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Dental Public Health in Action

IDEA tool: Establishing a prioritisation matrix for oral health improvement interventions

Heather Raison[1], Helen Parsley[2], Emma Hall-Scullin[2], Yvonne Dailey[2] and Mary Cronin[3]

[1]*Institute of Population Health, University of Liverpool, UK;* [2]*Healthcare Public Health Directorate, NHS England North West, UK;* [3]*Public Health, Knowsley Local Authority, UK*

Initial impetus for action: Oral health is not equitably distributed. More deprived areas experience appreciably worse oral health outcomes. Oral health improvement programmes in Local Authorities (LA) seek to reduce these inequalities but have diminished in recent years following the COVID-19 pandemic. LAs have also endured funding cuts to public health budgets, placing a greater emphasis on the need for establishing a clear prioritisation matrix for oral health improvement interventions. ***Solution***: A prioritisation matrix that considered both the importance and do-ability of oral health improvement interventions was developed. Both are composite measures. The importance comprised evidence of benefit, impact on inequalities, alignment with national/local priorities and cost-effectiveness of the intervention. The do-ability considered the available support from stakeholders, building/equipment requirements, workforce issues and investment funding. A working group was necessary to inform the do-ability aspect of the prioritisation matrix. Scores were assigned to each criterion, the sum of the scores informed whether the intervention was eliminated, aspirational or implemented based on predetermined thresholds. Outcome: The prioritisation matrix ensured a transparent and systematic approach for intervention selection, which reflected local resources and priorities. Moreover, this tool should help ensure the most effective, equitable, practical and sustainable interventions are chosen having the greatest impact on improving oral health outcomes.

Keywords: *oral health, inequalities, oral health improvement, early interventions*

Initial impetus for action

The COVID-19 pandemic not only saw a disruption in the delivery of dental services, but also cessation of almost all oral health improvement activity across the United Kingdom (Daly & Black, 2020; Shah *et al*., 2020). A regional scoping review was conducted in Northwest England to understand the current levels of commissioned oral health improvement activity. This revealed considerable post-COVID-19 reduction in activity across all areas, alongside diminished oral health specific budgets.

In addition to the reduced activity, the recent oral health survey of five-year-old children demonstrated the continued burden of poor oral health across England, with a persistent inequality towards those with low socio-economic status (Office for Health Improvement & Disparities, 2023). The survey highlighted the continued need to invest into the oral health of children and young people (CYP), with wide variation in both prevalence and severity of dentinal decay by geographical area. Children living in the most deprived areas of the country were almost 3 times as likely to have experience of dentinal decay (35.1%) as those living in the least deprived areas (13.5%). There were also disparities in the prevalence of experience of dentinal decay by ethnic group, which was significantly higher in the other ethnic group (44.8%) and the Asian or Asian British ethnic group (37.87%). Furthermore, there is also growing attention to understanding how other vulnerable populations, such as socio-economic deprived populations, ethnic minority groups and Gypsy, Roma, Travellers and Boater communities, can improve their oral health through interventional work (OHID, 2022).

The Health and Social Care Act (2022) describes the statutory requirement of Local Authorities (LA) to *"provide or commission oral health promotion programmes to improve the health of the local population, to the extent that they consider appropriate in their areas"*. Public Health England (before being replaced by UK Health Security Agency and Office for Health Improvement and Disparities) published evidence-informed toolkits to assist LAs in their decision-making toward commissioning oral health improvement activities for both children and young people (Public Health England, 2014) and vulnerable older adults (Public Health England, 2018). However, the delivery of oral health improvements programmes sits within a much wider set of considerations. These include the constraints of financial budget and availability of resources (e.g., suitably trained workforce to deliver initiatives). Consideration to the sustainability of oral health improvement programmes is also important, particularly when considering the medium- to longer-term impact for oral health improvement activities (Singhi, 2012).

Correspondence to: Dr. Heather Raison. Email: mullinm@liverpool.ac.uk

Solution(s) suggested

Prioritising oral health improvement programmes within an organisation requires collaborative working across the system to ensure a holistic perspective of the system. To achieve this, a working group was formed of several different stakeholders, including individuals from the public health team (generic and dental), health improvement programme team, early years intervention team and early years' services (i.e., those delivering or commissioned to deliver early year services). This group of stakeholders could have been strengthened by including representatives involved in the wider determinants of health (e.g. voluntary sector, schools, social services, care homes, environmental health etc) who could have brought an "on the ground" perspective for the multi-criteria decision analysis.

Furthermore, multi-criteria decision analysis to prioritise work programmes is important due to the many competing conditions (e.g., practical and financial constraints) upon intervention delivery and maintenance (Baltussen & Niessen, 2006). To address this, the working group developed a standardised matrix to ensure that each intervention was reviewed in a reliable and valid way (Figure 1), by considering and scoring 1) the "importance" (i.e., the available evidence for certain interventions) and 2) the "do-ability" within the system in terms of resource constraints. It was agreed that equal weight should be given to the balance of "importance" against the "do-ability" of the intervention programme.

Within the "importance" of each intervention, the working group decided it was paramount to consider the evidence of benefit, impact on inequalities, local/national priorities and the cost effectiveness. This was in keeping within the commissioning toolkits from Public Health England (2014, 2018) and allowed each member of the working group to review the available evidence and any local/national policies important to oral health. Each domain had a maximum score of five with an overall total for the "importance" section of 20, with scores over 15 being considered important to complete.

The "do-ability" aspect of the matrix considered the support of stakeholders, building/equipment requirements, workforce issues and level of investment required to implement, deliver and sustain the interventions. Whilst this is not an exhaustive list, these factors were identified as the most pertinent. As with the "importance" component, each domain had a maximum score of five with an overall total for the "do-ability" section of 20. Scores over 15 were considered doable.

Alongside the scoring system, there was also documentation of the rationale for the score, given the local context. This documentation produced a meaningful narrative to give context and detail to the decisions made, based on the available evidence, resources, capacity known to the working group.

Finally, the "importance" and "do-ability" scores were summed to produce an overall score. This included 1) Do (importance (15+) and do-ability (15+), 2) Aspiration (importance (15+) and do-ability (<15) and 3) Eliminate (importance (<15) and do-ability (<15) (Table 1).

Actual outcome

The prioritisation matrix provided a tool for identifying oral health interventions that were both important (with an evidence-base) and feasible. The matrix allowed for a clear focus toward resource allocation that was specific to the local context. Moreover, it ensured all potential interventions were considered in conjunction with one another; allowing for identification of potential gaps in service provision. Furthermore, by completing this process with a working group, insights were gathered from multiple stakeholders within the system. All stakeholders involved were aware of the criteria under consideration and allowed for a structured approach to discussion. This process ensured silo working was avoided and led to the production of a transparent and accountable document to evidence reasoning towards the allocation of resources.

The completed prioritisation matrix and subsequent list of agreed interventions has now been used to form the basis for the procurement of oral health improvement interventions within the area. It is expected that this will ensure that local oral health improvement interventions will be established and maintained successfully to impact positively upon oral health.

Challenges addressed

The prioritisation matrix and accompanying document should be viewed as a "live" document, as the demands and pressures within the system changing with time. Whilst this tool ensured the allocation of resources to the most effective and "do-able" interventions, the prioritisation matrix could get "out-dated" over time. Therefore, there have been strong recommendations within the document to review in two years, when the pressures within the system can be reviewed.

A further challenge addressed was the ability of the working group to reach consensus on scoring within the "do-ability" aspect of the matrix. Ensuring that there was a safe space for all members of the working group to discuss their views, experiences and opinions was important, alongside the decision to take a majority vote on any disagreed scores helped to resolve any challenges and reach consensus.

Future implications

The prioritisation matrix has the potential for use across different organisations to help set strategic priorities for work programmes within existing constraints. Within oral health, this matrix could help formulate both local, regional and potentially national priorities. Outside the dental context, it could also be applied across the health system to help prioritise programmes, with a robust matrix to support multi-criteria decision analysis.

The ability to collaborate by engaging key stakeholders across the system, is also advantageous, as it allows for the early identification of issues relating to implementation and maintenance before commencing programmes of work. This collaborative approach also allows stakeholders to take some level of ownership for the programme, as they have been part of the consultation process for programme delivery. If constructed well, this should allow all stakeholders to have identified and shared their limitations to allow interventions to be achieved across the system.

a) **Effectiveness of oral health improvement programmes**

Score	Strength of evaluation and research evidence
5	Strong evidence of effectiveness
4	Sufficient evidence of effectiveness
3	Some evidence of effectiveness
2	Weak evidence of effectiveness
1	Inconclusive evidence of effectiveness / no effectiveness of effectiveness / evidence of effectiveness

Impact on inequalities

Score	Impact on equalities
5	Encouraging
4	Encouraging / uncertain
3	Uncertain
2	Uncertain / unlikely
1	Unlikely

Cost / resource considerations

Score	Cost / resource considerations
5	Good use of resources
4	Good use of resources / uncertain
3	Uncertain
2	Uncertain / costly
1	Costly

Local / national priorities

Score	Local / national priorities
5	Local & National priority
4	National priority
3	Local priority
2	Uncertain
1	Not a priority

b) **Support of key stakeholders**

Score	Support of key stakeholders
5	High level of support
4	Moderate level of support
3	Some support
2	Little support
1	No support

Building/equipment requirements involved in implementing the project

Score	Building / equipment issues
5	No significant issues
4	Few issues
3	Some issues
2	Moderate level of issues
1	Significant issues

Workforce issues attached to implementing and running the project

Score	Workforce considerations
5	Adequate workforce and workforce with the right skills available
4	Adequate workforce and workforce with the right skills available (with conditions)
3	Inadequate workforce but workforce with the required skills
2	Adequate workforce but no workforce with the required skills
1	Inadequate workforce and no workforce with the required skills

Investment to implement and continue running the project

Score	Investment considerations
5	Low level of investment required
4	Small level of investment required
3	Moderate level of investment required
2	High level of investment required
1	Very high level of investment required

Figure 1. Scoring system for oral health improvement interventions. The scoring system used for the prioritisation exercise was as follows: a) Scoring for Importance (0-5 for each question, max score 20), b) Scoring for Do-ability (0-5 for each question, max score 20)

**Based on Local Authorities improving oral health: commissioning better oral health for children and young people (PHE, 2014) AND Commissioning better oral health for vulnerable older people (PHE, 2018)*

Table 1. Prioritisation matrix for oral health improvement interventions for Children and Young People (CYP) and vulnerable older adults based on PHE commissioning toolkits (2018, 2014) [NOTE: numbers and overall action suggested within the table are for illustrative purposes only]

Programme	*Importance*					*Do-ability*					*Overall action**
	Evidence of benefit	*Impact on inequalities*	*Local/ national priorities*	*Cost effectiveness*	*Total*	*Support of stakeholders*	*Building / equipment issues*	*Workforce issues*	*Level of investment*	*Total*	
Children and Young people (CYP)											
Fluoridated milk in school settings	1	3	5	3	12	2	2	1	2	9	Eliminate
Targeted provision of toothbrush and toothpaste packs**	3	5	5	5	18	4	4	3	4	15	Do
Supervised toothbrushing in targeted childhood settings (early years)	5	4	5	4	18	4	3	4	4	15	Do
Oral health training of the wider professional workforce	3	4	5	5	17	4	5	5	4	18	Do
Targeted community F-varnish schemes	4	4	5	2	15	3	2	3	3	11	Aspiration
Healthy food and drink policies in childhood settings	3	5	5	5	18	5	3	3	3	14	Aspiration
Targeted peer support groups / peer oral health workers	4	5	5	5	19	5	4	3	2	14	Aspiration
Vulnerable older people											
Use of dentifrices containing 2,800 or 5,000 ppm F-	5	2	3	5	15	1	3	4	3	11	Aspiration
Dental professions applying F-varnish	4	4	5	2	15	3	2	3	3	11	Aspiration
Oral health training for care staff / carers	4	5	3	5	17	4	4	5	4	17	Do
Protocols for oral care in care settings	3	5	3	5	16	4	4	4	4	16	Do

**Via postal routes or through health visitors F- = fluoride

***Eliminate** Not important (<15) and not do-able (<15) **Aspiration** Important (15+) but not do-able (<15) **Do** Important (15+) and do-able (15+)

****TO BE REVIEWED BI-ANNUALLY**

Learning Points

Working in collaboration with important stakeholders across the system, acknowledging the evidence and balancing this against the "do-ability" of programmes, has resulted in the ability to plan the allocation of resources towards successful procurement strategically to improve of the oral health of vulnerable populations. The translatable nature of the matrix across the health system, means that it may have utility within other public health workstreams, resulting in a transparent and accountable document to prioritise different programmes of work.

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