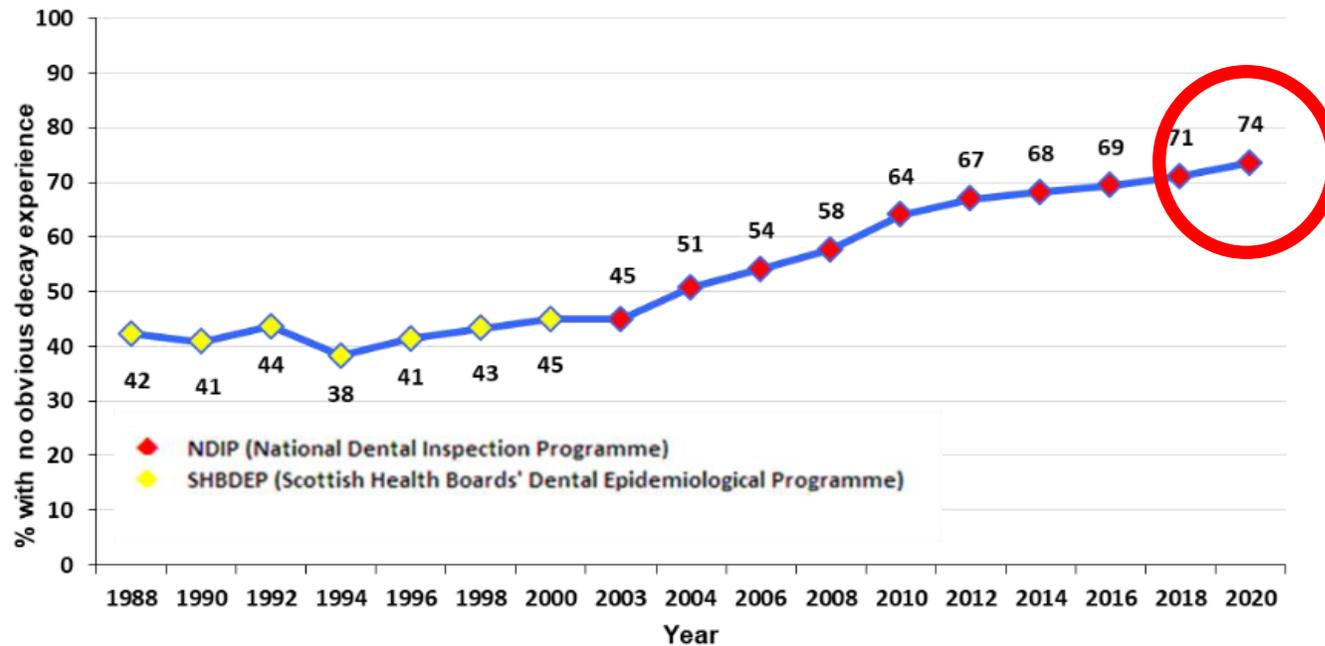
Background

- In early 2000s in Scotland, almost 60% 5-year-olds with obvious caries experience
- Clear oral health inequalities
- Treatment-focused primary health care system; prevention limited to dental health education
- Scottish Government Oral Health Action Plan
 - Identified need for national programme to improve oral health of children in Scotland and reduce inequalities



Improvement in % 5 year olds with no obvious decay (dmft=0)

Figure 3: Trends in the percentage of P1 children with no obvious decay experience in Scotland; 1988-2020¹

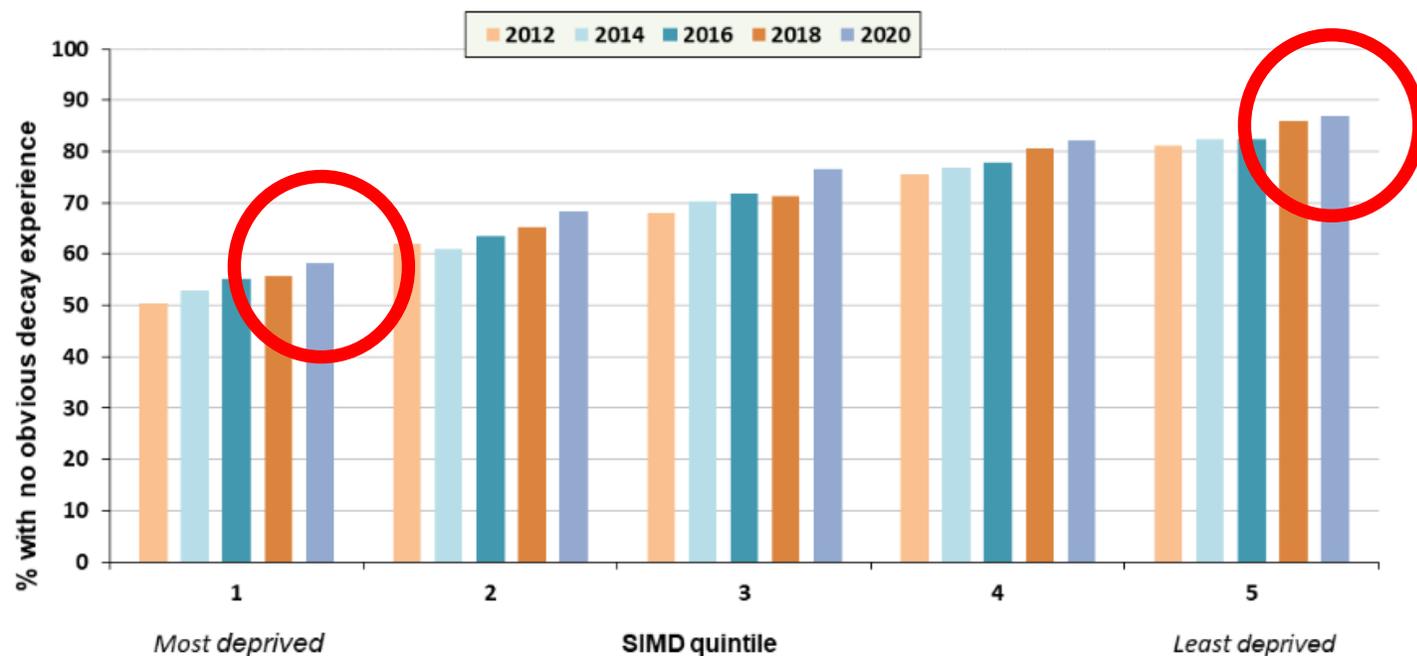


Source: Public Health
Scotland National Dental
Inspection Programme

No obvious decay experience
is when d3mft=0

Social gradient in % 5 year olds with no obvious decay (dmft=0)

Figure 8: Change in the percentage of P1 children in Scotland with no obvious decay experience; by SIMD quintile^{1,2}



Source: Public Health
Scotland National Dental
Inspection Programme

No obvious decay experience
is when d3mft=0

SIMD= Scottish Index of
Multiple Deprivation



'Proportionate universalism'



- Universal e.g.
 - Supervised nursery toothbrushing
 - Preventive dental primary care contract
 - Oral hygiene instruction, diet advice, **Fluoride Varnish (FV)**
- Targeted e.g.
 - FV application in nurseries & schools in deprived areas
 - Dental Health Support Workers for disadvantaged families
 - N= 13,107 children in 18/19
 - Linking to local community-based support organisations



Fluoride varnish in practice is variable

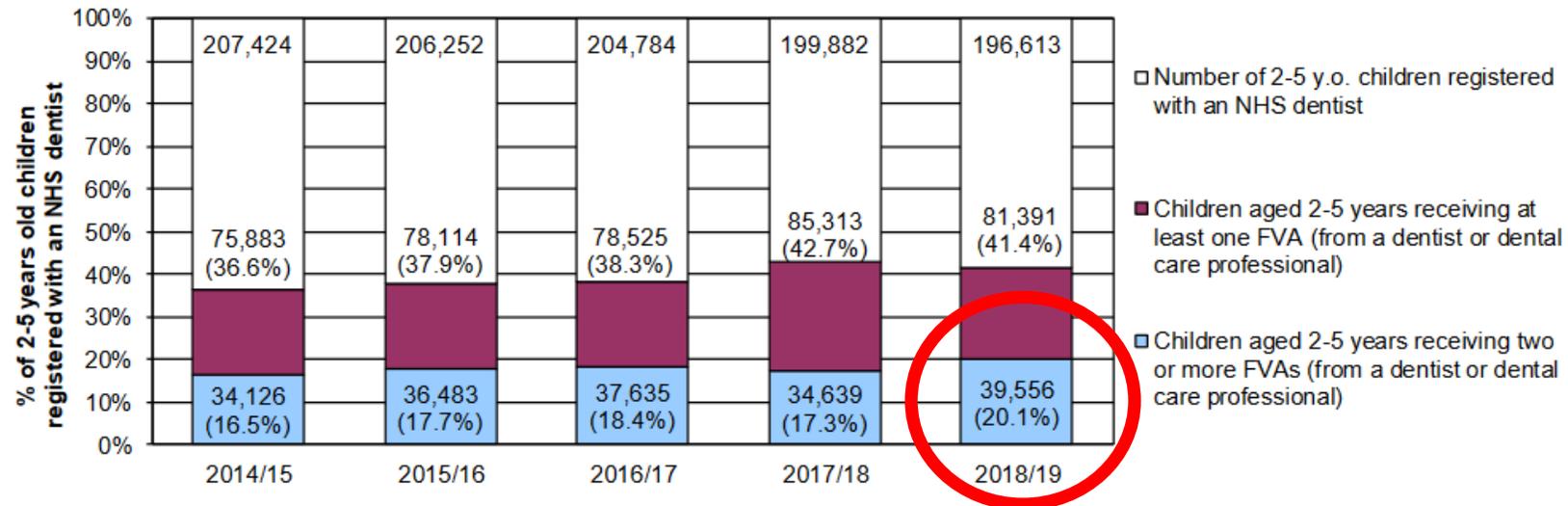
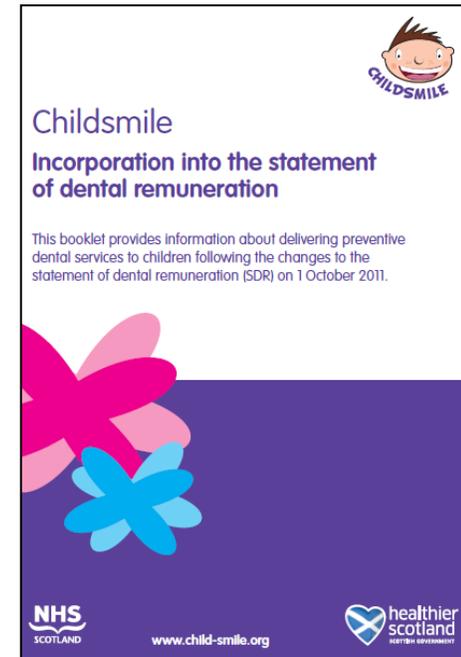


Figure 21: Proportion of 2-5 year old children registered with an NHS dentist receiving at least one FVA or two or more FVAs – financial year



FACTORS project

- Can dentists apply this 'systems approach' to Quality Improvement in preventive care?
 - Would this potentially add any value?
 - What about other areas of practice?
 - What would be needed for sustainability?



Participants

- Remunerated for two hours research participation activity
- 45 GDPs
 - Online survey
 - 14 Interviewed
 - One dyadic interview
- 11 Boards; fair spread

Gender			Length of service				
Male	Female	Total	≤5 years	6-15 years	21-35 years	Missing data	Total
16 (36%)	29 (64%)	45	8 (18%)	14 (31%)	4 (9%)	19 (42%)	45

SIMD Quintiles (2016)	
Quintile	Number of Practices
1	10 (22%)
2	17 (38%)
3	10 (22%)
4	6 (13%)
5	2 (4%)
Total	45 100%

The FACTORS Toolkit

FACTORS Toolkit

The FACTORS Toolkit consists of four sections:

1. [Introduction to Human Factors](#)
2. [Guide to the Systems Approach](#)
3. [Fluoride Varnish Example](#)
4. [Systems Thinking Exercise](#)

Introduction to Human Factors

Guide to the Systems Approach

Fluoride Varnish Example

Systems Thinking Exercise

You can find links to further help and material throughout – just look for the browser sign...



Click here to see guide timings for working through the Toolkit and filling in the survey...



A simple 'resilient systems' model

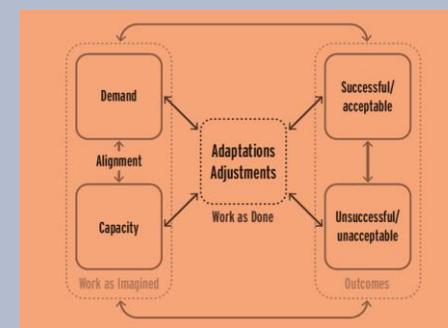
The idea of resilient health care has three main assertions:

1. Health care work is **complex and difficult**, despite what may be planned for or prescribed in guidance (we call the latter 'work as imagined'). There are **variable conditions to cope with**, including multiple difficulties with demand and capacity (we call these 'misalignments')
2. Individuals, teams and organisations thus have to **adapt flexibly** to these

conditions to achieve good outcomes (we call this adjusting to conditions 'work as done'); failure to adapt is a major driver for unacceptable outcomes

3. Improvement comes from addressing demand/capacity issues and/or supporting flexible adaptation; this is the idea of **making care processes resilient** so that they function reliably and optimise outcomes

You can read more about our model of resilient health care here...



Question prompts

- What are the **key tasks**?
- What are **people trying to achieve**?
- What are the **demand/capacity issues** ('misalignments') and difficulties in the system, that make these tasks difficult (and why)?
- **How is success achieved** in everyday work?
- What **adaptations and adjustments** are necessary (or could be made) to improve key tasks?



Question prompts

Once you have made system misalignments explicit, the key is to focus on **enhancing the ability of the system to achieve successful outcomes.**

- How have past difficulties been overcome? What was **the response that made a difference?**
- **How good are we at learning** from what went well or otherwise?

- What does **good coordinated care** feel/look like?
- What adjustments are made in **anticipation of varying demands?**
- What **opportunities** exist (e.g. through teamwork, environment, technology, training, procedure) to ensure good care is sustained?, what aspects of monitoring/supervision, **oversight and information gathering**- are useful and why?



Worksheet D

Ideas for System Improvement

...

Here, outline ways to improve your system

Lastly, use the box below to outline some ideas for addressing misalignments and improving the system. Think in terms of reducing demand, increasing capacity, or supporting flexible adaptation and adjustment to make key tasks more resilient to pressures.

Tip: remember resilient organisations are good at monitoring; good at responding to changes to work conditions; anticipating issues in advance; coordinating multiple tasks at once; and learning from what goes right and what goes wrong

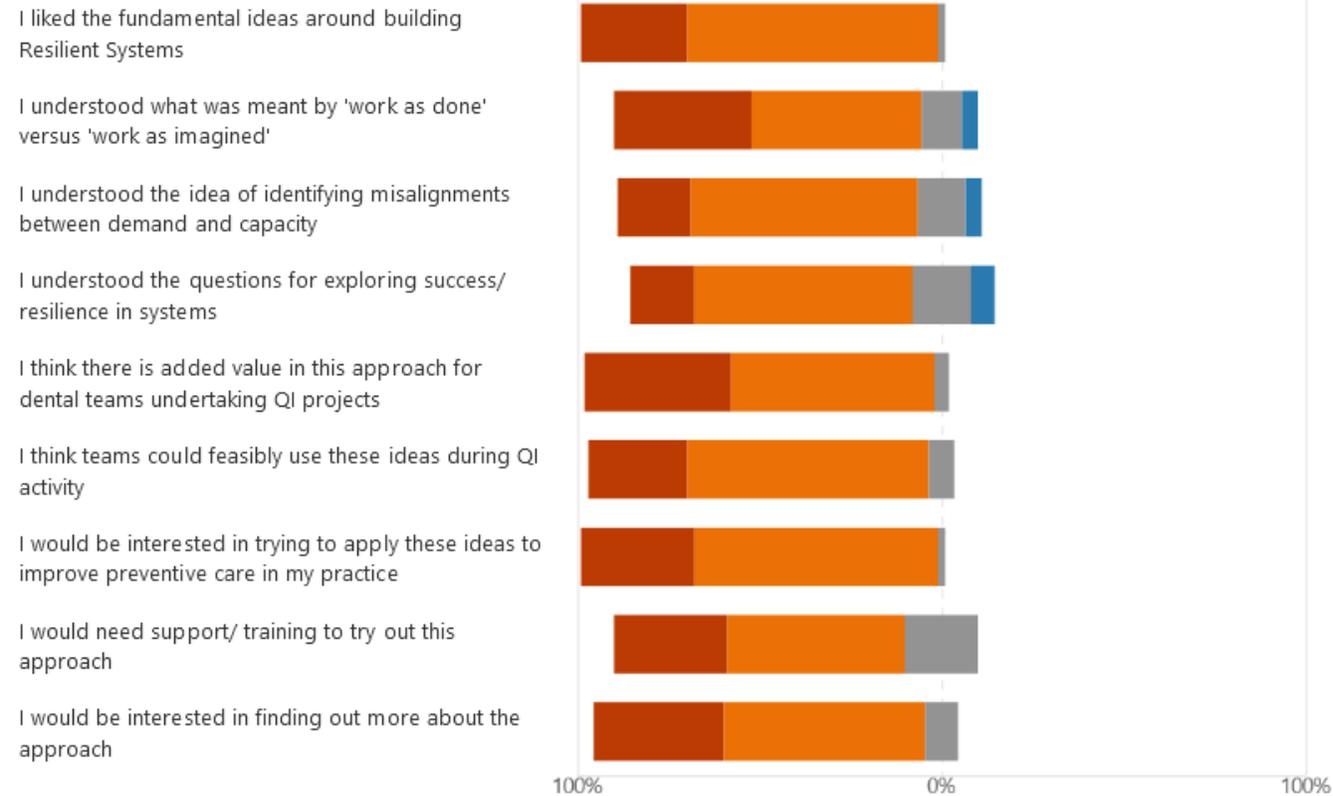
Examples: can you better anticipate pressure and match capacity to demand; do you have early warning signs and rehearsed responses; can you adapt/flex staff, space, equipment as necessary; are there design or technology solutions that could help; how well does the team work together e.g. do they have a shared understanding of goals; do the same things go wrong repeatedly- do you have time to reflect, review and revise; how do you record good practice e.g. successful adaptation; do you have any spare capacity that could be utilised/repurposed- e.g. in the dental team, physical environment, more efficient/timely process, involving patients; are your processes or procedures unwieldy, confusing or outdated and could benefit from review; etc...

NOTE: YOU CAN RIGHT CLICK AND SAVE THE WORKSHEET PAGES AS WEB PAGES IF YOU WISH TO REVISIT THEM OFFLINE

14. Thinking about Section 2 as a whole, please say how much you agree or otherwise with the following statements about the Resilient Systems approach to Quality Improvement...

[More Details](#)

■ Strongly Agree ■ Agree ■ Not sure ■ Disagree ■ Strongly Disagree



31. Please say how much you agree with these statements on integrating this type of systems thinking in Quality Improvement (QI) projects...

[More Details](#)

Strongly agree Agree Not sure Disagree Strongly disagree



Fissure sealant example

WAYS TO IMPROVE THE SYSTEM

Design processes for optimising patient attendance for preventative care; **flexible with appointment time**, but also from the outset **ensuring advantageous times** for families with children at school, multiple siblings etc.;

Common preventative goals based on up to date guidelines [...] increasing **efficient delivery** which will in return increase practice capacity and revenue;

Organisational- is all equipment present to allow **smooth transition** throughout procedure? are materials present and adequate?

WAYS TO IMPROVE THE SYSTEM

Staff training- Increase staff confidence and enjoyment, reduce stress; clear definition of staff roles, however, **flexibility on who can deliver** these on a day to day basis; staff training to be practice wide rather than solely individual;

Review of success critical- placement- clinical technique, patient engagement and cooperation



Selected quotes



As an individual who is quite new to [this], this toolkit has greatly improved my understanding and provided **a new skill to develop and hopefully utilise** in future projects, ultimately improving our dental care overall.



Liked the toolkit and **it has a lot of potential**

Selected quotes

I think the toolkit will be of **great value** to all clinicians in practice

a very different way of thinking for me but seems like a **good inclusive approach to thinking** and planning

I like the idea of **implementing this kind of toolkit nationally** and incorporating it into CPD as having all dentists on board would make things easier.

Selected quotes



It would be beneficial to have more simplified information as a reference/aide memoir. Worked examples are extremely useful, otherwise there is **a lot of new jargon to understand and no way of relating to it.**

[provide more] **clinical examples** most useful to my mind!



As with the majority of our work in dentistry, there is not one individual solely responsible for the delivery of care. [...] **this really enforced the holistic nature of our approach.** Therefore I feel that a **team-based discussion** involving both clinical staff, administrative staff and even patient/parent or guardian feedback is the only way to **fully identify misalignments and support a resilient system.**



The **harsh reality** of owning a dental practice is making a profit. We try and provide the best care for our patient however we need to pay for materials and staff, so **remuneration needs to reflect this. Toolkits and systems are all very well** but if we make a loss on running a childsmile clinic then it is not viable for a business to run them.

Selected quotes

- **It is easy to get preoccupied by a single element** with respects to returning routine healthcare during the COVID crisis. **Applying the approaches discussed allows a practice to think more broadly** about the return. Hopefully this will reduce unexpected hurdles and also allow the team to understand **the importance of flexibility and adaptability** rather than fearing it. **The resilience aspect also stands out for me** as it is inevitable we will have to **monitor, improve and secure systems due to the unpredictability of the current climate.**

References

- Anderson, J. E. and [Ross, A.](#) (2020) [Improving Quality Through Resilient Systems: the CARE-QI Handbook](#). International Ergonomics Association 21st Triennial Congress (IEA 2021), Vancouver, BC, Canada, 13-18 Jun 2021. (Accepted for Publication)
- [Ross, A.J.](#) , [Sherriff, A.](#) , Young, L., Freeman, R. and [Macpherson, L.M.D.](#) (2019) [Human Factors Science for Implementing and Evaluating Dental Public Health Interventions](#). 24th Congress of the European Association of Dental Public Health, Ghent, Belgium, 12-14 Sep 2019. S18. (doi:[10.1922/CDH_EAPDAbstracts2019](#))
- [Developing a Co-designed Human Factors Toolkit to Support Application of Preventive Treatment to Children Attending General Dental Practice in Scotland](#). 14th EAPD Congress, Lugano, Switzerland, 20-23 Jun 2018.
- [Ross, A.](#) , [Sherriff, A.](#) , [Kidd, J.](#), [Gnich, W.](#), Anderson, J.E., [Deas, L.](#) and [Macpherson, L.](#) (2018) [A systems approach using the functional resonance analysis method to support fluoride varnish application for children attending general dental practice](#). *Applied Ergonomics*, 68, pp. 294-303. (doi: [10.1016/j.apergo.2017.12.005](#)) (PMID:[29409648](#))
- [Ross, A.](#) , [Kidd, J.](#), [Gnich, W.](#), [Sherriff, A.](#) , [Deas, L.](#), [Rhouma, O.](#) and [Macpherson, L.](#) (2017) [A Systems Analysis of Fluoride Varnish Application in General Dental Practice in Scotland using the Functional Resonance Analysis Method](#). 64th ORCA Congress, Oslo, 5-8 July 2017. p. 366. (doi:[10.1159/000471777](#))



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Thank you
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