Childsmile, 10 Year Review: how can we facilitate further improvements in child oral health in Scotland?

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Presentation Outline: Scene Setting

- Background
- Childsmile programme
- Published outcomes
- Questions for future strategy development
  - Explored throughout the day
Childsmile

Childsmile is a national programme designed to improve the oral health of children in Scotland and reduce inequalities both in dental health and access to dental services.
Background

- Childsmile commenced as pilots in 2006/7
- Integrated programme: 2011
- Evaluation integral component; theory-based approach with logic model development
Background

- Strategies and activity to address ECC at global level
  - Learn from others

- New Scottish Government Oral Health Improvement Plan due to be published

- 10 year review of programme
  - Findings from Childsmile and other programmes
  - Identify ways to further improve child oral health and the programme, with a focus on health inequalities
Health Improvement Approaches

- Evidence-based
- Common risk factor approach
- Community engagement
- Multi-agency working
- Proportionate universalism

Watt RG. Community Dent Oral Epidemiol 2007; 35: 1–11
Theory Based Approach

Integrated Childsmile Logic Model (Core, Practice, Nursery & School)

Activities

Core toothbrushing programme

Awareness raising, marketing, communications, and engagement (26)

Awareness raising, OH pack(s) provided to all children @ 1, 3, 4 & 6

All nurseries (LA & private) implement daily supervised brushing programme

All primaries in most deprived SIMD quintiles implement daily supervised brushing programme (P1 & P2)

HVAs/PHNs routinely link all newborns to childsmile

Enhanced home/community visits from DSHW for targeted families

Targeted families linked to community health improvement activity via DSHW

Tailored OH advice (0-3) [from DSHW & practices] & clinical prevention (FPV) from 2 years via primary care dental services

Twice yearly FV applications for children in targeted schools & nurseries

Fissure sealant programme

Follow up of children not regularly attending PCDS

Multi disciplinary working among wider health prof & DSH, collaborative working across NHSS/education

CS Pathway developed & linked with existing dental & child health systems

Recruitment, training & ongoing CPO, audit of practice

Financial incentives for GDPs

CS Monitoring & Evaluation (Implementation & dissemination of learning to programme & wider OH/Public Health community)

Long-term outcomes

Potential secondary outcomes: improved toothbrushing & reduced sugar intake in families (parent/siblings), (1a) improved general health in children/wider population (1b)

Interim outcomes

All children in Scotland are supported to protect/improve their OH

Increased knowledge, motivations & skills in families to improve children’s OH

Increased (habituation of) toothbrushing

Greater % of children registered & attending dental services with appropriate fees for need

Reduced barriers to engaging with OH services (reduced apathy/dental anxiety)

Good OH practice is embedded throughout the population

Increased % of eligible children in receipt of FV fissure sealants

Reduced consumption (frequency of consumption) of sugar in foods & drinks

Improved OH and OHQOL in children in Scotland (maintained into adulthood)

Reduced dental decay in all children in Scotland

Reduced inequalities in OH from birth to later life (reduced dental decay in children reading in SIMD 3-5)

Reduced inequalities in uptake of OH services & OH treatment for children in Scotland

Example model for illustration (Actual model set available on request)

Key:

DSH-Dental Health Services
DSHW- Dental Health Support Worker
EDDN- Extended Duties Dental Nurse
FV- Fluoride varnish
Fz- Frequency
GDP- General Dental Practitioner
M & E Monitoring & Evaluation
OH- Oral Health
OHQOL- Oral Health Related Quality of Life
PDSS- Primary Care Dental Service
PHN- Public Health Nurse
SIMD- Scottish Index of Multiple Deprivation

* Costs to the NHS may increase in the short term as need is identified prior to preventative behaviour being embedded.

** 60% of 3 and 4 year old children in each SIMD quintile to receive at least two applications of FV per year by March 2013.
Childsmile Integrated Programme
Childsmile Integrated Programme

Supervised Toothbrushing
- Nursery: universal
- School: targeted
- Making sure that young children brush regularly with a fluoride toothpaste

FVA in Nursery and School
- Targeted
- Preventive dental care delivered in the nursery and school setting by mobile clinical teams

Practice & Community
- Community support, and oral health promotion and clinical caries prevention delivered by the dental team

www.child-smile.org
Childsmile incorporated in NHS Primary Care payment system, 2011

- Oral health improvement advice
  - Demonstrate and observe hands-on brushing instruction
  - Tailored advice on diet and nutrition
  - Action plan

- Fluoride varnish
  - For children from 2 years, apply varnish 2 times per year
Childsmile Practice and Community

Health Visitor / Public Health Nurse

Primary Care Dental Practice

Dental Health Support Worker

Non-dental Local Community / Third Sector Organisations and Services

www.child-smile.org
Outcomes to-date
Trends in the proportion of children with no obvious decay experience and mean $d_3mft/D_3MFT$ in the P1/P7 population in Scotland

Primary 1

Primary 7

ISD NDIP Reports, 2016 & 2017
Mean $d_3mft$ for 5-year-olds in Scotland in relation to commencement of nursery toothbrushing

Weighted Pearson Correlation

-0.64 (-0.86 to -0.16) $p=0.011$

Cost of nursery tooth-brushing programme and costs / expected savings resulting from actual and anticipated dental treatments

Anopa Y, McMahon AD, Conway DI, Ball GE, McIntosh E, Macpherson LMD. PLOS ONE 2015. DOI:10.1371/journal.pone.0136211
## SII and Significant Caries Index scores for P1 children in Scotland; 1998-2016

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*ISD NDIP Database*

*Blair Yl et al, PLoS ONE 8(3):e58593, 2013; ISD, NDIP Reports*
Investigation of oral health of “looked after children” in Scotland using linkage of health and local authority data

- ‘Looked after children' are defined as those in the care of their local authority
  - Supervised but at home / friends or family
  - Foster care or potential adopters
  - Residential care

- Population-wide study to examine the oral health of LAC and their use of dental and dental GA services compared with the general child population

- National demonstration project
  - Utilised linkage of national administrative data sources
LAC Group (10,924) vs non-LAC (622,280)

**Conclusion:** Looked after children are more likely to have dental treatment needs and less likely to access dental services even when accounting for sociodemographic factors.

McMahon AD et al. Archives of Disease in Childhood 2017;0:1–5. doi:10.1136/archdischild-2016-312389.
Questions

• How can oral health improvement activities identified in logic model be further optimised?
  – Process of referral from HV to DHSW
  – DHSW work
    • home support
    • linking families to general dental practice
    • linking to and provision of support to local community groups
  – How can rates of FVA in GDS be improved

• What is the added benefit of FVA in nursery / school setting over and above other elements of Childsmile?
Questions

• How can data linkage analyses add to our understanding of the programme?

• What can we learn from other programmes?

• What can be recommended from evidence base in relation to integrated upstream and midstream approaches from CRF NCD perspective?

• What should be the research-led, evidence-based strategy for the future direction of Childsmile?
Acknowledgements

- NHS Boards
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- NHS Health Scotland
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