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Oral health: local authority oral health improvement strategies

Qualitative evidence review of barriers and facilitators to implementing community-based oral health improvement programmes and interventions.

Evidence review for Centre for Public Health at NICE

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Contents

Glossary

Content analysis: is a method for studying the content of communication. Manifest content analysis refers to analysing what a person has definitely written or said. This is opposed to analysing latent content, which refers to what a person intended to say or write.

Deductive reasoning: as opposed to inductive reasoning, seeks to reach a logically certain conclusion.

Ethnography: is a qualitative research design aimed at exploring cultural phenomena.

Grounded theory: is a systematic social science methodology. Rather than beginning with a hypothesis or theory it seeks to generate one through a staged process. First data are collected, key points are then marked with a series of codes, which are grouped into similar concepts, and from those concepts categories are formed. The categories form the basis for creating a theory or hypothesis. Hence, the theory is built from the data upwards.

Inductive reasoning: as opposed to deductive reasoning, seeks to supply strong evidence, rather than absolute proof, for a conclusion.

Likert-scale: named after Rensis Likert, is a psychometric scale commonly used in questionnaires to measure positive or negative responses to a statement or statements.

Manifest content analysis: see content analysis.

Motivational interviewing: is a technique that explores and resolves ambivalence centring on motivational processes within the individual that facilitates change.

Q-methodology: is a research method used in psychology and social sciences to study people's subjectivity or view point. It uses Q-factor analysis to reduce many viewpoints into fewer "factors" that represent common ways of thinking.

Thematic analysis: is an analysis approach common in qualitative research. It concerns identifying, examining, and recording patterns or "themes" within data. It is often performed through a process of coding in 6 phases to create established and meaningful patterns. These phases are: familiarisation with data, generating initial codes, searching for themes among codes, reviewing themes, defining and naming themes, and producing a final report. It is synonymous with thematic content analysis.

Transtheoretical model (TTM): is a conceptual model of behaviour change including a core concept of “stages of change”, which are ordered categories along a continuum of motivational readiness to change a behaviour.

1 Executive Summary

1.1 Introduction

The National Institute of Health and Care Excellence (NICE) Centre for Public Health (CPH) has commissioned two evidence reviews to support the development of public health guidance for local authorities on community oral health promotion programmes.

The first review (reported separately), is a review of the effectiveness of community-based oral health improvement programmes and interventions. This report represents the second review: a qualitative review of barriers to and facilitators of implementing such programmes and interventions, including user and provider perspectives.

1.2 Methods

Review methods were based on the NICE manual: Methods for development of NICE public health guidance (third edition, 2012). Briefly, the steps in this review were:

- Identifying relevant studies by systematic searches of electronic literature databases, including grey literature and supplemental searches
- Selecting relevant studies against agreed inclusion/exclusion criteria
- Identifying a published model relevant to barriers and facilitators to implementation of community-based oral health promotion programmes or interventions
- Extracting data on study characteristics and assessing the quality of the included studies
- Coding evidence from included studies according to the selected framework
- Summarising findings and drafting evidence statements relating to the barriers to, and facilitators of, implementing oral health promotion programmes among the target populations.

1.3 Findings/evidence statements

Data was extracted from 26 studies and contributed to 16 themes in the final revised framework. Overall, there was a good fit between the original framework selected, and the data reviewed, as the framework required only small modifications to capture important barriers and facilitators reported in the literature under study (See Appendix I).

The themes described in the following evidence statements were all found to have the potential to act as barriers or facilitators to implementing community-based oral health improvement programmes and interventions.

Consequently, it may be beneficial to those wishing to implement a community oral health intervention or programme to systematically review the themes outlined in the framework, and discussed in each of the evidence statements. In doing so readers might consider the potential local impact of each theme on their prospective intervention or programme, including considering possible mitigations to any identified barriers.

Evidence statement 1: funding.

Evidence from 8 studies showed that funding can act as either a barrier or a facilitator to the implementation of oral health interventions or programmes.

Four studies (1 [+] UK[1], 2 [-] US[2,3] and 1 [-] Australian[4]) reported consistent views that adequate and sustainable funding facilitated the implementation and development of their respective programmes, whereas 3 studies (1 [++] UK[5], 1 [+] Republic of Ireland[6] and 1 [-] US[7]) reported that a lack of funding and/or unsustainable funding had acted as a barrier, or potential barrier, to implementation.

The authors' of 1 (+) US[8] study noted that participants' did not identify funding as one of the barriers they encountered.

[1] Blenkinsopp et al. 2002 (+)
[2] Diamond et al. 2003 (-)
[3] Douglass et al. 2005 (-)
[4] Burchell et al. 2006 (-)
[5] Yusuf et al. 2012 (++)
[6] Owens 2011a (+)
[7] Wolfe and Huebner 2004 (-)
[8] Prokhorov et al. 2002 (+)

Evidence statement 2: policies.

Evidence from 4 studies showed that institutional, local and national polices can act as either barriers or facilitators to the implementation of oral health interventions or programmes.

Two studies (1 [-] US[1] and 1 [++] UK[2]) identified university funding and reward structures, and dental payment contracts, as specific policies that had acted as barriers to implementation. Both examples were linked to policies creating a lack of financial incentive to participate in community based oral health programmes. See Evidence Statement 1 for funding related barriers and facilitators. A third (-) Australian study[3] reported that institutionalising new oral health procedures had improved the professional practice of nurses involved in an early childhood oral health programme. A forth (++) UK study[4] reported differences of opinion on whether having local and national policies prioritising oral health had facilitated the incorporation of oral health into existing Healthy School programmes.

[1] Diamond et al. 2003 (-)
[2] Yusuf et al. 2012 (++)
[3] Maher et al. 2012 (-)
[4] Stokes et al. 2009 (++)

Evidence statement 3: perceived need for the intervention or programme.

Evidence from 8 studies showed that issues of perceived need can act as barriers to the implementation of oral health interventions and programmes. This theme had close links with perceived benefit, see Evidence Statement 4.

Five studies (3 [+] UK[1,2,3], 1 [-] UK[4] and 1 [++] UK[5]) reported barriers relating to how oral health was perceived as a low priority for many service users with complex and competing life pressures; for example, people who are homeless, or parents or carers of children with disabilities. The studies described how, against a backdrop of other, often more immediate and competing life problems, oral health was a low and non-urgent priority for many. This made it difficult for intervention staff to engage service users in issues of oral health. They suggested the aims and timing of oral health interventions should fully acknowledge the life circumstances of the service users in order to be realistic and appropriate.

Reluctance of some intervention staff to provide oral health advice to service users was also reported in 3 studies (1 [+] UK[6], 1 [-] Australia[7] and 1 [-] US[8]). Reasons were not explored in depth but included apprehension that the advice would not be well received, the feeling they were interfering with people's lives, or that they might alienate the service users.

Health professionals in 1 (++) UK study[5] reported a parental perception that their child was too young to go to the dentist was a barrier to registering some young children with a dentist; one of the aims of the oral health programme in question.

[1] Coles et al. 2012 (+)
[2] Owens 2011a (+)
[3] Owens 2011b (+)
[4] Macpherson et al. 2010 (-)
[5] Holme et al. 2009 (++)
[6] Blenkinsopp et al. 2002 (+)
[7] Maher et al. 2012 (-)
[8] Wolfe and Huebner 2004 (-)

Evidence statement 4: perceived benefit of the intervention or programme.

Evidence from 4 studies showed how a lack of perceived benefit among service users can act as a barrier to implementation, whereas a perceived benefit can facilitate implementation.

One (++) UK study[1] reported how a parental perception that oral health was important had acted as a facilitator for registering their children with a dentist, a specific aim of the oral health programme in question. This was consistent with evidence from 3 studies (1[++] UK[1] and 2 [+] UK[2,3]) reporting how a lack of perceived benefit meant oral health was a low priority for many service users relative to other competing life pressures. This had caused engagement barriers between staff and service users during implementation. The low prioritisation of oral health was consistent and closely linked to Evidence Statement 3 on perceived need.

Two studies (1[++] UK[1] and 1 [-] US[4]) reported additional barriers. One (++) UK study[1] reported some parents expected more than talking when attending preventative oral health sessions for their children. They reported they could not see the point of attending multiple sessions without anyone looking inside their child's mouth. The second, a (-) US study[4], reported that oral health care was not perceived to be beneficial by a group of pregnant Alaskan native women and that they did not perceive dental care during pregnancy to be safe. While not directly relevant to the UK it highlights the possibility that oral health may not necessarily be perceived as beneficial or understood to be safe in all communities.

[1] Holme et al. 2009 (++)
[2] Owens 2011a (+)
[3] Coles et al. 2012 (+)
[4] Riedy 2010 (-)

Evidence statement 5: self-efficacy.

Six studies provided evidence on barriers or facilitators relating to self-efficacy, described as the extent to which service providers feel they will be able to do what is expected within the oral health intervention or programme.

The views in 2 studies reported how a level of self-efficacy had acted as a facilitator to implementing their respective interventions (1 [+] UK[1] and 1 [+] US[2]). This included staff feeling more confident and empowered to introduce and tailor oral health advice to their service users as a result of the intervention training, and that increased self-efficacy was associated with engaging in more oral health related activities towards both parents and children.

The views expressed in 4 studies reported how a lack of self-efficacy amongst oral health intervention or programme staff could act as a barrier to implementation across a range of interventions (1 [-] Australia[3], 1 [+] Republic of Ireland[4], 1 [+] US[5] and 1 [+] UK[6]). Where described lack of self-efficacy was attributed to: role ambiguity; lacking knowledge about oral health; not feeling confident to deliver oral health promotion messages; and feeling it may cross professional boundaries to do so. One (+) UK study[6] reported that even personnel appropriately knowledgeable and skilled to deliver oral health advice may not feel willing or able to dispatch their skills if they don't feel their role enables them to, which may inhibit implementation.

Views expressed in this theme often had close links with self-proficiency, see Evidence Statement 6.

[1] Coles et al. 2012 (+)
[2] Kranz et al. 2011 (+)
[3] Maher et al. 2012 (-)
[4] Owens 2011a (+)
[5] Prokhorov et al. 2002 (+)
[6] Trubey and Chestnutt 2013 (+)

Evidence statement 6: self-proficiency.

Five studies provided evidence on barriers or facilitators relating to self-proficiency; described as the possession of the skills necessary for implementation. Issues of self-proficiency appeared closely aligned with self-efficacy, see Evidence Statement 5.

Two studies (1 [++] UK[1] and 1 [+] US[2]) reported compatible views on how intervention staff [1] or prospective intervention staff[2] felt a lack of skills, lack of expertise, or the feeling that they were not adequately prepared, had inhibited their ability to implement oral health programmes or interventions.

Three studies also provided evidence that increases in self-proficiency (1 [+] UK[3] and 1 [++] UK[4]), or reports of a wish to increase self-proficiency (1 [+] UK[5]), had facilitated participation in, or implementation of, oral health interventions or programmes.

All three examples were reported by staff who had an engagement function within the intervention such as: workers engaging homeless clients in oral health topics (1 [+] UK[3]); community programme champions engaging local communities to advocate and support a school programme (1 [++] UK[4]); or pharmacists opportunistically engaging members of the public in health advice (including oral health) in the pharmacy (1 [+] UK[5]).

[1] Stokes et al. 2009 (++)
[2] Prokhorov et al. 2002 (+)
[3] Coles et al. 2012 (+)
[4] Yusuf et al. 2012 (++)
[5] Blenkinsopp et al. 2002 (+)

Evidence statement 7: compatibility.

Eight studies provided evidence on barriers or facilitators related to the theme compatibility. This covered issues on how compatible the oral health intervention or programme was with existing services, or with the lives of the target service users.

One (++) UK study[1] identified 3 factors as facilitators to the programme implementation: home visits; the conceptual fit of the programme with existing dental services; and programme staff minimising disruption to school and nursery staff.

Seven studies identified barriers relating to a lack of compatibility and a number of similarities were apparent. Incompatibility between the intervention or programme aims and the target population were broadly identified by 4 studies (1 [+] UK[2], 1 [+] Republic of Ireland[3], 1 [+] US[4] and 1 [-] US[5]), distrust of outsiders by 2 (-) US studies[6,7] and excessive burden on the programme workforce by 1 (++) UK study[8]. A related issue, service user resistance or lack of interest, was also reported as a barrier to implementation in 2 studies (1 [+] US[4] and 1 [-] US[5]).

The views highlighting incompatibility between the lives of service users and intervention aims had clear links with those expressed in Evidence Statements 3 and 4 on perceived need and perceived benefits respectively..

[1] Holme et al. 2009 (++)
[2] Coles et al. 2012 (+)
[3] Owens 2011a (+)
[4] Prokhorov et al. 2002 (+)
[5] Wolfe and Huebner 2004 (-)
[6] Diamond et al. 2003 (-)
[7] Riedy 2010 (-)
[8] Yusuf et al. 2012 (++)

Evidence statement 8: adaptability and flexibility.

Seven studies provided evidence identifying implementation barriers and facilitators related to the theme adaptability and flexibility. This covered the extent to which programmes or interventions could or could not be modified to fit provider needs and preferences; existing organisational practices, and community needs, values and norms.

Five studies (1 [++] UK[1], 1 [+] UK[2], 1 [-] UK[3], 1 [-] US[4] and 1 [-] Australia[5]) provided evidence that intervention or programme flexibility or adaptability had acted as a facilitator to implementation. Examples included: seeking and gaining positive parental consent for school based activities involving children; tailoring oral health messages to service user's individual life circumstances; responding to over demand on the service; and having flexibility to adapt to different local community structures. One (+) UK study[6] reported a desire for more flexibility to potentially aid intervention implementation and 1 (+) UK study[7] presented mixed views on the need for flexibility between different staff groups within the intervention.

Overall, the evidence was broadly consistent in expressing how flexibility and adaptability had facilitated the implementation of the oral health interventions and programmes under study. The views expressed in this theme were closely related to those expressed under compatibility (Evidence Statement 7) and service user acceptability (Evidence Statement 16).

[1] Yusuf et al. 2012 (++)
[2] Coles et al. 2012 (+)
[3] Macpherson et al. 2010 (-)
[4] Diamond et al. 2003 (-)
[5] Burchell et al 2006 (-)
[6] Blenkinsopp et al. 2002 (+)
[7] Trubey and Chestnutt 2013 (+)

Evidence statement 9a: intervention resources; space, equipment and structural organisation of the programme.

Five studies provided evidence on barriers or facilitators related to the physical space, equipment and structural resources available for the intervention or programme during implementation.

One (-) UK study[1] reported staff experienced problems storing stocks of tooth brushing packs (toothpaste, a toothbrush and a health educational leaflet) and 1 (-) US study[2] reported a lack of garage space was a consistent problem implementing mobile dental van interventions.

Facilitators were reported in 3 studies (1 [++] UK[3], 1 [-] Northern Ireland[4], 1 [-] US[5]) and included: people with tetraplegia valuing teleconference equipment and an electrical toothbrush; school based staff indicating small class sizes, sufficient staff, and availability of sinks had made it easier to run supervised tooth brushing, and how a resource pack and assistance with the provision of fruits and vegetables would be useful in facilitating schools' continuation in healthy snack schemes.

[1] Blinkhorn 2008 (-)
[2] Douglass et al. 2005 (-)
[3] Holme et al. 2009 (++)
[4] O'Neill and O'Donnell 2003 (-)
[5] Yuen and Pope 2009 (-)

Evidence statement 9b: intervention resources; programme administration and time requirements.

Five studies provided evidence identifying barriers related to administrative burden or time.

Consistent evidence identifying barriers related to administrative burden was reported in 5 studies (2 [++] UK [1,2] , 2 [+] UK[3,4] and 1 [-] US[5]). Issues included: cumbersome activity monitoring forms, the need to revise, streamline or simplify paperwork once the programme was underway; inefficiencies in data entry and non-electronic data recording in school based programmes, and problems associated with asking parents to fill in and return consent forms for their children at regular intervals.

The (+) UK[4] study reported differences in views. A group consisting mainly of managerial staff perceived paper work was more of a problem than groups largely consisting of support workers and health educators who typically dealt with the forms day to day. The reasons for the difference were not explored further.

Oral health promoters involved in 1 (++) UK study[2] described feeling they needed more time (in itself a resource) to organise and implement a pilot programme which was delivered within just over a month with a lead time of just over 2 months. They also described how having protected time to devote to the pilot programme had helped their working practices.

[1] Yusuf et al. 2012 (++)
[2] Holme et al. 2009 (++)
[3] Coles et al. 2012 (+)
[4] Trubey and Chestnutt 2013 (+)
[5] Diamond et al. 2003 (-)

Evidence statement 9c: intervention resources; service user facing information.

Five studies provided evidence on the impact of service user facing intervention resources, such as information leaflets or educational materials, on the implementation of oral health interventions or programmes.

Two studies identified barriers relating to intervention resources not being tailored to the target audience (1 [+] Australian[1] and 1 [++] UK[2]). These included concerns that: information in leaflets may be overwhelming for people with low literacy; they were not in the service user's native language; they were too wordy and would benefit from more pictures; they didn't' have enough teeth-related information; the information was inappropriately targeted towards "middle class" families; there was a need to tailor information toward disadvantaged families, in particular, culturally and linguistically diverse groups; the language and content was too long, detailed and overwhelming; and that the information contained medical or dental jargon like "sealant or fluoride treatment" that wouldn't be understood. One (-) Australian study[3] reported staff didn't access some of the resources in other languages because they weren't aware they existed or the process of accessing and printing resources was difficult.

One (+) study in the Republic of Ireland and Northern Ireland[4] identified a progress chart as a consistently used and usefully perceived resource within a school based oral health programme.

Inconsistent views were reported in 1 (+) study based in the Republic of Ireland[5]. Parents, social workers and community nurses reported using information packs designed as part of the intervention, but their use was patchy. They identified pictures and diagrams as being particularly useful elements within the packs.

[1] Arora et al. 2012 (+)

[2] Yusuf et al. 2012 (++)

[3] Maher et al. 2012 (-)

[4] Dental Health Foundation 2007 (+)

[5] Owens 2011a (+)

Evidence statement 10: contact time.

Three studies reported barriers or facilitators related to the amount of contact time between the service provider and service user. The views expressed were generally brief and not explored in depth.

Not having enough contact time was reported as an implementation barrier in 2 UK studies (1 [+][1] and 1 [++][2]). This related to staff not having enough time with service users who were homeless to implement the intervention fully[1], and community programme champions not having enough time to explain details of an oral health programme to parents of children to be enrolled[2].

One (-) Australian study[3] that provided outreach services to people with mental health illness reported that adequate contact time had facilitated implementation by enabling dentists in the intervention sufficient time to overcome known barriers related to the complex needs of the service users - such as dental phobia, regular breaks during treatment sessions and unpredictable behaviour. The study authors' reported this protected time had been achieved through securing block funding. See Evidence Statement 1 for other funding related barriers and facilitators.

[1] Coles et al. 2012 (+)
[2] Yusuf et al. 2012 (++)
[3] Burchell et al 2006 (-)

Evidence statement 11a: general organisational factors; integration.

Four studies provided evidence on barriers or facilitators relating to the integration of a new oral health programme or intervention with existing practice or services.

One (-) Australian study[1] reported that integrating a dental outreach service targeting people with mental illness with existing health and support services was perceived to be important to the programme sustainability.

Conversely**,** multiple stakeholders from 1 (++) UK study[2] reported that implementing a pilot programme in schools had taken a large and unsustainable amount of their time and resource, which would need to be addressed if the programme was rolled out to more schools. One (-) US study[3] experienced problems recruiting Alaskan native women into a dental intervention. Problems were partly attributed to failing to integrate the recruitment process into the women's lives and normal decision making processes, which relied on family and community input.

Integration was not reported to be acting as a barrier to the incorporation of oral health into existing Early Head Start and Head Start programmes in 1 US (-) study[4].

[1] Burchell et al 2006 (-)
[2] Yusuf et al. 2012 (++)
[3] Riedy 2010 (-)
[4] Wolfe and Huebner 2004 (-)

Evidence statement 11b: general organisational factors; shared vision.

Five studies provided evidence on the impact of shared vision on implementing oral health interventions or programmes.

Two studies (1 [-] US[1] and 1 [++] UK[2]) reported that collaborating with organisations with a shared vision[1] or working with institutions (e.g. nurseries) with a positive attitude to oral care had helped the formation[1] and effective running[2] of the respective oral health programmes.

On the other hand, a lack of shared vision was reported as a potential barrier in 4 studies (1 [+] Republic of Ireland and Northern Ireland[3], 1 [++] UK[4], 1 [-] Australian study[5] and the same [++] UK[2] that reported facilitatory factors). Issues included: tensions between school staff and oral health promoters about integrating the programme into school life with minimal disruption[3]; problems rolling out a programme to child health professionals due to lack of time, confidence and perceived lack of willingness of others to receive information[5]; and having dual programme aims (universal care and targeted support), which was reported to be confusing to staff and parents and had the potential to cause stigma among those targeted[2].

Finally, a (++) UK study[4] reported differences in opinion from different stakeholders about whose responsibility it was to incorporate oral health promotion in Healthy Schools, suggesting a lack of shared vision. The degree to which oral health was incorporated into Healthy Schools was reported to be largely due to historical patterns of working, partnerships, resources and priorities.

[1] Diamond et al. 2003 (-)
[2] Holme et al. 2009 (++)
[3] Dental Health Foundation 2007 (+)
[4] Stokes et al. 2009 (++)
[5] Maher et al. 2012 (-)

Evidence statement 12a: specific practices and processes; coordination and collaboration.

Five studies provided evidence that internal and external coordination and collaboration, had facilitated oral health programme implementation (2 [++] UK[1,2], 1 [+] UK[5], 1 [-] UK[4] and 1 [-] US[5]) while 3 studies provided evidence of barriers related to lack of collaboration and coordination (2 [++] UK[1,6] and 1 [+] US[7]). One (+) UK study[8] reported views seemingly opposing the formation of links between schools and dental practices but there was inconsistency in the underlying study that called into question whether this was what respondents' actually meant.

Specific practices that facilitated implementation or were reported as necessary for implementation, included: effective collaboration between programme staff and stakeholders (e.g. teachers, dental providers, programme champions and parents)[1]; getting external expertise and input[2]; the provision of a list of local NHS dentists that accepted homeless service users[3]; collaborating with community dental service promoters[4]; and using parent teacher associations and community leaders to mobilise community support for an oral health care programme[5].

Specific practices that acted as barriers to implementation included: lack of clear professional roles and awareness of others' roles[6], lack of existing formal links between dental practices and schools[1], and problems finding a dentist that sees young children or accepts Medicaid in the US[7].

[1] Yusuf et al. 2012 (++)
[2] Stokes et al. 2009 (++)
[3] Coles et al. 2012 (+)
[4] Blinkhorn 2008 (-)
[5] Diamond et al. 2003 (-)
[6] Holme et al. 2009 (++)
[7] Kranz et al. 2011 (+)
[8] Trubey and Chestnutt 2013 (+)

Evidence statement 12b: specific practices and processes; communication, consent, and engagement.

Six studies (3 [++] UK[1,2,5], 1 [-] UK[3], 1 [-] US[4] and 1 [-] Australian[6]) provided evidence on barriers and facilitators on specific practices and processes. These were grouped into 3 categories of communication, parental consent, and engagement.

Lack of communication was reported as a barrier to implementation in 2 studies (both [++] UK[1,2]). Barriers included: lack of communication between different programme staff groups, managers and other professionals including teachers[1,2]; staff not being kept up-to-date with changes to advice or programme resources[1]; and short time scales for communication[2]. Facilitators included effective communication between different staff groups within the oral health programme[2].

Four studies (2 [++] UK[1,2], 1 [-] UK[3] and 1 [-] US[4]) provided consistent evidence that effective parental engagement and cooperation was needed to gain parental consent for their child to participate in school or nursery based programmes and this was essential for their successful implementation.

Three studies reported facilitating factors relating to engagement of people within, or external to, the oral health intervention or programme (2 [++] UK[1,5], and 1 [-] Australia[6]) and 1 (++) UK study[2] also reported barriers. Together they provided a consistent view that engaging key individuals (such as parents and teachers for school based programmes) was an important and often essential element of implementation.

[1] Holme et al. 2009 (++)
[2] Yusuf et al. 2012 (++)
[3] Macpherson et al. 2010 (-)
[4] Diamond et al. 2003 (-)
[5] Stokes et al. 2009 (++)
[6] Burchell et al 2006 (-)

Evidence statement 13: specific staffing considerations.

Eight studies provided evidence on barriers or facilitators relating to specific staffing considerations.

Three (1 [-] Australia[1], 1 [+] Republic of Ireland[2] and 1 [-] US[3]) reported problems recruiting and retaining key staff that impacted implementation including: uncompetitive pay[1]; embargos on recruitment[2]; and recruiting and retaining dentists. A fourth (1 [++] UK[4]) reported concerns about a lack of capacity in the extended duties dental nurse workforce to recruit from.

One (++) UK study[1] reported that a lack of clear roles and responsibilities amongst school staff had acted as a barrier to processing and obtaining consent from parents and engaging parents effectively. Barriers and facilitators related to gaining parental consent are also discussed in Evidence Statements 8, 9b, 11b 12b. Dentists' in 1 (++) UK study[1] reported barriers relating to time consuming non-computerised administrative duties when recording programme activity. Issues of administration are also reported in Evidence Statement 9b.

Specific staff members and staff roles within the intervention or programme team were identified as being important in facilitating implementation in 6 diverse studies (2 [++] UK[4,5], 1 [+] US[6] and 3 [-], 2 US[3,8] and 1 Australian[7]). Often more than one key staff role was highlighted within the same programme, particularly in the more complex programmes.

Multiple stakeholders in 1 (++) UK[4] study reported an overreliance on certain staff members or teams during the implementation of a pilot oral health programme that was not sustainable. They reported alternative staffing roles and responsibilities for day to day logistic delivery of the programme needed to be considered in the future.

[1] Burchell et al 2006 (-)
[2] Owens 2011a (+)
[3] Douglass et al. 2005 (-)
[4] Yusuf et al. 2012 (++)
[5] Holme et al. 2009 (++)

[6] Rajabiun et al. 2012 (+)

[7] Maher et al. 2012 (-)

[8] Diamond et al. 2003 (-)

Evidence statement 14: training.

Eight studies provided evidence on barriers or facilitators relating to training.

Six studies (all targeting under 5s) provided consistent evidence that training or elements of training had facilitated, or potentially facilitated, the implementation of the programme or intervention in some way (2 [++] UK[1,2], 1 [+] US[3] and 3 [-]; 1 UK[4], 1 US[5], and 1 Australia[6]). Consistent with this, 1 (+) US study[7] reported lack of training may have acted as a barrier to implementation. Two studies (1 [++] UK[2] and 1 [+] UK[8]) provided less clear views. One ([++] UK[2]) suggested that training could be extended to more people to improve the programme[2], while the second ([+] UK[8]) reported positive and negative feedback on the value of training received to implement the intervention[8].

Facilitatory elements included: providing training sessions for nursery staff to increase awareness of the importance of oral health[1], increased self-efficacy to deliver oral health interventions or programmes as a result of training[2,5,6], and increased oral health activity as a result of training[3].

Respondents in 1 (+) US study[7] reported a lack of training was a key barrier to delivering spit tobacco prevention programmes. Perhaps surprisingly, this included some staff specifically trained in the prevention of spit tobacco use. This counterintuitive view was not explored further in the study but highlights the possibility that people adequately trained may experience other barriers that stop them using their training and skills fully.

[1] Holme et al. 2009 (++)

[2] Yusuf et al. 2012 (++)

[3] Kranz et al. 2011 (+)

[4] Macpherson et al. 2010 (-)

[5] Wolfe and Huebner 2004 (-)

[6] Maher et al. 2012 (-)

[7] Prokhorov et al. 2002 (+)

[8] Blenkinsopp et al. 2002 (+)

Evidence statement 15: technical assistance.

Three studies provided evidence on barriers and facilitators related to technical assistance. This theme covered the combination of resources offered to providers once implementation begins; early monitoring and evaluation prompting retraining; and staff turnover and appropriate contingencies.

Evidence from 2 UK studies evaluating the same oral health programme (1 [++][1] and 1 [+][2]) reported how a lack of initial and on-going training and support had acted as a barrier to implementation. This caused confusion among staff about existing and planned programme changes as they were not kept up to date with developments. Some also reported struggling to maintain professional competence on an on-going basis through lack of training and support.

Evidence from 2 UK studies (1[+][2] and 1 [++][3]) reported how feedback on the initial implementation of the programme; feedback on training provision; and local problem solving efforts once the programme was underway, had led to suggestions for improvements to facilitate subsequent implementation. However, the studies did not report whether the suggestions were successful at facilitating subsequent implementation in practice, so should be interpreted cautiously.

[1] Holme et al. 2009 (++)

[2] Macpherson et al. 2010 (-)

[3] Yusuf et al. 2012 (++)

Evidence statement 16: service user views on acceptability.

Evidence from 4 studies (2 [++] UK[1,4] and 2 [+] US[2,3]) reported views on barriers or facilitators related to service user acceptability of the intervention or programme.

Facilitators

Three studies reported elements of service user acceptability that facilitated their interventions or programmes (1 [++] UK[1] and 2 [+] US[2,3]). All three reported how the friendliness of intervention staff had facilitated implementation in different ways. Each study also provided unique facilitating elements including: home visits by a dental support worker[1]; ease of service user participation[1]; and the provision of a friendly, accessible, available, comforting, knowledgeable and empathetic dental case manager[2,3].

Barriers

One (++) UK study[1] talked about a dental health support worker home visit element of a programme. It reported there was potential for stigma to be attached to letting professionals into one's home if there was a perception it was to monitor parental behaviour. This was a result of some associating the term support with social support and bad parenting. It was important that visits were seen by service users (parents or carers) as advice rather than parental monitoring.

One (++) UK[2] study asked parents whose children did not have fluoride varnish in a school programme to comment on the reasons. They included fears children with severe allergies would be at risk of an adverse reaction in an outreach setting (the school) and absence from school.

[1] Holme et al. 2009 (++)
[2] Lemay et al. 2012 (+)
[3] Rajabiun et al. 2012 (+)
[4] Yusuf et al. 2012 (++)

2 Introduction

Aims and objectives

The Department of Health has asked the National Institute for Health and Care Excellence (NICE) to develop public health guidance for local authorities on community oral health promotion programmes, in particular, for vulnerable groups at risk of poor oral health.

To support the development of this guidance, the NICE Centre for Public Health (CPH) has commissioned two evidence reviews:

1. A review of the effectiveness of community-based oral health improvement programmes and interventions.

2. A qualitative review of barriers and facilitators of implementing community-based oral health improvement programmes and interventions.

The reviews aim to address the following questions:

1. What are the most effective community-based programmes and interventions to promote, improve, and maintain the oral health of a local community?

2. What are the most effective approaches for groups of people who are disadvantaged and at high risk of poor oral health?

3. What are the barriers to, and facilitators of, implementing oral health promotion programmes and interventions (including user and provider perspectives)?

Questions 1 and 2 were covered in the first review, while question 3 is addressed in this qualitative review.

Background

Oral health across the UK has been steadily improving over the past several decades. This improvement is seen both in adults, more of whom are keeping their

teeth throughout their lives, and children, who have seen a reduction in tooth decay compared to children in previous decades (DH 2005).

Inequalities in oral health persist, however, and evidence-based oral health promotion and disease prevention programmes are needed in order to achieve further improvements and to reduce the persistent inequalities in oral health. The first evidence review assessed the effectiveness of community based programmes and interventions that aim to reduce and prevent dental and periodontal disease, oral cancer or other oral disease and promote oral health by activities that:

- Increase access to fluoride
- Improve oral hygiene
- Improve diet
- Increase access to dentists.

Implementation

The development of effective oral health programmes and interventions is necessary but insufficient to improve and maintain the oral health of a local population. The successful diffusion of evidence-based oral health promotion and prevention activities is required if such programmes and interventions are to be beneficial.

The process of introducing effective programmes in real-world settings may involve four main stages (Durlak and DuPre 2008, Simpson 2011):

- Dissemination – communicating the existence and potential benefits of a new programme or intervention with communities or providers, and training providers on the new activities.
- Adoption – planning activity involving the decision by local communities or organisations to implement a new programme, and a piloting or trial phase for the activities.
- Implementation – fitting the new programme or intervention into existing services, building on lessons learned during the pilot or trial phase.
- Sustainability/practice improvement – maintaining the inclusion of the programme or intervention in practice overtime.

Challenges faced during these stages can prevent a programme that was found to be effective during research from yielding benefits in a local community. Particular factors important for the successful translation of research based activities into real-world practice may include: programme fidelity, dosage and quality, participant responsiveness, programme differentiation or uniqueness from existing services, monitoring of control/comparator conditions and programme reach adaptation (Durlak and DuPre 2008).

3 Methods

Review methodology was based on the methods and processes outlined in the NICE manual: Methods for development of NICE public health guidance (third edition, 2012).

Briefly, the steps in this review were:

- Identifying relevant studies by systematic searches of electronic literature databases, including grey literature and supplemental searches
- Selecting relevant studies against inclusion criteria
- Identifying a published model relating to barriers and facilitators to implementation of community-based oral health promotion programmes or interventions
- Extracting data on study characteristics and assessing the quality of the included studies
- Coding evidence from included studies according to the selected framework
- Summarising findings and drafting evidence statements relating to the barriers to and facilitators of, implementing oral health promotion programmes among the target populations.

Further details are described in Sections 3.1 to 3.5.

3.1 Scope of the review

The evidence review covers provider and users views of the barriers and facilitators to implementation of community-based oral health promotion programmes and interventions that aim to:

- Increase access to fluoride. For example, by providing children with free fluoride toothpaste, providing fluoridated milk and fluoride drops in schools, or by dental nurses offering fluoride varnish applications in schools.
- Improve oral hygiene. For example, by offering supervised tooth brushing with fluoride toothpaste at childcare sites and schools, or running information and education campaigns about tooth-brushing.
- Improve diet. For example, by providing support to adopt a healthy diet or by offering nutritious food and drink in schools and workplaces.
- Increase access to dentists. For example through better coordination of dental health services with community health initiatives.

The review does not address views on barriers and facilitators to implementation of programmes related to water fluoridation; preventive information, advice or treatment provided by dental health practitioners to their patients; or oral health promotion programmes implemented in residential or care settings (e.g. nursing or residential care homes for children, young people, or adults).

Views will be assessed regarding community based programmes and interventions that address the oral health of the local population, with an additional emphasis on programmes or interventions aimed at those whose social circumstances or lifestyle place them at greater risk of poor oral health or make it difficult for them to access dental services. These at risk populations include, for example:

- Children aged five and under
- People on a low income
- Older people
- People who are homeless
- People who frequently change the location where they live (for example, traveller communities)
- People from some black and minority ethnic groups (for example, those of South Asian origin)
- People who chew tobacco
- People with mobility difficulties who live independently in the community

- People with a learning disability who live independently in the community

3.2 Systematic searches

A three stage search strategy was developed based on the 'Triple Plus' approach (Booth 2013). The search was developed to address both the effectiveness and qualitative reviews to ensure consistency across the reviews. The search strategy involved:

1. Bibliographic database searching (including MEDLINE)
2. Grey literature searching (e.g. using specialist databases such as EPPI Database of Promoting Health Effectiveness Reviews)
3. Supplemental search techniques (such as searching for: related articles, cited articles in included studies, and articles which cite the included studies)

This approach was selected as Booth's research shows that it is more efficient at capturing the relevant research than exhaustive searching of a large number of databases.

3.2.1 Stage 1 Bibliographic database searching

The stage 1 search strategy was developed in MEDLINE. We worked closely with the Centre for Public Health Excellence team at NICE, and used thorough testing to identify the optimal search (best balance between sensitivity and specificity) that was fit for purpose. The MEDLINE search strategy prioritised the use of key, broad, free text terms, as there is a risk that relevant records could be indexed in different ways with a wide variety of potential MeSH terms (or not indexed at all). We avoided limiting by population groups, programme names, interventions, settings, or study designs. However, we filtered out lower grades of evidence such as editorials and commentaries.

The following bibliographic databases were searched for articles published in English:

- MEDLINE and MEDLINE In Process (Ovid interface) Applied Social Science Index and Abstracts (Proquest interface)

- Social Policy & Practice Database (Ovid interface)
- HMIC (Ovid interface)
- Database of Abstracts of Reviews of Effects (Centre for Reviews and Dissemination interface)
- The EPPI Centre's public health effectiveness resource collection: includes both journal published and grey literature (Bibliomap + TRoPHI [Trials Register of Promoting Health Interventions] + DoPHER [Database of Promoting Health Effectiveness Reviews])

The MEDLINE search strategy (see Appendix A) was translated for the other databases, and adapted to take into account database size, coverage, available search facilities and available indexing terms. Search results were uploaded and managed in Reference Manager.

3.2.2 Stage 2 Grey literature searching

Reports produced by government, academics, business and industry, theses or dissertations in electronic formats, but which are not controlled by commercial publishers/journals (i.e. where publishing is not the primary activity of the producing body) were considered to be grey literature. This literature was searched in order to identify studies meeting review inclusion criteria that were not identified in traditional databases and are 'non-journal' papers.

The following sources were searched as part of Stage 2:

- A specific search on Google focussing on full text pdf papers and programme evaluations on particular population groups
- Browsing the key websites listed below and harvesting relevant records:
  - Centre for Disease Control http://www.cdc.gov/oralhealth/index.htm
  - World Health Organization http://www.who.int/oral_health/en/
  - British Society for Disability and Oral Health http://www.bsdh.org.uk/index.php
  - NICE Evidence Search http://www.evidence.nhs.uk/
  - Cochrane Oral Health Group

- http://onlinelibrary.wiley.com/o/cochrane/clabout/articles/ORAL/sect0-meta.html
- Oral Health Services Research Centre, University Dental School, Cork http://ohsrc.ucc.ie/html/publications.html
- State Government Victoria Evidence based oral health promotion resource http://docs.health.vic.gov.au/docs/doc/1A32DFB77FEFBE9CCA25789900125529/$FILE/Final%20Oral%20Health%20Resource%20May%202011%20web%20version.pdf

This list was selected from 40 key websites in the field as making potentially relevant documents freely available.

3.2.3 Stage 3 Supplemental searches

Supplemental search techniques were employed in order to gather further relevant evidence. Good quality and UK relevant papers were identified by the Research Analyst during the sifting process as key references, and used during the supplemental searches. Three citations were identified for the qualitative review supplemental searches. In addition, the output from the ten citations identified for the effectiveness review supplemental searches were sifted for inclusion in the qualitative review (see Appendix B for a list of key references).

Related Articles search

Using PubMed, for each key paper up to 50 related references were ranked by relevance and scanned to gather new, relevant material.

Citation tracking of key studies (a prospective technique to capture research which refers to key studies).

For each key paper, Google Scholar was searched to identify unique research which cited the key reference. Full citation lists were harvested in Word or by screenshot, and relevant, unique records were entered into the Reference Manager database.

Reference harvesting of key studies (a retrospective technique to capture research listed by key studies).

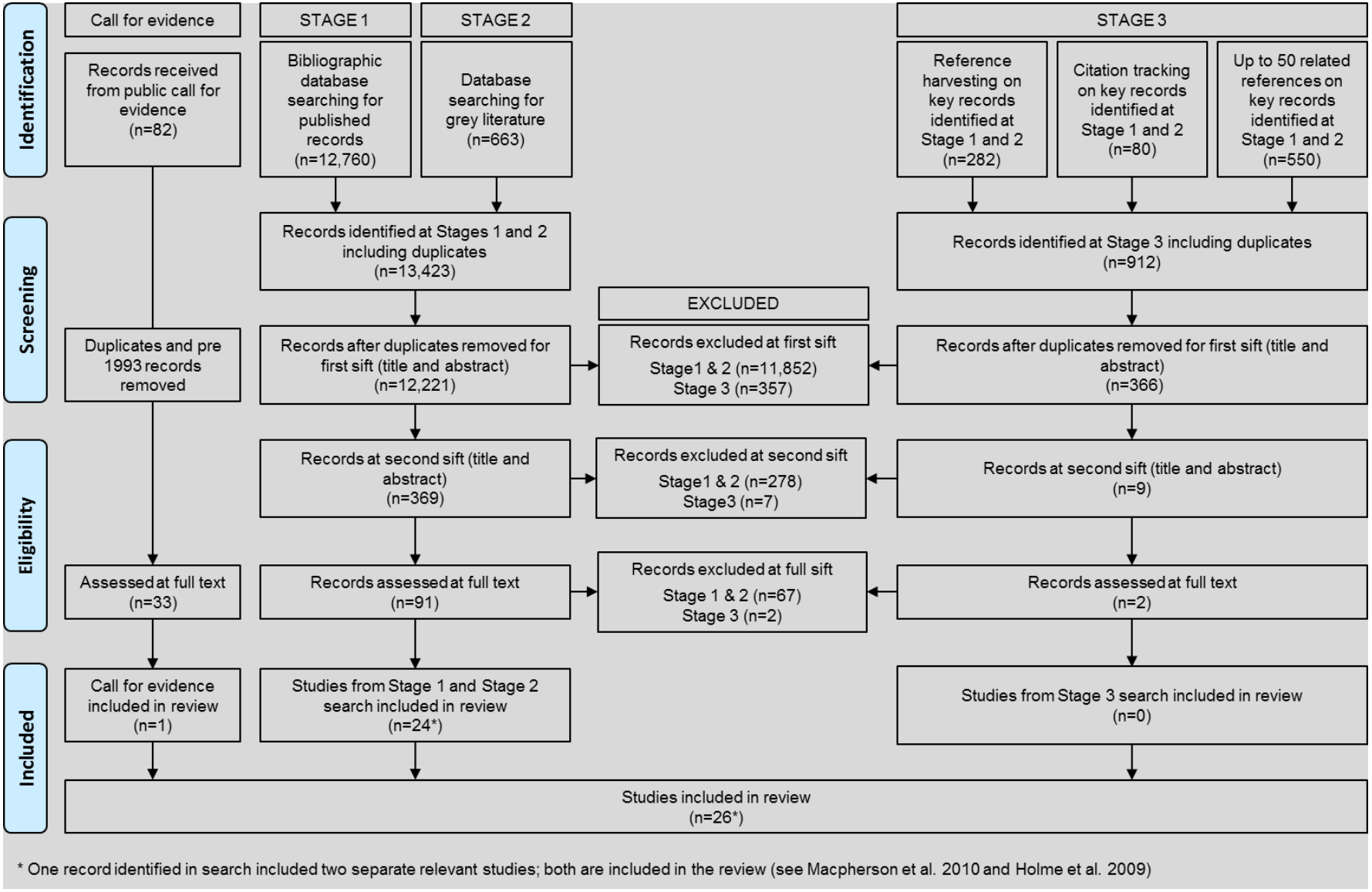
For each key paper, the reference list was scanned for new relevant records, which were added to the Reference Manager database.

3.3 Selecting studies for inclusion

Studies were evaluated for inclusion against the criteria listed in the sifting protocol (see Appendix C). Qualitative studies as well as quantitative surveys that focus on user and provider views of the barriers and facilitators to implementation and uptake of community based oral health promotion programmes were eligible for inclusion. The main reasons for exclusion were wrong study type and wrong programme or intervention type.

In total, 12,221 studies were identified during the search, of which 25 were included in the review. In addition, 85 citations were received as part of the call for evidence, of which one was included in the qualitative review. See Figure 1 for the flow of studies from search to inclusion.

Figure 1: PRISMA diagram for qualitative review search and sift strategy



* One record identified in search included two separate relevant studies; both are included in the review (see Macpherson et al. 2010 and Holme et al. 2009)

3.3.1 First pass appraisal

Evidence identified in the search was filtered at the title/abstract level by an Information Specialist to remove any clearly non-relevant material. The first pass appraisal encompassed both the effectiveness and qualitative reviews, as some studies and evaluations were considered relevant to both reviews at this stage. Studies were excluded on the basis of the following:

- Clearly non-relevant topics or populations or information (e.g. letters and animal studies)
- Non-relevant programme/intervention type (e.g. not community-based and no oral health promotion/disease prevention component).

A random sample of 300 citations was double sifted by a second Information Specialist. A kappa of 0.60 or greater was considered to reflect good interrater reliability.

The double sift at this stage resulted in agreement below the agreed kappa threshold (kappa=0.36). Further investigation revealed two main sources of disagreement:

1. Differences in the handling of records published between 1993 and 2002. The protocol wording originally referred to these records as both ‘provisionally included’ and ‘excluded’, which led one Information Specialist to include pre-2003 records at first sift and the second Information Specialist to exclude at first sift. It was agreed that these records should be provisionally excluded at this stage, and the protocol language was clarified to reflect this.

2. Differences in the handling of risk association studies that do not include the evaluation of a programme or intervention. A large subset of records reported the results of cross sectional or case control studies that identified subpopulations at increased risk for poor oral health. After discussion it was agreed that these studies should be excluded, and the protocol was updated to reflect this agreement.

When these two categories of disagreements were resolved, good interrater reliability was achieved (kappa=0.72). To ensure that the protocol adjustments sufficiently addressed the source of the disagreement, a further 100 random records

were double sifted, which resulted in high percentage agreement (91%), but a very low kappa (0.15). This was found to be due to a phenomenon known as the kappa paradox (Feinstein 1990), whereby high levels of agreement are achieved yet low kappa values result; this is due to a very high or very low prevalence of a given response. Researchers have recommended reporting additional statistics when faced with this paradox, in order that the source of the low kappa can be objectively interpreted (Kundel 2003). Following this recommendation, the following statistics were calculated for this additional sift, which suggest that the high agreement/low kappa value was due to low prevalence of included studies and high agreement on excluded studies:

- Proportion of observed agreement: 0.91
- Proportion of expected agreement: 0.89
- Proportion of positive agreement: 0.18
- Proportion of negative agreement: 0.95
- Prevalence index: -0.89
- Bias index: 0.07

This stage of screening acted as a “coarse filter” and erred on the side of inclusion, to avoid exclusion of studies that might be relevant. The filtered references were tagged in a Reference Manager database and passed on to a Research Analyst for second pass appraisal.

3.3.2 Second pass appraisal

A Health Research Analyst conducted a more detailed appraisal of the records tagged during the first sift. Relevant studies were selected for full text appraisal during this second title/abstract sift. The same exclusion criteria were applied as during the first sift, but to a more stringent level, and the reason for exclusion was recorded in the Reference Manager database at this stage (see Appendix D for excluded study bibliography).

Any queries regarding inclusion/exclusion were resolved by discussion with a second analyst. If it was unclear whether a study met inclusion/exclusion criteria the full text

was obtained. A 10% sample of citations were then double sifted by a second Health Research Analyst, which resulted in good interrater reliability (kappa=0.79).

This stage of screening acted as a finer filter than the first pass appraisal, but again erred on the side of inclusion if details were not included to allow decisions about the eligibility of the paper. Papers selected for full text appraisal were tagged in Reference Manager.

3.3.3 Full text appraisal

The full text papers were appraised by a Health Research Analyst. Information on reason for exclusion was recorded (see Appendix D for excluded study bibliography). A 10% sample of full texts were double screened at this stage, which resulted in good interrater reliability (kappa=0.80). Disagreements regarding inclusion/exclusion were resolved by discussion, with recourse to a third analyst if needed.

3.3.4 Provisional inclusion of studies

Studies published between 1993 and 2002 were provisionally excluded during the first stage of sifting, pending review of research published within the past decade. As the majority of these studies were relevant to school children and children under five, studies published between 1993 and 2002 were searched and sifted for relevance to other disadvantaged or high risk populations, as limited evidence on these groups was identified during the first stage of the review. These populations included, for example:

- People on a low income
- Older people
- People who are homeless
- People who frequently change the location where they live (for example, traveller communities)
- People from some black and minority ethnic groups (for example, those of South Asian origin)
- People who chew tobacco
- People with mobility difficulties who live independently in the community
- People with a learning disability and who live independently in the community.

3.4 Data extraction and quality appraisal

Data extraction and quality appraisal was carried out for all studies selected at full text using qualitative study quality checklists as provided in the NICE methods manual (NICE 2012). Study data and characteristics can be found in the evidence tables (see Appendix G). The overall quality ratings are as follows:

[++] All or most of the NICE checklist criteria have been fulfilled; where they have not been fulfilled the conclusions are very unlikely to alter.

[+] Some of the checklist criteria have been fulfilled, where they have not been fulfilled, or not adequately described, the conclusions are unlikely to alter.

[-] Few or no checklist criteria have been fulfilled and the conclusions are likely or very likely to alter.

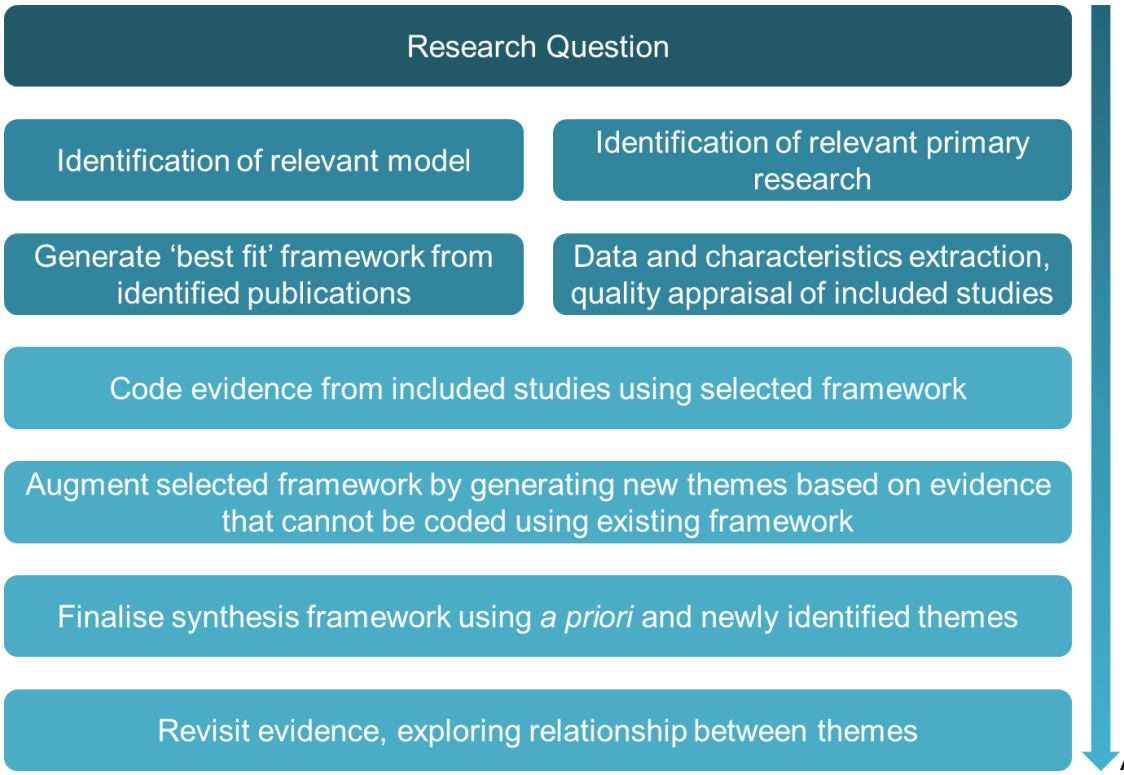
A 20% sample of included studies was double quality appraised by a second analyst with good interrater reliability (kappa=0.71); any disagreements were resolved by discussion.

3.5 Data analysis and synthesis

A ‘best fit’ framework synthesis approach was used to guide the qualitative evidence review. This approach, which is based upon framework analysis, was selected to synthesise the evidence, as it is particularly suited to systematically managing and analysing qualitative data for applied research on short timescales (Carroll 2011, Carroll 2013).

Best fit framework synthesis is deductive, as it involves the *a priori* identification of themes based on a relevant model or theory. These themes are then used as a framework against which to map qualitative data from included studies (Carroll 2011). The approach also has augmentive and inductive features, as data from the selected studies that is not codeable based on the *a priori* framework is used to generate new themes. The final framework is thus a combination of themes from the original model as well as those grounded in the analysed data (Carroll 2013). An overview of the steps of best fit framework synthesis is presented in Figure 2.

Figure 2 Best fit framework synthesis steps



Adapted from: Carroll C, Booth A, Leaviss J et al. "Best fit" framework synthesis: refining the method. BMC Med Res Methodol. 2013;13:37.

Research question, identification and appraisal of primary research

As outlined in Section 2, the synthesis included studies that focused on exploring the views of providers and users on the barriers and facilitators to implementation of community based oral health promotion programmes.

The methods for identification of relevant primary research are addressed in Sections 3.2 and 3.3, and information regarding data and characteristics extraction and quality appraisal of this primary research is presented in Section 3.4.

Identification and selection of a relevant framework

Potentially relevant frameworks or models were identified using a Google Scholar search and through consultation with a qualitative research expert and dental public health expert. Several parameters were considered when considering the relevance of identified frameworks to the review question, including:

- Did the model or framework address barriers to and facilitators of implementing health programmes or interventions (specifically health promotion programmes)?
- Was the framework or model relevant to oral health?
- Were the programmes being implemented considered community-based?
- Was the framework or model relevant to views (specifically user and provider views)?

Of the five citations considered most relevant to the current review (see Appendix H for references), two were assessed against selected primary studies to identify which would 'best fit' both the review question, aims and objectives, but also the evidence to be coded and synthesised (Simpson 2011, Durlak and DuPre 2008).

The two frameworks overlapped considerably, for instance, both emphasised the importance of provider perceptions that new programmes were relevant to practice or service needs, and that implementation be flexible to organisational needs and to context. Conceptually, important variation was seen between the two models: Simpson 2011 described a framework for the diffusion of new oral health promotion interventions in clinical settings (which does not represent a perfect fit with the current review's scope), while the Durlak and DuPre 2008 model related to promotion and prevention programmes across several fields and settings/organisations (including schools, health clinics and community centres) and focused specifically on the implementation stage of the process.

A piloting exercise was undertaken, whereby the two frameworks were considered against the body of identified primary studies. This exercise revealed that the data concerning user and provider views of the barriers to and facilitators of implementation of community-based oral health promotion programmes and interventions was best captured by the Durlak and DuPre 2008 model. That is, a greater proportion of the relevant views were codeable using the existing Durlak and DuPre framework, requiring less generation of novel themes in order to fully capture both the breadth and depth of data.

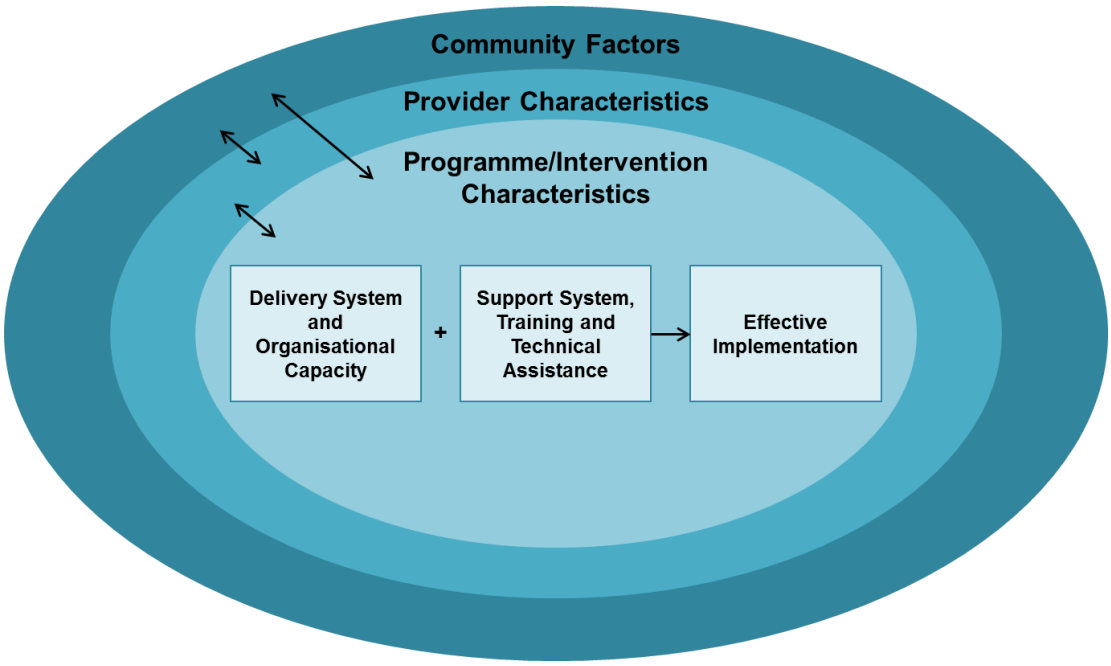
Thus, following the methods described in Carroll et al. 2011 and Carroll et al. 2013, the Durlak and Dupre 2008 model was selected, based on both its conceptual fit to

implementation of community-based promotion and prevention programmes, as well as its pragmatic fit to the data in the identified primary research, and was used to develop the initial coding frame.

Overview of selected *a priori* framework

The Durlak and DuPre 2008 model identifies variables that influence the implementation of prevention and health promotion programmes. These variables or factors are grouped into five main categories that interact with each other to influence effective programme implementation. The categories include: community factors, provider characteristics, programme/innovation characteristics, organisational capacity and support system characteristics (see Figure 3 for a conceptual overview of the model).

Figure 3 Conceptual framework - factors influencing effective implementation



Adapted from: Durlak JA, DuPre EP. Implementation matters: a review of research on the influence of implementation on programme outcomes and the factors affecting implementation. Am J Community Psychol. 2008; 41(3-4):327-50.

Table 1 lists the 15 influencing factors grouped within the overarching categories. These factors were used as the *a priori* frame against which evidence of user and provider views from included primary studies was coded.

Table 1: Variables that influence programme implementation

Conceptual category	Influencing factor (themes)
Community factors	Prevention theory and research system
	Politics
	Funding
	Policy
Provider factors	Perceived need for new programme or intervention
	Perceived benefits of new programme or intervention
	Self-efficacy
	Skill proficiency
Programme/intervention characteristics	Compatibility
	Adaptability/flexibility
Organisational capacity	General organisational factors
	Specific practices and processes
	Specific staffing considerations
Prevention support system	Training
	Technical assistance

Coding of included studies

This *a priori* frame was used to code data on user and provider views of the barriers of and facilitators to community-based oral health promotion programme or intervention implementation. This involved line by line coding of electronic versions of the selected studies using EPPI-Reviewer 4 software. The factors listed in the Appendix I under *a priori* coding frame were included as codes in EPPI-Reviewer 4. Data from all sections of the primary studies was considered eligible for coding (as opposed to data from the results section only), so long as the text was explicitly linked to or quoting the original data (e.g. from user or provider interview, focus groups or surveys).

Modification of framework based on identified evidence

Throughout the process the framework was modified as data related to barriers and/or facilitators were identified that could not be coded using the a priori framework. Combining the deductive “best fit” framework analysis with inductive thematic analysis resulted in a final framework based on iterative reflection and refinement. For example, Coles et al. 2012 reported how staff working with homeless people as part of the ‘Something to Smile About’ programme saw the short length of time they were in contact with the service users as a barrier to helping them transition through the behaviour change model they were attempting to implement. That is, the stages of change from the transtheoretical model of behaviour change: moving from pre-contemplation, to contemplation, to preparation, to action. This view was not codeable using the a priori framework, so a new theme “contact time” was added in order to fully capture the granularity of the available evidence.

The coding and modification steps resulted in the revised framework encompassing new themes identified in the evidence and not accounted for by the initial framework, as well as relevant themes from the *a priori* framework. Themes that originally appeared in the framework that were not supported by the identified evidence were removed from the final framework, for instance, the theme ‘politics’ in the conceptual category ‘community level factors’ was not included in the final framework as it was not identified as either a barrier or facilitator in the included primary studies.

The initial framework based on the model presented in Durlak and DuPre 2008, as well as the final modified framework, can be found in Appendix I.

Data synthesis based on final framework

Coded data was initially described using a brief narrative, grouped by final framework theme (See Appendix F). This data and narrative was then re-examined and grouped into barriers and facilitators, and reduced where possible into areas of similarities and differences within each theme. Some of these similarities followed the definitions within the theme descriptions, whereas others were newly emergent. These refined concepts were synthesised into narrative summaries and evidence statements for each theme (see Sections 4.2.1 to 4.7.1). Theme narrative summaries and evidence statements were further reviewed in order to identify broad

relationships across conceptual categories and themes and are outlined in the Evidence Statements and narrative summaries where applicable.

An overview of each included study is provided in Appendix E to provide contextual details on the intervention and methods qualitative data collection and analysis.

4 Summary of findings

4.1 Overview of included studies

Twenty six studies were included in this review. There was large variation in the methods of qualitative data collection, research question and analysis, as well as fundamental differences in oral health intervention type, delivery setting and target population that should be considered when interpreting the findings on barriers and facilitators to their implementation.

Key characteristics of the studies included in each of the themes are summarised in table form at the beginning of each theme results section (4.2.1 to 4.7.1). More detailed information describing the study aims; qualitative methods; limitations and applicability to the UK are described for each study in Appendix E.

Target population

Of the 26 included studies, 8 targeted their oral health interventions toward under 5s (5 targeted those from disadvantaged areas, and 1 targeted families on low incomes); 7 toward school children (2 targeted those from disadvantaged backgrounds); 7 toward people with complex needs; 1 toward homeless people; 1 toward indigenous native Alaskan people; 1 toward new mothers (from disadvantaged areas); 1 toward older persons (over the age of 55 years) and 1 toward the general population. One study (Yusuf et al 2012) targeted 3 to 7 year olds so was categorised as targeting both under 5s and school children. Hence, 27 target population categories resulted from the 26 studies.

Of the 7 studies categorized as targeting people with complex needs: 3 related to people living with HIV/AIDS; 2 closely related publications on the same intervention targeted children with disabilities; 1 study targeted adults with tetraplegia and 1

targeted people with mental health illness, described by the study authors as having complex oral health needs.

Intervention category

Twelve of the 26 included studies were categorised as complex interventions containing multi-component or multi-faceted approaches, e.g. oral health education and advice alongside signposting to services and provision of tooth brushes and tooth paste. A further 7 studies constituted mainly health education or advice; 4 aimed to improve access to mainstream dental care; 2 addressed common risk factors associated with poor oral health (e.g. diet) and 1 used supervised tooth brushing only. Other interventions used tooth brushing but contained numerous other elements so were categorised as complex interventions.

Country

Ten studies reported qualitative data from interventions based in the US; 4 in Australia; 4 in England; 3 in Scotland; 2 in the Republic of Ireland; 1 in Northern Ireland; 1 in both Northern Ireland and the Republic of Ireland, and 1 in Wales. Hence, 9 of the 26 studies were based exclusively in the UK.

Quality Assessment

The general quality of the qualitative methods behind the 26 included studies was medium to poor. Only 3 studies were rated [++] and of the remaining, 13 were rated [+] and 10 were rated [-]. This indicates that many of the studies may be subject to significant bias potentially influencing the views expressed. In many cases insufficient information on qualitative methods were described to adequately assess biases, reducing their quality rating overall.

Common limitations contributing to ratings of [+] or [-] as opposed to [++] were a lack of reporting of the qualitative methods in sufficient detail, and/or, inadequate description of the participant characteristics. There was also a consistent absence of discussion about how the views expressed were influenced by the participant's role and the other contextual factors. This lack of key information limited the ability to assess the reliability of the views expressed in the studies, and the ability to assess possible sources of bias.

Results structure

The main results (sections 4.2 to 4.7.1) are structured to match the 6 conceptual categories and subordinate themes in the final qualitative framework (See Appendix I). Studies contributing to each theme are grouped together and synthesised as concise evidence statements and narrative summaries that contain more detail. As the oral health interventions and programmes were diverse, key characteristics of studies contributing to each theme are given in a short summary table in each section for reference.

Supporting information containing quotes coded as barriers or facilitators for each study can be found in Appendix F. These study by study results were used as the foundation for writing the narrative summaries and evidence statements and also serve to show the explicit link between the text coded and the authors' interpretation of it for this review.

An overview of this results structure is given below:

- Conceptual category heading
- Theme heading
- Brief information about the theme description used to code and links to detailed supporting information containing quotes (Appendix F)
- Summary table of contributing studies (contains links to details of the individual study methods, Appendix E)
- Evidence statement
- Applicability to the UK
- Narrative summary

4.2 Community factors

This conceptual category contains the themes:

- Funding
- Polices

4.2.1 Funding

Eight studies reported views on barriers or facilitators relating to funding, which was described in the qualitative framework coding scheme as a necessary but insufficient factor that needs to be sufficient both in terms of money and time.

The contributing studies varied considerably in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 2 for reference.

Study by study results can be found in Appendix F, section 13.1.1.

Table 2 Summary of characteristics of studies contributing to the theme: funding.

Author Date	Quality score	Country	Target population	Intervention category	Study details
Blenkinsopp et al. 2002	+	England (UK)	General population	Health Education and/or Advice	See Appendix E Section 12.2
Burchell et al. 2006	-	Australia	Complex needs (Mental Health)	Complex Intervention	See Appendix E Section 12.4
Diamond et al. 2003	-	US	School children (dentally underserved communities)	Complex Intervention	See Appendix E Section 12.7
Douglass et al. 2005	-	US	School children	Improving access	See Appendix E Section 12.8
Owens 2011a	+	Republic of Ireland	Complex needs (children with disabilities)	Complex Intervention	See Appendix E Section 12.16
Prokhorov et al. 2002	+	US	School children	Health Education and/or Advice	See Appendix E Section 12.17
Wolfe and Huebner 2004	-	US	Under 5s	Complex Intervention	See Appendix E Section 12.22
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 1: funding.

Evidence from 8 studies showed that funding can act as either a barrier or a facilitator to the implementation of oral health interventions or programmes.

Four studies (1 [+] UK[1], 2 [-] US[2,3] and 1 [-] Australian[4]) reported consistent views that adequate and sustainable funding facilitated the implementation and development of their respective programmes, whereas 3 studies (1 [++] UK[5], 1 [+] Republic of Ireland[6] and 1 [-] US[7]) reported that a lack of funding and/or unsustainable funding had acted as a barrier, or potential barrier, to implementation.

The authors' of 1 (+) US[8] study noted that participants' did not identify funding as one of the barriers they encountered.

[1] Blenkinsopp et al. 2002 (+)
[2] Diamond et al. 2003 (-)
[3] Douglass et al. 2005 (-)
[4] Burchell et al. 2006 (-)
[5] Yusuf et al. 2012 (++)
[6] Owens 2011a (+)
[7] Wolfe and Huebner 2004 (-)
[8] Prokhorov et al. 2002 (+)

Applicability to the UK.

Just 2 of the 8 studies were based in the UK, the rest were based in the US, Republic of Ireland or Australia. These countries have different healthcare financing models to the UK, particularly the US, which limits their direct applicability to the UK on specific issues of funding. Nonetheless, the more general concepts, such as having a stable and sustainable funding base to facilitate programme implementation, are likely to be applicable in most healthcare settings, including the UK. The findings on spit tobacco (Prokhorov et al. 2002 [+] US) have some applicability to the UK; however, readers should consider the potential impact of differences in the user profiles and prevalence of split tobacco use between the UK and US. For example, the US study suggested spit tobacco use was most common

in some rural adolescent populations, whereas in the UK it has been reported that use is particularly prevalent in people in South Asian communities.

Narrative Summary

Eight studies reported barriers and facilitators related to funding. The studies varied considerably in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 3 for reference.

They included interventions targeting the general public (Blenkinsopp et al. 2002 [+] UK), school children (Prokhorov et al. 2002 [+] US and Douglass et al. 2005 [-] US), school children from dentally underserved communities (Diamond et al. 2003 [-] US), under 5s (Wolfe and Huebner 2004 [-] US), children with disabilities (Owens 2011a [+]), and people with mental health problems (Burchell et al 2006 [-] Australia). One study targeted both under 5s and school children from deprived areas (Yusuf et al. 2012 [++] UK).

Despite key differences described above, 4 studies presented a consistent view that adequate and sustainable funding aided the implementation of their respective interventions (Blenkinsopp et al. 2002 [+] UK, Burchell et al 2006 [-] Australia, Diamond et al. 2003 [-] US, and Douglass et al. 2005 [-] US).

The pharmacy intervention in the UK (Blenkinsopp et al. 2002 [+] UK) for example, reported how potential business opportunities were cited as motivating factors to participation, and that the pharmacists' were satisfied with the level of pay they received for delivering the intervention. Other studies highlighted the importance of developing a stable but flexible funding base in developing and expanding their oral health programmes, as well as paying key staff adequately to ensure their recruitment and retention, which was viewed as important to the stability and sustainability of some of the interventions.

A further 3 studies reported barriers or potential barriers related to lack of funding (Owens 2011a [+] Republic of Ireland, Wolfe and Huebner 2004 [-] US, Yusuf et al. 2012 [++] UK). However, it was noted in 1 study (Prokhorov et al. 2002 [+] US) that no US health-care professionals surveyed reported funding as a barrier to the

prospect of providing spit tobacco counselling to adolescents. Importantly, no intervention was implemented as part of this study so the views appear to represent a perception of potential barriers to implementation rather than those experienced.

Overall, the evidence provided a broadly consistent view that funding acted as a barrier to programme implementation when it was perceived to be inadequate, and was important as a facilitator when perceived as sufficient.

4.2.2 Policies

Four studies reported views on barriers or facilitators related to policies. This was described in the qualitative framework as relating to the institutionalisation of new procedures and practices, and providing administrative and financial infrastructure.

Key characteristics of the contributing studies are summarised in Table 3 for reference.

Study by study results can be found in Appendix F, section 13.1.2.

Table 3 Summary of characteristics of studies contributing to the theme: policies.

Author Date	Quality score	Country	Target population	Intervention category	Study details
Diamond et al. 2003	-	US	School children (dentally underserved communities)	Complex Intervention	See Appendix E Section 12.7
Maher et al. 2012	-	Australia	Under 5s	Complex Intervention	See Appendix E Section 12.13
Stokes et al. 2009	++	England (UK)	School children	Common risk factors	See Appendix E Section 12.20
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 2: policies.

Evidence from 4 studies showed that institutional, local and national polices can act as either barriers or facilitators to the implementation of oral health interventions or programmes.

Two studies (1 [-] US[1] and 1 [++] UK[2]) identified university funding and reward structures, and dental payment contracts, as specific policies that had acted as barriers to implementation. Both examples were linked to policies creating a lack of financial incentive to participate in community based oral health programmes. See Evidence Statement 1 for funding related barriers and facilitators. A third (-) Australian study[3] reported that institutionalising new oral health procedures had improved the professional practice of nurses involved in an early childhood oral health programme. A forth (++) UK study[4] reported differences of opinion on whether having local and national policies prioritising oral health had facilitated the incorporation of oral health into existing Healthy School programmes.

[1] Diamond et al. 2003 (-)
[2] Yusuf et al. 2012 (++)
[3] Maher et al. 2012 (-)
[4] Stokes et al. 2009 (++)

Applicability to the UK.

Two studies took place in the UK so were directly applicable to the UK setting. The remaining two were from the US and Australia. The Australian study reported specifically on how the New South Wales personal health record had helped institutionalise oral health practices for nurses. Readers should consider how applicable this is to the UK setting in light of potential differences in health check procedures and documents between Australia and the UK. The US study highlighted policy and reward structures in US universities as an issue. Readers should also consider how applicable this is to the UK setting given potential differences between the way US and UK universities are funded.

Narrative Summary

Four studies reported barrier or facilitators relating to policies. Key characteristics of the contributing studies are summarised in Table 3 for reference.

The studies targeted school children (Stokes et al. 2009 [++] England), school children from dentally underserved communities (Diamond et al. 2003 [-] US) and under 5s (Maher et al. 2012 [-] Australia). One study targeted both under 5s and school children from deprived areas (Yusuf et al. 2012 [++] England).

Barriers

Two studies (Diamond et al. 2003 [-] US, and Yusuf et al. 2012 [++] England) identified policies that acted as barriers to the implementation of their specific interventions.

The first concerned a reported lack of incentive in university structures and reward schemes to facilitate involvement in forming a network of community dental health services in a dentally underserved area in the US (Diamond et al. 2003 [-] US). This issue of university policy was interwoven with the issue of remuneration.

Dentists in the second study expressed the view that the current dental contract provides no financial incentive for dentists to participate in programmes like Keep Smiling and that the present system was target driven and there was a lot of pressure on most dental practices (Yusuf et al. 2012 [++] England). Again, issues of target driven policies and contracts were expressed alongside issues of remuneration.

The same study (Yusuf et al. 2012 [++] England) reported that introducing a protocol on the Keep Smiling programme would be beneficial to its implementation. This was a prospective suggestion so no retrospective assessment of its effectiveness took place. This suggestion was in response to the observation that the Keep Smiling programme was a new initiative in schools and the programme pilot evaluation had revealed considerable variation between schools in terms of staffing levels, structure and organisation.

Facilitators

Nurses from one Australian study (Maher et al. 2012 [-] Australia) reported how the incorporation of oral health checks into the New South Wales personal health record had enabled them to assume responsibility for oral health. They reported following this record during their regular child health checks so having oral health on it guided their professional practice. This appeared to be an effective way of institutionalising new oral health procedures.

Mixed views

Finally, one study (Stokes et al. 2009 [++] England) reported inconsistent views on whether having an awareness of national oral health policy acted as a barrier or facilitator to the incorporation of oral health into existing Healthy School programmes. Lack of awareness of national policy was reported as a potential barrier to the integration of oral health into Healthy Schools programmes by some. But, others reported they had integrated oral health without awareness of national policy. This suggested awareness of national policy may be acting as a barrier for some schools, but not all. The reasons for this difference were not further explored in the study itself.

4.3 Provider characteristics

This conceptual category contains the themes:

- Perceived need for innovation/new programme or intervention
- Perceived benefits of new programme or intervention
- Self-efficacy
- Self-proficiency

4.3.1 Perceived need for innovation, a new programme or intervention

Eight studies reported views on barriers or facilitators relating to perceived need for innovation, the new programme or intervention. This was described in the qualitative framework as covering the extent to which the new programme or intervention is relevant to local needs.

The contributing studies varied considerably in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 4 for reference.

Study by study results can be found in Appendix F, section 13.2.1.

Table 4 Summary of characteristics of studies contributing to the theme: Perceived need for innovation, a new programme or intervention

Author Date	Quality score	Country	Target population	Intervention category	Study details
Blenkinsopp et al. 2002	+	England (UK)	General population	Health Education and/or Advice	See Appendix E Section 12.2
Coles et al. 2012	+	Scotland (UK)	Homeless	Health Education and/or Advice	See Appendix E Section 12.5
Holme et al. 2009	++	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.9
Macpherson et al. 2010	-	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.12
Maher et al. 2012	-	Australia	Under 5s	Complex Intervention	See Appendix E Section 12.13
Owens 2011a	+	Republic of Ireland	Complex needs (children with disabilities)	Complex Intervention	See Appendix E Section 12.16
Wolfe and Huebner 2004	-	US	Under 5s	Complex Intervention	See Appendix E Section 12.22

Evidence statement 3: perceived need for the intervention or programme.

Evidence from 8 studies showed that issues of perceived need can act as barriers to the implementation of oral health interventions and programmes. This theme had close links with perceived benefit, see Evidence Statement 4.

Five studies (3 [+] UK[1,2,3], 1 [-] UK[4] and 1 [++] UK[5]) reported barriers relating to how oral health was perceived as a low priority for many service users with complex and competing life pressures; for example, people who are homeless, or parents or carers of children with disabilities. The studies described how, against a backdrop of other, often more immediate and competing life problems, oral health was a low and non-urgent priority for many. This made it difficult for intervention staff to engage service users in issues of oral health. They suggested the aims and timing of oral health interventions should fully acknowledge the life circumstances of the service users in order to be realistic and appropriate.

Reluctance of some intervention staff to provide oral health advice to service users was also reported in 3 studies (1 [+] UK[6], 1 [-] Australia[7] and 1 [-] US[8]). Reasons were not explored in depth but included apprehension that the advice would not be well received, the feeling they were interfering with people's lives, or that they might alienate the service users.

Health professionals in 1 (++) UK study[5] reported a parental perception that their child was too young to go to the dentist was a barrier to registering some young children with a dentist; one of the aims of the oral health programme in question.

[1] Coles et al. 2012 (+)
[2] Owens 2011a (+)
[3] Owens 2011b (+)
[4] Macpherson et al. 2010 (-)
[5] Holme et al. 2009 (++)
[6] Blenkinsopp et al. 2002 (+)
[7] Maher et al. 2012 (-)
[8] Wolfe and Huebner 2004 (-)

Applicability to UK

Six of the 8 studies included in this theme were directly applicable to the UK setting. The remaining 2 were based in Australia and the US. The issues raised by these studies were consistent with the UK studies and there did not appear to be any reason why the views expressed wouldn't be broadly applicable to the UK.

Narrative Summary

Eight studies reported views on barriers or facilitators relating to perceived need for innovation, the new programme or intervention, and whether the programme or intervention was relevant to local needs.

Consistent views were reported highlighting a perceived contrast between the priority given to oral health by the intervention and the priority given to oral health by the service users, who were often juggling multiple competing demands. A second consistent set of views emerged relating to a reluctance of some intervention staff to provide advice to some service users for fear of alienating them.

Priorities

Barriers to implementation related to how oral health was prioritised in the lives of some service users were expressed in 5 studies (Coles et al. 2012 [+] Scotland, Owens 2011a and Owens 2011b both [+] Republic of Ireland, Macpherson et al. 2010 [-] Scotland and Holme et al. 2009 [++] Scotland). They were expressed by those working with homeless people (Coles et al. 2012 [+] Scotland); professionals, parents and carers of children with disabilities (Owens 2011a [+] and Owens 2011b [+] Republic of Ireland) and staff involved in the elements of the Childsmile programme focussing on families from deprived neighbourhoods (Macpherson et al. 2010 [-] Scotland and Holme et al. 2009 [++] Scotland).

The views expressed highlighted how although there was a broad perceived need for the respective interventions amongst intervention staff, the reality of the day to day struggles of the service users often made it difficult to engage service users which inhibited the implementation of the intervention or programme. Specifically, barriers were reported in engaging service users in issues of oral health because they had

multiple competing and complex life pressures, which meant oral health might not be perceived as a priority.

Some health visitors in the Childsmile programme, for instance, voiced the view that there was a need to respect that oral health may be low in the list of priorities for some parents (Holme et al. 2009 [++] Scotland). Similarly, the competing daily responsibilities and pressures on parents or carers of children with disabilities were reported to reduce their ability to engage with oral health interventions (Owens 2011a [+] and Owens 2011b [+] Republic of Ireland).

In relation to homeless populations it was suggested that the person's life pressures need to be fully acknowledged (Coles et al. 2012 [+] Scotland). A view was expressed that an intervention may be very challenging to implement in situations of crisis, where competing demands may be at their highest, and may be more suited to a stage where a degree of stability has been reached.

Reluctance to engage

A second consistent set of views emerged relating to a reluctance of some intervention staff to provide advice to some service users. This was reported in 3 studies (Wolfe and Huebner 2004 [-] US, Blenkinsopp et al. 2002 [+] England and Maher et al. 2012 [-] Australia). As engagement was the whole or a key part of the implementation of some interventions, it represented a barrier. This was expressed in relation to the perception that opportunistic heath advice (including oral health advice) may not be welcomed by the general public using pharmacies (Blenkinsopp et al. 2002 [+] England), that giving anticipatory guidance to parents taking part in an early childhood oral health programme in Australia may alienate them (Maher et al. 2012 [-] Australia) and difficulties educating parents about oral health because of parents' personal health beliefs and priorities or parents' lack of interest (Wolfe and Huebner 2004 [-] US).

Child too young for dentist

Health professionals from 1 study reported parental perceptions that their child was too young to go to the dentist, and how this acted as a major barrier to registering

the child with a Childsmile dentist – a key objective of the programme (Holme et al. 2009 [++] Scotland). This suggested there was a lack of perceived need to engage with this part of the Childsmile programme inherent in some parents.

4.3.2 Perceived benefits of innovation/new programme or intervention

Four studies reported views on barriers or facilitators relating to the perceived benefits of the intervention, which was described in the qualitative framework as the extent to which the new programme will achieve benefits desired at the local level.

It was observed during coding that this was closely linked with views on the perceived need of innovation (Section 4.3.1). Key characteristics of the contributing studies are summarised in Table 5 for reference.

Study by study results can be found in Appendix F, section 13.2.2.

Table 5 Summary of characteristics of studies contributing to the theme: perceived benefit

Author Date	Quality score	Country	Target population	Intervention category	Study details
Coles et al. 2012	+	Scotland (UK)	Homeless	Health Education and/or Advice	See Appendix E Section 12.5
Holme et al. 2009	++	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.9
Owens 2011a	+	Republic of Ireland	Complex needs (children with disabilities)	Complex Intervention	See Appendix E Section 12.16
Riedy 2010	-	US	Indigenous (Alaskan)	Complex Intervention	See Appendix E Section 12.19

Evidence statement 4: perceived benefit of the intervention or programme.

Evidence from 4 studies showed how a lack of perceived benefit among service users can act as a barrier to implementation, whereas a perceived benefit can facilitate implementation.

One (++) UK study[1] reported how a parental perception that oral health was important had acted as a facilitator for registering their children with a dentist, a specific aim of the oral health programme in question. This was consistent with evidence from 3 studies (1[++] UK[1] and 2 [+] UK[2,3]) reporting how a lack of perceived benefit meant oral health was a low priority for many service users relative to other competing life pressures. This had caused engagement barriers between staff and service users during implementation. The low prioritisation of oral health was consistent and closely linked to Evidence Statement 3 on perceived need.

Two studies (1[++] UK[1] and 1 [-] US[4]) reported additional barriers. One (++) UK study[1] reported some parents expected more than talking when attending preventative oral health sessions for their children. They reported they could not see the point of attending multiple sessions without anyone looking inside their child's mouth. The second, a (-) US study[4], reported that oral health care was not perceived to be beneficial by a group of pregnant Alaskan native women and that they did not perceive dental care during pregnancy to be safe. While not directly relevant to the UK it highlights the possibility that oral health may not necessarily be perceived as beneficial or understood to be safe in all communities.

[1] Holme et al. 2009 (++)
[2] Owens 2011a (+)
[3] Coles et al. 2012 (+)
[4] Riedy 2010 (-)

Applicability to the UK

Three of the 4 contributing studies were from the UK so are directly applicable. The remaining study reported problems recruiting new mothers from a native Alaskan population as part of an academic study aiming to implement a community based oral health intervention. This has very limited direct applicability to the UK on specific

barriers encountered. However, the higher level concepts it highlighted may have some applicability to certain groups in the UK, so are worth consideration.

Narrative Summary

Four studies reported views on barriers or facilitators relating to perceived benefits of the oral health intervention or programme.

It was observed during coding that this theme was closely linked with views on the perceived need of innovation (Section 4.3.1) and contains overlap.

Key characteristics of the contributing studies are summarised in Table 5 for reference.

Facilitators

Just 1 study reported explicit facilitators relating to perceived benefit (Holme et al. 2009 [++] Scotland) and was related to the implementation of the Childsmile programme; a complex childhood oral health service targeting under 5s that combines both population based and targeted approaches towards the most vulnerable families.

Parental perception that oral health was important was reported to be a facilitator for registering their children with Childsmile practice – a key element of the wider Childsmile programme. Parental focus groups also revealed a consensus that most parents were willing to let their children take part in Childsmile Nursery and School if their child was willing and happy to take part themselves. Childsmile Nursery and School programmes deliver fluoride varnishing for children aged 3 and upwards who are identified as living in the most deprived areas. Trust and a positive perception of the staff involved in the Childsmile Nursery and School programme were also identified as specific facilitators for parental engagement with oral health.

Five additional studies (Blenkinsopp et al. 2002 [+] England, Blinkhorn 2008 [-] England, O'Neill and O'Donnell 2003 [-] Northern Ireland, Yuen and Pope 2009 [-] US and Yusuf et al. 2012 [++] England) reported consistent views that the intervention was perceived to be beneficial including 1 that was from a user perspective (Yuen and Pope 2009 [-] US). However, this was not explicitly specified

as a facilitator to implementing the intervention and in most cases related more closely to the perceived success of the intervention while underway. It is tempting to suggest that having a widespread buy-in and recognition that the intervention is beneficial is likely to have had some positive impact on the on-going implementation or continuation of the intervention or programme. However, this was not explored in any of the studies, so remains an assumption, and may not be accurate.

Only explicit facilitators are described here and in the evidence statement, for details of the other studies that may be of secondary relevance see Appendix F, section 13.2.2.

Barriers

Three studies reported barriers relating to perceived benefit, all related to a lack of perceived benefit for oral health relative to other life pressures (Coles et al. 2012 [+] Scotland, Owens 2011a [+] Republic of Ireland and Holme et al. 2009 [++] Scotland). Two studies reported additional barriers (Holme et al. 2009 [++] Scotland and Riedy 2010 [-] US)

Priorities

Consistent with the views contributing to section 4.3.1 a number of views indicated oral health might not be a priority for the clients targeted, which had acted as a barrier to engaging service users with oral health issues until after more immediate needs had been met. This appeared to be reported mainly for interventions or programmes targeting those with complex needs, including families of children with disabilities (Owens 2011a [+] Republic of Ireland) people working with homeless people (Coles et al. 2012 [+] Scotland) and vulnerable families (Holme et al. 2009 [++] Scotland).

Staff working with homeless people as part of the Something to Smile About programme in Scotland reported seeing oral health very much within a hierarchy of competing priorities in meeting their client's needs (Coles et al. 2012 [+] Scotland). Oral health was relatively low in their list of priorities and came only after other needs such as shelter, food and money had been met. Likewise, they reported that their

homeless clients weren't too interested in oral health until they experienced pain. Both dimensions appeared to have presented barriers to implementing the intervention, specifically, hindering the engagement of the homeless people in the topic of oral health when both service provider and service user did not perceive a benefit. Specific concerns were raised about the appropriateness of attempting to raise oral health issues at a time of crisis.

In the discussion section of Owens 2011a, the author reflected on views from parents and non-dental professional involved in the multi-sector complex intervention in children with disabilities (Owens 2011a [+] Republic of Ireland). This reported how providing an oral health pack containing information as part of the programme was likely to be low down in the day to day priorities of the families of the children with disabilities who have multiple daily competing demands. The author suggested that one-to-one approaches might be more engaging or effective, but made no guarantees, and these assumptions weren't tested.

Public health nurses and heath visitors involved in the Childsmile programme also reported how oral health may be low on the priority list for many vulnerable families they targeted (Holme et al. 2009 [++] Scotland). They expressed the view that having multiple consultations on prevention measures without necessarily looking in the child's mouth, and expecting families to go to the dentist more than was required, may be an unrealistic expectation of the programme as the benefits were not perceived by some parents.

Waning interest and parental expectation

Concerns were raised by health professionals involved in the Childsmile programme that parental interest in the programme may wane because they were expected to attend repeat sessions to talk about preventative measures (Holme et al. 2009 [++] Scotland). Dental health support workers reported a parental expectation that their child's mouth would be examined in some way during these visits and reported how some parents could not see the point of attending multiple sessions without anyone looking inside their child's mouth.

Considerations for indigenous populations

Oral health care was reported to not be perceived to be a benefit by pregnant Alaskan native women and dental care during pregnancy was not perceived to be safe (Riedy 2010 [-] US). This was described as a potential barrier to recruitment into the study which aimed to implement an oral health intervention involving the women. Although oral health issues related to pre-mastication in Alaskan natives are very specific, the more conceptual themes it highlighted may have some applicability to certain groups in the UK. For instance, it may be falsely taken for granted by programme designers that oral health will be perceived as beneficial or that the safety of receiving oral health treatment during pregnancy is, or will be understood, within all communities, which could act as a barrier to participation in the intervention.

4.3.3 Self-efficacy

Six studies reported views on barriers or facilitators relating to self-efficacy. This was described in the qualitative framework as the extent to which providers feel they will be able to do what is expected.

The contributing studies varied in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 6 for reference.

Study by study results can be found in Appendix F, section 13.2.3

Table 6 Summary of characteristics of studies contributing to the theme: self-efficacy

Author Date	Quality score	Country	Target population	Intervention category	Study details
Coles et al. 2012	+	Scotland (UK)	Homeless	Health Education and/or Advice	See Appendix E Section 12.5
Kranz et al. 2011	+	US	Under 5s (from low income families)	Health Education and/or Advice	See Appendix E Section 12.10
Maher et al. 2012	-	Australia	Under 5s	Complex Intervention	See Appendix E Section 12.13
Owens 2011a	+	Republic of Ireland	Complex needs (children with disabilities)	Complex Intervention	See Appendix E Section 12.16
Prokhorov et al. 2002	+	US	School children	Health Education and/or Advice	See Appendix E Section 12.17
Trubey and Chestnutt 2013	+	Wales (UK)	Under 5s (from deprived areas)	Supervised tooth brushing	See Appendix E Section 12.21

Evidence statement 5: self-efficacy.

Six studies provided evidence on barriers or facilitators relating to self-efficacy, described as the extent to which service providers feel they will be able to do what is expected within the oral health intervention or programme.

The views in 2 studies reported how a level of self-efficacy had acted as a facilitator to implementing their respective interventions (1 [+] UK[1] and 1 [+] US[2]). This included staff feeling more confident and empowered to introduce and tailor oral health advice to their service users as a result of the intervention training, and that increased self-efficacy was associated with engaging in more oral health related activities towards both parents and children.

The views expressed in 4 studies reported how a lack of self-efficacy amongst oral health intervention or programme staff could act as a barrier to implementation across a range of interventions (1 [-] Australia[3], 1 [+] Republic of Ireland[4], 1 [+] US[5] and 1 [+] UK[6]). Where described lack of self-efficacy was attributed to: role ambiguity; lacking knowledge about oral health; not feeling confident to deliver oral health promotion messages; and feeling it may cross professional boundaries to do so. One (+) UK study[6] reported that even personnel appropriately knowledgeable and skilled to deliver oral health advice may not feel willing or able to dispatch their skills if they don't feel their role enables them to, which may inhibit implementation.

Views expressed in this theme often had close links with self-proficiency, see Evidence Statement 6.

[1] Coles et al. 2012 (+)
[2] Kranz et al. 2011 (+)
[3] Maher et al. 2012 (-)
[4] Owens 2011a (+)
[5] Prokhorov et al. 2002 (+)
[6] Trubey and Chestnutt 2013 (+)

Applicability to the UK

Two of the 6 contributing studies were from the UK so are directly applicable. The remaining 4 were from Australia, the Republic of Ireland and 2 were from the US. The views expressed appear broadly transferable across multiple settings, and not necessarily restricted to the country or setting of origin, so appear indirectly applicable to the UK setting.

Narrative Summary

Six studies reported views on barriers or facilitators relating to self-efficacy. This was described in the qualitative framework as the extent to which providers feel they will be able to do what is expected.

The contributing studies varied in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 6 for reference.

The views expressed in 4 studies reported how a lack of self-efficacy amongst oral health intervention or programme staff could act as a barrier to implementation (Maher et al. 2012 [-] Australia, Owens 2011a [+] Republic of Ireland, Prokhorov et al. 2002 [+] US, and Trubey and Chestnutt 2013 [+] Wales) whereas the views in 2 studies reported how a level of self-efficacy had acted as a facilitator to implementing their respective interventions (Coles et al. 2012 [+] Scotland and Kranz et al. 2011 [+] US).

Facilitator: increases in self-efficacy

Staff working with homeless people as part of the Something to Smile About programme reported an increase in self-efficacy in relation to feeling more confident and empowered to introduce oral health and tailor advice to their service users as a result of the intervention (Coles et al. 2012 [+] Scotland). The programme provided a manual and motivational interviewing training to staff working with homeless people so they could offer tailored oral health advice and signpost to dental services. Therefore, increasing self-efficacy appeared to be an aim, an outcome, and a facilitator to implementing the intervention further.

Q-sort analysis of teachers views on oral health interventions or advice being given within Early Head Start (EHS) programmes in the US reported that increased self-efficacy was associated with increased oral health related activities towards both parents and children (Kranz et al. 2011 [+] US). Parental activities included how often teachers talked to parents about: (1) cleaning their child's teeth; (2) whether all the child's dental needs had been met; (3) food choices to promote good dental health; and (4) the parents' own dental health. Child activities included how often teachers (1) have children brush their own teeth; (2) brush children's teeth for them; (3) use toothpaste to brush; and (4) provide classroom education to children about dental health. Early Head Start is a federally funded programme designed to address the social, educational and health needs of pregnant women and children younger than three years of age in the US.

Barriers: lack of self-efficacy

Four studies reported elements of self-efficacy acting as barriers. These were relatively distinct although 2 studies reported self-efficacy problems related to elements of job role ambiguity (Trubey and Chestnutt 2013 [+] Wales and Owens 2011a [+] Republic of Ireland).

The authors of the evaluation report of The Early Childhood Oral Health (ECOH) Programme in New South Wales (NSW), Australia outlined barriers related to self-efficacy that were known to inhibit a model of shared care (central to the ECOH programme) and highlighted how the intervention had addressed these (Maher et al. 2012 [-] Australia). Known barriers reported were: health professionals of children lacking knowledge about oral health; not feeling confident to deliver oral health promotion messages; and feeling it may cross professional boundaries to do so. The ECOH Programme was reported to address these barriers in turn by providing clear and consistent oral health information through a guideline document and training, and legitimising the role of the child and family health nurses as oral health promoters by the re-inclusion of oral health information in the NSW Personal Health Record.

Self-efficacy was also identified as a barrier for some non-dental professionals taking part in a multi-sector complex oral health promotion intervention in children with disabilities (Owens 2011a [+] Republic of Ireland). The professionals reported being aware of the intervention but due to role ambiguity admitted to difficulties discussing oral health care on a one-to- one basis with parents and problems with referral for children with disabilities. This was consistent with the briefly reported view that non-school based educators' in the US felt less obliged to provide spit tobacco counselling than clinicians surveyed (Prokhorov et al. 2002 [+] US). This was not explored in further detail.

Counterintuitive views were expressed in the assessment of attitudes towards establishing a multi-component daily supervised school-based tooth brushing programme (Trubey and Chestnutt 2013 [+] Wales). Health educators taking part in the programme reported they felt it was not their role to talk about diet and nutrition and that they should just focus on the tooth brushing scheme. This was described as surprising by the authors because the oral health educators were well qualified to give advice. The study authors described how this apparent mismatch in skills and willingness to educate may be a reflection of what the educators thought the schools would realistically take on, rather than what they felt comfortable implementing. Nonetheless it highlights the possibility that even personnel appropriately skilled may not be able to implement their skills if they don't feel their role enables them to.

4.3.4 Self-proficiency

Five studies reported views on barriers or facilitators relating to self-proficiency. This was described in the qualitative framework as possession of the skills necessary for implementation and was closely related to self-efficacy, see section 4.3.3.

The contributing studies varied in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 7 for reference.

Study by study results can be found in Appendix F, section 13.2.4.

Table 7 Summary of characteristics of studies contributing to the theme: self-proficiency

Author Date	Quality score	Country	Target population	Intervention category	Study details
Blenkinsopp et al. 2002	+	England (UK)	General population	Health Education and/or Advice	See Appendix E Section 12.2
Coles et al. 2012	+	Scotland (UK)	Homeless	Health Education and/or Advice	See Appendix E Section 12.5
Prokhorov et al. 2002	+	US	School children	Health Education and/or Advice	See Appendix E Section 12.17
Stokes et al. 2009	++	England (UK)	School children	Common risk factors	See Appendix E Section 12.20
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 6: self-proficiency.

Five studies provided evidence on barriers or facilitators relating to self-proficiency; described as the possession of the skills necessary for implementation. Issues of self-proficiency appeared closely aligned with self-efficacy, see Evidence Statement 5.

Two studies (1 [++] UK[1] and 1 [+] US[2]) reported compatible views on how intervention staff [1] or prospective intervention staff[2] felt a lack of skills, lack of expertise, or the feeling that they were not adequately prepared, had inhibited their ability to implement oral health programmes or interventions.

Three studies also provided evidence that increases in self-proficiency (1 [+] UK[3] and 1 [++] UK[4]), or reports of a wish to increase self-proficiency (1 [+] UK[5]), had facilitated participation in, or implementation of, oral health interventions or programmes.

All three examples were reported by staff who had an engagement function within the intervention such as: workers engaging homeless clients in oral health topics (1 [+] UK[3]); community programme champions engaging local communities to advocate and support a school programme (1 [++] UK[4]); or pharmacists opportunistically engaging members of the public in health advice (including oral health) in the pharmacy (1 [+] UK[5]).

[1] Stokes et al. 2009 (++)
[2] Prokhorov et al. 2002 (+)
[3] Coles et al. 2012 (+)
[4] Yusuf et al. 2012 (++)
[5] Blenkinsopp et al. 2002 (+)

Applicability to the UK

Four of the 5 contributing studies took place in the UK so are directly applicable. The fifth was based in the US and concerned views on spit tobacco. This may have some applicability to the UK; however, readers should consider the potential impact of differences in the user profiles and prevalence of split tobacco use between the UK

and US. For example, the US study suggested spit tobacco use was most common in some rural adolescent populations, whereas in the UK it has been reported that use is particularly prevalent in people in South Asian communities.

Narrative Summary

Five studies reported views on barriers or facilitators relating to self-proficiency. This was described in the qualitative framework as possession of the skills necessary for implementation and was closely related to the self-efficacy section 4.3.3. Key characteristics of the contributing studies are summarised in Table 7 for reference.

Barriers

Two studies reported compatible views on how intervention staff (Stokes et al. 2009 [++] England) or prospective intervention staff (Prokhorov et al. 2002 [+] US) felt a lack of skills or expertise inhibited their ability to implement an intervention.

Using a large state-wide survey to assess health-care professionals and educators' views on spit tobacco (ST) prevention and cessation counselling in the US, Prokhorov et al. 2002 reported about one fifth of physicians, one-quarter of dentists, and one-third of dental hygienists and nurses did not feel adequately prepared to provide ST counselling. This lack of self-proficiency overlapped with issues of self-efficacy (See section 4.3.3). Respondents represented those in contact with adolescents and so potentially in a position to deliver spit tobacco prevention and cessation counselling. It was not clear if any were involved in spit tobacco prevention programmes at the time, and appeared to be views on the prospect of delivering prevention and cessation counselling. Similarly, lack of expertise was identified by Local Healthy School Coordinators as a barrier to delivering oral health promotion within the Healthy School context in England, citing they didn't go into secondary schools because they didn't have enough medical knowledge (Stokes et al. 2009 [++] England).

Facilitators

Three studies identified how increases in self-proficiency (Coles et al. 2012 [+] Scotland and Yusuf et al. 2012 [++] England) or a wish to increase self-proficiency

(Blenkinsopp et al. 2002 [+] England) had facilitated their participation in or implementation of the intervention or programme.

All three were reported by those who had an engagement function within the intervention, whether it was pharmacists engaging members of the public in health advice in the pharmacy (Blenkinsopp et al. 2002 [+] England), key workers engaging homeless clients in oral health topics (Coles et al. 2012 [+] Scotland) or community champions engaging local communities to advocate good oral health as part of wider support to a school programme called Keep Smiling (Yusuf et al. 2012 [++] England).

Blenkinsopp et al. 2002 reported that some pharmacists' took part in the intervention because they believed the profession should be taking an active role in health promotion and some reported they wanted to take part from a personal development point of view. Hence, existing self-efficacy and the desire to increase self-proficiency as part of development may have acted as facilitator for participation for some.

Staff working with homeless people as part of the Something to Smile About programme in Scotland reported how they had felt they increased their skills with regard to tailoring oral health messages for their clients during the intervention (Coles et al. 2012 [+] Scotland). This was also reported to aid the implementation of the intervention through enabling them to identify innovative methods of broaching the subject of oral health with their clients, such as speaking to younger clients about the effects of cannabis on oral health. Hence, increased self-proficiency was both an aim of the intervention, but also a key element to its implementation. Finally, the community champions in the Keep Smiling programme reported they gained knowledge, confidence and were able to engage with the local communities and advocate good oral health (Yusuf et al. 2012 [++] England). As part of their role within the programme was to engage the local community, this new knowledge and confidence appeared to act as a facilitator to this element of the programme implementation.

4.4 Programme/Intervention characteristics

This conceptual category contains the themes:

- Compatibility
- Adaptability/flexibility
- Intervention resources
- Contact time

4.4.1 Compatibility

Eight studies reported views on barriers or facilitators relating to compatibility, which was described as contextual appropriateness, fit, congruence and match in the qualitative framework coding scheme.

The contributing studies varied considerably in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 8 for reference.

Study by study results can be found in Appendix F, section 13.3.1.

Table 8 Summary of characteristics of studies contributing to the theme: compatibility

Author Date	Quality score	Country	Target population	Intervention category	Study details
Coles et al. 2012	+	Scotland (UK)	Homeless	Health Education and/or Advice	See Appendix E Section 12.5
Diamond et al. 2003	-	US	School children (dentally underserved communities)	Complex Intervention	See Appendix E Section 12.7
Holme et al. 2009	++	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.9
Owens 2011a	+	Republic of Ireland	Complex needs (children with disabilities)	Complex Intervention	See Appendix E Section 12.16
Prokhorov et al. 2002	+	US	School children	Health Education and/or Advice	See Appendix E Section 12.17
Riedy 2010	-	US	Indigenous (Alaskan)	Complex Intervention	See Appendix E Section 12.19
Wolfe and Huebner 2004	-	US	Under 5s	Complex Intervention	See Appendix E Section 12.22
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 7: compatibility.

Eight studies provided evidence on barriers or facilitators related to the theme compatibility. This covered issues on how compatible the oral health intervention or programme was with existing services, or with the lives of the target service users.

One (++) UK study[1] identified 3 factors as facilitators to the programme implementation: home visits; the conceptual fit of the programme with existing dental services; and programme staff minimising disruption to school and nursery staff.

Seven studies identified barriers relating to a lack of compatibility and a number of similarities were apparent. Incompatibility between the intervention or programme aims and the target population were broadly identified by 4 studies (1 [+] UK[2], 1 [+] Republic of Ireland[3], 1 [+] US[4] and 1 [-] US[5]), distrust of outsiders by 2 (-) US studies[6,7] and excessive burden on the programme workforce by 1 (++) UK study[8]. A related issue, service user resistance or lack of interest, was also reported as a barrier to implementation in 2 studies (1 [+] US[4] and 1 [-] US[5]).

The views highlighting incompatibility between the lives of service users and intervention aims had clear links with those expressed in Evidence Statements 3 and 4 on perceived need and perceived benefits respectively..

[1] Holme et al. 2009 (++)
[2] Coles et al. 2012 (+)
[3] Owens 2011a (+)
[4] Prokhorov et al. 2002 (+)
[5] Wolfe and Huebner 2004 (-)
[6] Diamond et al. 2003 (-)
[7] Riedy 2010 (-)
[8] Yusuf et al. 2012 (++)

Applicability to the UK

Three studies were based in the UK so are directly applicable, 1 was based in the Republic of Ireland and the remaining 4 were in the US. Two of the US studies

involved populations that are uncommon in the UK, including native Alaskan women and rural adolescent spit tobacco users.

The findings on spit tobacco have some applicability to the UK; however, readers should consider the potential impact of differences in the user profiles and prevalence of split tobacco use between the UK and US. For example, the US study suggested spit tobacco use was most common in some rural adolescent populations, whereas in the UK it has been reported that use is particularly prevalent in people in South Asian communities.

The applicability to the UK of the findings from the native Alaskan study are likely to be very limited. This is due to the very specific community being assessed and the specific oral health related practices under study (pre-masticating food for children) that have very limited applicability to the UK population.

Narrative Summary

Eight studies reported views on barriers or facilitators relating to compatibility, which was described as contextual appropriateness, fit, congruence and match. Similarities in views were reported and were grouped into subcategories described below.

Facilitators

One study (Holme et al. 2009 [++] Scotland) reported three issues relating to compatibility of the intervention that were identified as facilitators to the programme implementation: home visits; the conceptual fit of the programme with existing dental services; and programme staff minimising disruption to school and nursery staff. This concerned the Childsmile programme, a complex childhood oral health service targeting under 5s combining both population based and targeted approaches towards the most vulnerable families in Scotland.

The act of sending dental health support workers to provide additional support to some families in their homes was reported to have multiple benefits including helping some parents who found it difficult to keep appointment times due to travelling with young children, and contributing considerably to uptake of other parts of the programme, namely Childsmile Nursery and School. Parents also felt the home was

a positive environment to be seen in and children were more likely to be at ease and not misbehave.

Seeing the Childsmile Nursery and School component as connected to the type of activity normally carried out by the dentist, and linked with the concept of regular check-ups being reported as a facilitator for participation, this highlighted a conceptual compatibility of the programme with existing services. Similarly, willingness of the Childsmile staff to minimise disruption for the nursery and school in recognition of time pressures was reported as a facilitator.

Barriers

Seven studies identified barriers relating to a lack of compatibility and a number of similarities were apparent. Incompatibility between the intervention aims and the target population were broadly identified by 4 studies (Coles et al. 2012 [+] Scotland, Owens 2011a [+] Republic of Ireland, Prokhorov et al. 2002 [+] US and Wolfe and Huebner 2004 [-]), distrust of outsiders by 2 studies (Diamond et al. 2003 [-] US and Riedy 2010 [-] US) and excessive burden on the programme workforce by one study (Yusuf et al. 2012 [++] England).

Incompatibility between lives of the service user and intervention aims

Staff working with homeless people on the Something to Smile About programme (STSA) reported numerous issues related to an incompatibility between the intervention aims and the client's needs - also discussed in section 4.3.1 and 4.3.2 (Coles et al. 2012 [+] Scotland). This was illustrated by the view from many participants that, in practice, STSA was difficult to implement because the ultimate goals of the intervention – dental registration followed by attendance at initial and further appointments – were unrealistic for this client group, and that dental registration alone should be considered an interim goal. Some participants reported that STSA had failed to incorporate the life circumstances of the homeless person into the intervention, so many homeless people appeared to be non-adherent when their lack of interest was actually a reflection of difficulties experienced in other aspects of their lives.

These views were echoed in relation to implementing a multi-sector complex oral health promotion intervention in families of children with disabilities in the Republic of Ireland (Owens 2011a [+] Republic of Ireland). A psychologist and speech language therapist working with the parents both expressed the view that oral health isn't on the radar of some of these parents who are fire fighting other problems or more immediate issues. Hence, there appeared to be a lack of compatibility between the aims of the intervention and the reality of the lives of the service users in some cases.

A related issue, service user resistance, was reported in two studies (Prokhorov et al. 2002 [+] US and Wolfe and Huebner 2004 [-] US). Health care professionals responding to a survey in the US identified patient resistance and lack of community services that treat spit tobacco use as the most common perceived barriers to implementing spit tobacco prevention and cessation counselling (Prokhorov et al. 2002 [+] US). Similarly, staff views on an Oral health Programme to Engage Non-dental health and human service Workers in Integrated Dental Education (OPENWIDE) intervention in the US reported difficulties in educating parents relating to their lack of interest and language barriers (Wolfe and Huebner 2004 [-] US). Both studies illustrated how incompatibilities between the aims of the intervention and the motivation of some of the parents had caused barriers to implementation. The lack of existing community services to support the intervention and language barriers are also of note as barriers.

Distrust of outsiders

Distrust of outsiders was reported by 2 studies (Diamond et al. 2003 [-] US and Riedy 2010 [-] US). Views expressed how some communities had an inherent distrust of outsiders which was described as acting as a barrier to programme implementation. The studies reported issues relating to recruitment of pregnant native Alaskan women and the process of forming a dental care service network in a deprived neighbourhood in Harlem, both US.

Burden on the intervention workforce

The oral health promoters involved in a complex school fluoride varnish and tooth brushing session pilot programme (Keep Smiling) reported that the programme added a significant burden to their workload as they were involved in other projects (Yusuf et al. 2012 [++] England). They reported how a more generous time line would be required in future programmes and that to reduce the burden on schools, the fluoride varnish and tooth brushing sessions could be held on separate days. They were originally held on one day which was reported to place a high burden on the schools and staff.

4.4.2 Adaptability/flexibility

Seven studies reported views on barriers or facilitators related to adaptability or flexibility. These were described in the qualitative framework as programme modification or reinvention, and the extent to which the proposed programme can be modified to fit provider needs and preferences, organisational practices, community needs, values and norms.

The views expressed in this section are closely related to that of compatibility (Section 4.4.1) and service user acceptability (Section 4.7.1).

The contributing studies varied considerably in their oral health interventions, settings, qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 9 for reference.

Study by study results can be found in Appendix F, section 13.3.2.

Table 9 Summary of characteristics of studies contributing to the theme: adaptability or flexibility

Author Date	Quality score	Country	Target population	Intervention category	Study details
Blenkinsopp et al. 2002	+	England (UK)	General population	Health Education and/or Advice	See Appendix E Section 12.2
Burchell et al. 2006	-	Australia	Complex needs (Mental Health)	Complex Intervention	See Appendix E Section 12.4
Coles et al. 2012	+	Scotland (UK)	Homeless	Health Education and/or Advice	See Appendix E Section 12.5
Diamond et al. 2003	-	US	School children (dentally underserved communities)	Complex Intervention	See Appendix E Section 12.7
Macpherson et al. 2010	-	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.12
Trubey and Chestnutt 2013	+	Wales (UK)	Under 5s (from deprived areas)	Supervised tooth brushing	See Appendix E Section 12.21
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 8: adaptability and flexibility.

Seven studies provided evidence identifying implementation barriers and facilitators related to the theme adaptability and flexibility. This covered the extent to which programmes or interventions could or could not be modified to fit provider needs and preferences; existing organisational practices, and community needs, values and norms.

Five studies (1 [++] UK[1], 1 [+] UK[2], 1 [-] UK[3], 1 [-] US[4] and 1 [-] Australia[5]) provided evidence that intervention or programme flexibility or adaptability had acted as a facilitator to implementation. Examples included: seeking and gaining positive parental consent for school based activities involving children; tailoring oral health messages to service user's individual life circumstances; responding to over demand on the service; and having flexibility to adapt to different local community structures. One (+) UK study[6] reported a desire for more flexibility to potentially aid intervention implementation and 1 (+) UK study[7] presented mixed views on the need for flexibility between different staff groups within the intervention.

Overall, the evidence was broadly consistent in expressing how flexibility and adaptability had facilitated the implementation of the oral health interventions and programmes under study. The views expressed in this theme were closely related to those expressed under compatibility (Evidence Statement 7) and service user acceptability (Evidence Statement 16).

[1] Yusuf et al. 2012 (++)
[2] Coles et al. 2012 (+)
[3] Macpherson et al. 2010 (-)
[4] Diamond et al. 2003 (-)
[5] Burchell et al 2006 (-)
[6] Blenkinsopp et al. 2002 (+)
[7] Trubey and Chestnutt 2013 (+)

Applicability to the UK.

Five of the 7 studies were based in the UK so are directly applicable to the UK setting; 1 was based in the US and 1 in Australia. There is no evidence to suggest that the views raised in the US and Australian studies would not be broadly applicable to the UK setting.

Narrative Summary

Seven studies reported adaptability or flexibility as barriers or facilitators to programme or intervention implementation. The views were broadly consistent in expressing how flexibility and adaptability had facilitated the implementation of the oral health intervention and programmes under study.

The views expressed in this section are closely related to that of compatibility (Section 4.4.1) and service user acceptability (Section 4.7.1).

Facilitators

Adaptability and flexibility in methods of seeking positive consent from parents for their children to take part in school based interventions were specifically highlighted (Macpherson et al. 2010 [-] Scotland and Yusuf et al. 2012 [++] England) as was the importance of adaptability to implementation in different deprived communities (Diamond et al. 2003 [-] US), tailoring the intervention the homeless service users (Coles et al. 2012 [+] Scotland.) and flexibility in response to over demand on the service (Burchell et al 2006 [-] Australia).

For example, 1 UK study (Macpherson et al. 2010 [-] Scotland) found the school based intervention was very dependent on gaining consent from parents and varied considerably across different schools. Local responses to increase consent were attempted, such as a session to familiarise parents, children and teachers with the staff of the intervention and one of the key aspects of it, the fluoride varnish procedure.

The need to tailor the intervention to individual homeless service users was expressed repeatedly and emphasised as key to implementation (Coles et al. 2012 [+] Scotland). Those working with the homeless service users reported oral health was a low priority relative to shelter, food and money and so skills were needed to

tailor the oral health message to the person, in light of their life circumstances at the time.

The importance of adaptability to implementation in different deprived communities was highlighted repeatedly in Diamond et al. 2003 [-] US. This study reported it needed to adopt different strategies to establish a community dental health network in two dentally underserved and deprived communities in the US because they had very different community structures. For example, parent teachers associations (PTAs) were important for reaching and involving parents of school children in oral health in one area, but the other area didn't have PTAs so alternative routes were used. It was not a one size fits all approach.

Flexibility in response to over demand on the service was described relating to a community dental health outreach service for people with mental illness (Burchell et al 2006 [-] Australia). At one point in its development the programme was reported to have struggled to meet demand. It didn't have the resources to expand so they decided to tighten eligibility criteria to focus on those with higher levels of disability and more complex needs. The number of service users seen per outreach visit was also capped to make sure there was still adequate time for each service user.

The desire for more flexibility to respond to their clients' needs was expressed by some pharmacists delivering a structured two staged opportunistic advice intervention to the general public, which could include an oral health element (Blenkinsopp et al. 2002 [+] England). However, this was voiced a concern, rather than an element that had explicitly inhibited implementation of the intervention, so should be interpreted cautiously.

One study also highlighted the potential difference in the view of the importance of flexibility between different staff groups within the same intervention, a school based daily supervised tooth brushing programme in deprived areas of Wales (Trubey and Chestnutt 2013 [+] Wales). Those involved in the direct delivery of the intervention expressing a stronger desire for flexibility than more managerial groups. This potential tension was not further explored in the study so should also be interpreted cautiously.

4.4.3 Intervention resources

Thirteen studies reported views on barriers or facilitators relating to intervention resources. This was described in the qualitative framework coding scheme as resources such as resource manuals or oral health leaflets and administrative forms such as feedback, monitoring and evaluation forms.

The contributing studies varied in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 10 for reference.

Study by study results can be found in Appendix F, section 13.3.3.

Table 10 Summary of characteristics of studies contributing to the theme: intervention resources

Author Date	Quality score	Country	Target population	Intervention category	Study details
Arora et al. 2012	+	Australia	New mothers (of preschool children in disadvantaged areas)	Health Education and/or Advice	See Appendix E Section 12.1
Blinkhorn 2008	-	England (UK)	Under 5s (from disadvantaged areas)	Health Education and/or Advice	See Appendix E Section 12.3
Coles et al. 2012	+	Scotland (UK)	Homeless	Health Education and/or Advice	See Appendix E Section 12.5
Dental Health Foundation 2007	+	Northern Ireland (UK) and Republic of Ireland	School children (from disadvantaged areas)	Complex Intervention	See Appendix E Section 12.6
Diamond et al. 2003	-	US	School children (dentally underserved communities)	Complex Intervention	See Appendix E Section 12.7
Douglass et al. 2005	-	US	School children	Improving access	See Appendix E Section 12.8
Holme et al. 2009	++	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.9
Maher et al. 2012	-	Australia	Under 5s	Complex Intervention	See Appendix E Section 12.13
O'Neill and O'Donnell 2003	-	Northern Ireland (UK)	School children	Common risk factors	See Appendix E Section 12.15
Owens 2011a	+	Republic of Ireland	Complex needs (children with disabilities)	Complex Intervention	See Appendix E Section 12.16

Trubey and Chestnutt 2013	+	Wales (UK)	Under 5s (from deprived areas)	Supervised tooth brushing	See Appendix E Section 12.21
Yuen and Pope 2009	-	US	Complex needs (Tetraplegia)	Health Education and/or Advice	See Appendix E Section 12.23
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 9a: intervention resources; space, equipment and structural organisation of the programme.

Five studies provided evidence on barriers or facilitators related to the physical space, equipment and structural resources available for the intervention or programme during implementation.

One (-) UK study[1] reported staff experienced problems storing stocks of tooth brushing packs (toothpaste, a toothbrush and a health educational leaflet) and 1 (-) US study[2] reported a lack of garage space was a consistent problem implementing mobile dental van interventions.

Facilitators were reported in 3 studies (1 [++] UK[3], 1 [-] Northern Ireland[4], 1 [-] US[5]) and included: people with tetraplegia valuing teleconference equipment and an electrical toothbrush; school based staff indicating small class sizes, sufficient staff, and availability of sinks had made it easier to run supervised tooth brushing, and how a resource pack and assistance with the provision of fruits and vegetables would be useful in facilitating schools' continuation in healthy snack schemes.

[1] Blinkhorn 2008 (-)
[2] Douglass et al. 2005 (-)
[3] Holme et al. 2009 (++)
[4] O'Neill and O'Donnell 2003 (-)
[5] Yuen and Pope 2009 (-)

Evidence statement 9b: intervention resources; programme administration and time requirements.

Five studies provided evidence identifying barriers related to administrative burden or time.

Consistent evidence identifying barriers related to administrative burden was reported in 5 studies (2 [++] UK [1,2] , 2 [+] UK[3,4] and 1 [-] US[5]). Issues included: cumbersome activity monitoring forms, the need to revise, streamline or simplify

paperwork once the programme was underway; inefficiencies in data entry and non-electronic data recording in school based programmes, and problems associated with asking parents to fill in and return consent forms for their children at regular intervals.

The (+) UK[4] study reported differences in views. A group consisting mainly of managerial staff perceived paper work was more of a problem than groups largely consisting of support workers and health educators who typically dealt with the forms day to day. The reasons for the difference were not explored further.

Oral health promoters involved in 1 (++) UK study[2] described feeling they needed more time (in itself a resource) to organise and implement a pilot programme which was delivered within just over a month with a lead time of just over 2 months. They also described how having protected time to devote to the pilot programme had helped their working practices.

[1] Yusuf et al. 2012 (++)
[2] Holme et al. 2009 (++)
[3] Coles et al. 2012 (+)
[4] Trubey and Chestnutt 2013 (+)
[5] Diamond et al. 2003 (-)

Evidence statement 9c: intervention resources; service user facing information.

Five studies provided evidence on the impact of service user facing intervention resources, such as information leaflets or educational materials, on the implementation of oral health interventions or programmes.

Two studies identified barriers relating to intervention resources not being tailored to the target audience (1 [+] Australian[1] and 1 [++] UK[2]). These included concerns that: information in leaflets may be overwhelming for people with low literacy; they were not in the service user's native language; they were too wordy and would benefit from more pictures; they didn't' have enough teeth-related information; the

information was inappropriately targeted towards “middle class” families; there was a need to tailor information toward disadvantaged families, in particular, culturally and linguistically diverse groups; the language and content was too long, detailed and overwhelming; and that the information contained medical or dental jargon like “sealant or fluoride treatment” that wouldn’t be understood. One (-) Australian study[3] reported staff didn’t access some of the resources in other languages because they weren’t aware they existed or the process of accessing and printing resources was difficult.

One (+) study in the Republic of Ireland and Northern Ireland[4] identified a progress chart as a consistently used and usefully perceived resource within a school based oral health programme.

Inconsistent views were reported in 1 (+) study based in the Republic of Ireland[5]. Parents, social workers and community nurses reported using information packs designed as part of the intervention, but their use was patchy. They identified pictures and diagrams as being particularly useful elements within the packs.

[1] Arora et al. 2012 (+)
[2] Yusuf et al. 2012 (++)
[3] Maher et al. 2012 (-)
[4] Dental Health Foundation 2007 (+)
[5] Owens 2011a (+)

Applicability to the UK.

Six of the 13 contributing studies were based exclusively in the UK so are applicable to the UK. Three were based in the US, 2 were fully or partly based in the Republic of Ireland and 2 in Australia. We identified no reason why the views expressed in the internationally based studies would not be broadly relevant for consideration before implementing similar interventions or programmes in a UK setting.

Narrative summary

Thirteen studies reported barriers and facilitators related to intervention resources. The studies varied considerably in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 10 for reference.

The majority of views expressed identified how specific intervention resources could act as barriers to programme or intervention implementation in a variety of settings. Facilitators appeared to be described less explicitly than barriers, but examples were reported in 4 studies.

Three broad areas of similarity emerged across a number of studies: firstly, the suitability of service user facing resources, with particular emphasis on information that was not tailored to the target audience. Secondly, problems relating to administrative burden and time pressures. And thirdly, the availability of appropriate physical and structural resources was found to influence programme implementation.

These are grouped by common sub-theme below. Relatively few studies reported intervention resources as facilitators. This may reflect an underlying reporting bias in the studies and evaluations towards identifying areas for improvement rather than identifying things that went well and acted as facilitators.

Barriers

Information not tailored to audience

The views of 19 Child and Family Health Nurses (CFHNs) were sampled for reflections on the usefulness of leaflets giving oral health advice to parents of preschool children in disadvantaged areas of South Western Sydney, Australia (Arora et al. 2012 [+] Australia). The authors grouped the interview findings into 3 main themes. Theme 1; information in the leaflets may be overwhelming for people with low literacy: theme 2; the leaflet would benefit from more pictures, and theme 3; it didn't have enough teeth-related information. The CFHNs repeatedly and consistently reported they saw the leaflets were targeted towards "middle class" families and there was a need to tailor these towards disadvantaged families, in particular, culturally and linguistically diverse groups. They felt parents with lower

levels of literacy may find the language and content overwhelming and requested they were free of medical or dental jargon including terms like “sealant or fluoride treatment” which they anticipated wouldn’t be understood by the majority of mothers. For more detailed findings see section 13.3.3.

Concerns that the information given to parents was not appropriate was also highlighted in a second study (Yusuf et al. 2012 [++] England). Tooth champions working on the school based supervised tooth brushing and fluoride varnish programme reported concerns with the information given to parents. Some reported it was too long and detailed for the intended audience, and that certain parts may confuse parents. They also suggested the information for parents should be translated into the language of the target audience to overcome language barriers.

A related issue was highlighted by the nurses involved in The Early Childhood Oral Health Programme in Australia who reported they were satisfied with the health promotion resources supporting their programme (Maher et al. 2012 [-] Australia). However, they didn’t access some of the resources in other languages because they weren’t aware they existed or the process of accessing and printing resources was reported to be difficult. This highlights the risk that even if translated materials are available, as was suggested in Arora et al. 2012 and Yusuf et al. 2012 above, there is no guarantee they will be used if intervention staff are not sufficiently aware of them or they are not easily accessible.

Administrative burden

Simplifying the paperwork was reported as the main area for improvement in the Something to Smile About programme – a capacity-building oral health intervention for staff working with homeless people (Coles et al. 2012 [+] Scotland). Views were expressed about the need for tailored resources to be available, accessible, clear, informative and straightforward. Staff working with homeless people also reported a monitoring form was perceived as a barrier to helping their service users’ transition through the stages of change model – a key part of implementing their intervention. This involved moving service users from pre-contemplation, to contemplation, to preparation, to action on oral health issues including registering with a dentist. The

study publication reported they used a four-stage monitoring form that was more suited to stable, resettlement settings and not use at a point of emergency or crisis. No further information was provided.

Similarly, as part of establishing a community-based oral health care network (DentCare) in an underserved community in the US, oral examination forms were streamlined from lengthy research orientated forms to ones that were shorter. They collected all the pertinent information but were reported to save time on data entry (Diamond et al. 2003 [-] US). Although not explicitly linked to barriers or facilitators in the text, shortening and simplifying the forms appeared to be an optimisation step; implying administration was more than necessary in the early stages of programme implementation.

Administrative burden was further reported as a barrier to implementation by both the dentists taking part in the Keep Smiling pilot programme delivering supervised tooth brushing and fluoride varnish in schools. Several problems were reported including: having to enter children's names manually into a database as class lists were not available electronically (dentists did not have secure emails to handle patient sensitive data) and dentists entering activity data and performing administrative duties that were envisaged to be the role of dental nurses to ensure that mistakes were not made and they were paid correctly (Yusuf et al. 2012 [++] England).

The tooth champions of the Keep Smiling pilot programme suggested an additional intervention resource, a programme protocol aimed at school staff, might facilitate implementation of the programme in future. It also briefly highlighted further administrative burdens on key staff groups implementing the Keep Smiling pilot programme including time, completing monitoring forms and the organisation of resources (Yusuf et al. 2012 [++] England).

Having to fill in and return consent forms at regular intervals was identified by the parents as being a barrier to giving consent for their child to participate in the Childsmile programme – a complex intervention (Holme et al. 2009 [++] Scotland). They reported how they were given many forms and reported finding it difficult to

keep track and ensure they were all returned. The authors indicated that this administrative barrier had attempted to have been addressed by computerising records, but indicated this had not entirely resolved the issue.

For the tooth brushing elements of the programme, reported barriers related to practical requirements such as time and staff numbers, as well as intervention resources such as suitable space and the availability of a sink.

The attitudes towards establishing a daily supervised school-based tooth brushing programme showed there were differences in opinion between staff groups about administration issues (Trubey and Chestnutt 2013 [+] Wales). A group consisting mainly of managerial staff perceived paper work was more of a problem than groups largely consisting of support workers and health educators who typically dealt with the forms day to day. Groups containing support workers also reported sceptical views on the benefits of promoting the school tooth brushing scheme through a website, promotional DVD or letter sent to head-teachers. This group felt valuable time had been wasted on “glossy” paper work.

Individual issues

Oral Health Promoters of the Keep Smiling pilot programme described how they felt they needed more time (in itself a resource) to organise and implement the programme which was delivered within just over a month with a lead time of just over 2 months (Yusuf et al. 2012 [++] England). The short time span and intensity of the pilot were reported as specific barriers both overall and specifically in relation to delivering the fluoride varnish and tooth brushing elements of the programme on the same day.

A number of specific intervention resource issues were identified that acted as facilitators or barriers to implementation that were relatively unique to the intervention or programme in question. These included experiencing problems storing stocks of tooth brushing packs (toothpaste, a toothbrush and a health educational leaflet) as part of a health visitor led programme encouraging regular tooth brushing in under 5s (Blinkhorn 2008 [-] England) and how finding power sources and lack of garage space were highlighted as specific facilitators and

barriers respectively in the implementation of mobile dental van interventions (Douglass et al. 2005 [-] US).

Facilitators

Facilitators appeared to be described less explicitly than barriers, but examples were reported.

The teachers involved in the Winning Smiles school oral health promotion programme for 7 to 8-year-olds reported key teaching resources were appropriate, colourful and child-friendly (Dental Health Foundation 2007 [+] Republic of Ireland and Northern Ireland). The Winning Smiles Progress Chart was consistently used by all teachers and was perceived to be a very useful element of the resource pack provided. The children's involvement in filling it in was highlighted by a number of the respondents. However a number of teachers indicated that it was too small and could be more colourful.

Similarly, despite minor frustrations with the teleconferencing equipment, 2 women who took part in an oral home telecare feasibility study for adults with tetraplegia valued the addition of the technology and reported finding the electrical toothbrush a positive factor in the intervention (Yuen and Pope 2009 [-] US).

In the Childsmile programme staff reported that protected time to spend on the programme had helped their working practices and that structural intervention resources such as small class sizes, sufficient staff, and availability of sinks had made it easier to run the programme (Holme et al. 2009 [++] Scotland)

The majority of schools taking part in the Smart snacks scheme, a healthy breaks initiative in the school environment in Northern Ireland, suggested they would find a resource pack and assistance with the provision of fruits and vegetables useful in facilitating their continuation in the scheme (O'Neill and O'Donnell 2003 [-] Northern Ireland).

The picture was less clear in 1 study (Owens 2011a [+] Republic of Ireland). In talking about communicating oral health as part of the intervention; parents, social workers and community nurses reported using information packs designed as part of

the intervention, but their use was patchy. They identified pictures and diagrams as being particularly useful.

4.4.4 Contact time

Three studies reported views on barriers or facilitators relating to contact time, which was described as contact time between service provider and service user to guide coding.

The contributing studies varied in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 11 for reference.

Study by study results can be found in Appendix F, section 13.3.4.

Table 11 Summary of characteristics of studies contributing to the theme: contact time

Author Date	Quality score	Country	Target population	Intervention category	Study details
Burchell et al. 2006	-	Australia	Complex needs (Mental Health)	Complex Intervention	See Appendix E Section 12.4
Coles et al. 2012	+	Scotland (UK)	Homeless	Health Education and/or Advice	See Appendix E Section 12.5
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 10: contact time.

Three studies reported barriers or facilitators related to the amount of contact time between the service provider and service user. The views expressed were generally brief and not explored in depth.

Not having enough contact time was reported as an implementation barrier in 2 UK studies (1 [+][1] and 1 [++][2]). This related to staff not having enough time with service users who were homeless to implement the intervention fully[1], and community programme champions not having enough time to explain details of an oral health programme to parents of children to be enrolled[2].

One (-) Australian study[3] that provided outreach services to people with mental health illness reported that adequate contact time had facilitated implementation by enabling dentists in the intervention sufficient time to overcome known barriers related to the complex needs of the service users - such as dental phobia, regular breaks during treatment sessions and unpredictable behaviour. The study authors' reported this protected time had been achieved through securing block funding. See Evidence Statement 1 for other funding related barriers and facilitators.

[1] Coles et al. 2012 (+)
[2] Yusuf et al. 2012 (++)
[3] Burchell et al 2006 (-)

Applicability to the UK.

Two of the 3 included studies were based in the UK so are directly applicable. The third study was based in the Australia but also seems broadly applicable to the UK.

Narrative Summary

Just 3 studies reported barriers or facilitators related to contact time and the views expressed were generally brief and not explored in depth.

Not having enough contact time between staff implementing the programme or intervention and service users was reported as an implementation issue in 2 studies

(Coles et al. 2012 [+] Scotland and Yusuf et al. 2012 [++] England) while 1 reported views that could be considered as possible facilitators (Burchell et al. 2006 [-]).

Coles et al. 2012 reported how people working with homeless people as part of the Something to Smile About programme saw the short length of time they were in contact with the service user as a barrier to helping them transition through the behaviour change model they were attempting to implement. That is, the stages of change from the transtheoretical model of behaviour change: moving from pre-contemplation, to contemplation, to preparation, to action. In response to this it was suggested a dynamic intervention tailored to the needs of the client was needed.

Similarly, community champions taking part in the Keep Smiling pilot programme targeting 3-7 year olds in White City, Hammersmith & Fulham reported that time was a barrier to properly explaining the intervention to parents. One reported these conversations were restricted to approaching parents when the children were dropped off or collected from school. The lack of engagement of parents with the intervention was reported elsewhere to be an area for improvement for future programme roll out so may have been in part due to lack of time.

The Dental as Anything outreach programme targeting people with a mental health Illness reported how adequate contact time had enabled the dentists sufficient time to deal with the complex needs of the service users - such as dental phobia, regular breaks during a treatment session and unpredictable behaviour (Burchell et al. 2006 [-]). These issues had been highlighted as potential barriers to accessing and sustaining mainstream dental health services so sufficient time to address these issues implied time was acting as a facilitator. They reported this protected time had been achieved through securing block funding (See section 4.2.1 for other funding related barriers and facilitators).

4.5 Organisational capacity

This conceptual category contains the themes:

- General organisational factors
- Specific practices and processes

- Specific staffing considerations

4.5.1 General organisational factors

Nine studies were identified that reported barriers or facilitators related to general organisation factors. The description of this qualitative framework theme to guide coding was as follows:

- Positive work environment - employees views on morale, trust, collegiality and dispute resolution methods.
- Organisational norms regarding change - collective reputation/norms in regards to willingness to try new approaches vs. maintaining status quo (openness to change, innovativeness, and risk-taking).
- Integration of new programme - can the new programme be incorporated into existing practices/routines.
- Shared vision - mission, consensus, commitment, staff buy-in regarding the value and purpose of the new programme/intervention.

The majority of views expressed for this theme concerned “integration” of the new programme and having a “shared vision” so are grouped as such below. Key characteristics of the contributing studies are summarised in Table 12 for reference.

Study by study results can be found in Appendix F, section 13.4.1.

Table 12 Summary of characteristics of studies contributing to the theme: general organisational factors

Author Date	Quality score	Country	Target population	Intervention category	Study details
Burchell et al. 2006	-	Australia	Complex needs (Mental Health)	Complex Intervention	See Appendix E Section 12.4
Riedy 2010	-	US	Indigenous (Alaskan)	Complex Intervention	See Appendix E Section 12.19
Stokes et al. 2009	++	England (UK)	School children	Common risk factors	See Appendix E Section 12.20
Diamond et al. 2003	-	US	School children (dentally underserved communities)	Complex Intervention	See Appendix E Section 12.7
Dental Health Foundation 2007	+	Northern Ireland (UK) and Republic of Ireland	School children (from disadvantaged areas)	Complex Intervention	See Appendix E Section 12.6
Maher et al. 2012	-	Australia	Under 5s	Complex Intervention	See Appendix E Section 12.13
Wolfe and Huebner 2004	-	US	Under 5s	Complex Intervention	See Appendix E Section 12.22
Holme et al. 2009	++	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.9
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 11a: general organisational factors; integration.

Four studies provided evidence on barriers or facilitators relating to the integration of a new oral health programme or intervention with existing practice or services.

One (-) Australian study[1] reported that integrating a dental outreach service targeting people with mental illness with existing health and support services was perceived to be important to the programme sustainability.

Conversely**,** multiple stakeholders from 1 (++) UK study[2] reported that implementing a pilot programme in schools had taken a large and unsustainable amount of their time and resource, which would need to be addressed if the programme was rolled out to more schools. One (-) US study[3] experienced problems recruiting Alaskan native women into a dental intervention. Problems were partly attributed to failing to integrate the recruitment process into the women's lives and normal decision making processes, which relied on family and community input.

Integration was not reported to be acting as a barrier to the incorporation of oral health into existing Early Head Start and Head Start programmes in 1 US (-) study[4].

[1] Burchell et al 2006 (-)
[2] Yusuf et al. 2012 (++)
[3] Riedy 2010 (-)
[4] Wolfe and Huebner 2004 (-)

Evidence statement 11b: general organisational factors; shared vision

Five studies provided evidence on the impact of shared vision on implementing oral health interventions or programmes.

Two studies (1 [-] US[1] and 1 [++] UK[2]) reported that collaborating with organisations with a shared vision[1] or working with institutions (e.g. nurseries) with a positive attitude to oral care had helped the formation[1] and effective running[2] of the respective oral health programmes.

On the other hand, a lack of shared vision was reported as a potential barrier in 4 studies (1 [+] Republic of Ireland and Northern Ireland[3], 1 [++] UK[4], 1 [-] Australian study[5] and the same [++] UK[2] that reported facilitatory factors). Issues included: tensions between school staff and oral health promoters about integrating the programme into school life with minimal disruption[3]; problems rolling out a programme to child health professionals due to lack of time, confidence and perceived lack of willingness of others to receive information[5]; and having dual programme aims (universal care and targeted support), which was reported to be confusing to staff and parents and had the potential to cause stigma among those targeted[2].

Finally, a (++) UK study[4] reported differences in opinion from different stakeholders about whose responsibility it was to incorporate oral health promotion in Healthy Schools, suggesting a lack of shared vision. The degree to which oral health was incorporated into Healthy Schools was reported to be largely due to historical patterns of working, partnerships, resources and priorities.

[1] Diamond et al. 2003 (-)
[2] Holme et al. 2009 (++)
[3] Dental Health Foundation 2007 (+)
[4] Stokes et al. 2009 (++)
[5] Maher et al. 2012 (-)

Applicability to UK

Three of the 9 studies were based exclusively in the UK so have direct applicability to the UK setting. One further study was based in both the Republic of Ireland and Northern Ireland so had partial direct applicability. The remaining studies were based in the US or Australia. There was little to suggest the issues raised in these international studies would not be broadly applicable to the UK setting. The study into Alaskan native women in the US appears particularly inapplicable to the UK. However, the views it highlighted around understanding the target population's decision making processes and how this might be supported to encourage participation, may still be of some relevance to programme implementers in the UK.

Narrative Summary

Nine studies reported barriers and facilitators related to general organisational factors. The studies varied considerably in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 12 for reference.

All studies involved complex interventions with the exception of Stokes et al. 2009, which was categorised as addressing common risk factors for oral health as it concerned delivery of oral health promotion as part of Healthy Schools programmes. The studies included interventions targeting people with mental health problems (Burchell et al 2006 [-] Australia); indigenous native Alaskan women (Riedy 2010 [-] US); school children (Stokes et al. 2009 [++] England); school children from dentally underserved communities (Diamond et al. 2003 [-] US); school children from disadvantaged areas (Dental Health Foundation 2007 [+] Republic of Ireland and Northern Ireland) and under 5s (Wolfe and Huebner 2004 [-] US, Maher et al. 2012 [-] Australia and Holme et al. 2009 [++] Scotland). One study targeted both under 5s and school children from deprived areas (Yusuf et al. 2012 [++] England).

Integration of the programme

Successful integration of the programme into existing practices was reported as a facilitator by Burchell et al 2006 [-] Australia, whereas problems integrating, or a lack of integration, was reported as a barrier or potential barrier in Yusuf et al. 2012 [++] England, Riedy 2010 [-] US and Wolfe and Huebner 2004 [-] US.

The authors' description of the development of the Dental as Anything Inner South Community Health Service Dental Outreach programme for people with a mental illness (Burchell et al 2006 [-] Australia) reported that the program's integration into existing heath and support services were perceived to be important to the programme sustainability, but expanded little on this statement.

Wolfe and Huebner 2004 [-] US also reported that only a minority of respondents felt that existing Early Head Start and Head Start programmes lacked the time, staff or financial resources to integrate oral health education to their present curriculum. Hence, integration did not seem to be perceived as acting as a barrier to the integration of oral health into the existing workloads and programmes in this particular setting.

The Keep Smiling pilot programme (Yusuf et al. 2012 [++] England) was reported to be delivered within just over a month with a lead time of just over 2 months. Some stakeholders reported concerns that these short timescales had made it difficult to meet the expectations of all dental teams and school staff involved in the programme. Furthermore, they reported that although the schools had integrated the pilot programme, it had a large impact on the school staff in terms of time, space and workload. This raised the issue of whether the time and resource used to ensure the success and integration of the pilot programme would be feasible to replicate in other schools as part of programme roll out. This is also discussed in section 4.4.1 under the theme, compatibility.

An issue related to integration was also reported as a barrier in Riedy 2010 [-] US who reported significant problems recruiting Alaskan native women into a dental intervention as part of a randomised control trial. They attempted to use a centralised location for recruitment that was outside of the women's usual community setting, but this was reported as problematic because it reportedly didn't fit in with the women's decision making processes, which required family and community input, rather than being taken in isolation. Subsequent recruitment efforts recruited from the communities themselves. Hence, lack of integration of the recruitment method into the existing practices of the women appeared to act as a barrier to enrolment. While this is quite specific to the Alaskan native population, there may be lessons to

be learned more generally about understanding the target population's decision making processes and taking into account how heavily they rely on community and family input and how this might be supported to encourage participation.

Shared vision

Having a shared vision was identified as a facilitator by Diamond et al. 2003 [-] US and Holme et al. 2009 [++] Scotland whereas a lack of shared vision was reported as a potential barrier in Dental Health Foundation 2007 [+] Republic of Ireland and Northern Ireland, Stokes et al. 2009 [++] England, Holme et al. 2009 [++] Scotland and Maher et al. 2012 [-] Australia.

In describing the process evaluation of implementing a community-based oral health care programme (DentCare) in an underserved community in the US, Diamond et al. 2003 reported how collaborating with organisations with a shared vision had facilitated the formation of the programme. Additionally, a highly regarded leader had facilitated much of the early activity of establishing the network.

The professionals involved in the Childsmile programme (Holme et al. 2009) identified facilitators for effective running of Childsmile Nursery and School which included a positive attitude to oral care within the Nursery (often indicated by active tooth brushing programmes); active promotion of Childsmile Nursery and School and the individual sessions; and additional support in consent procedures. The positive attitude toward oral care may reflect positive organisational norms regarding change as well as a degree of shared vision in valuing oral health. The Childsmile professionals also reported how general awareness raising and increased prioritisation of oral health among other professionals and among parents were also important to success. This may reflect an effort to foster a shared vision amongst professionals involved in the programme but was not explicitly described as such in the underlying research.

Tensions were reported between different staff groups of the Winning Smiles programme (Dental Health Foundation 2007 [+] Republic of Ireland and Northern Ireland). These were reported between school staff and oral health promoters, as well as between teachers and health promotion practitioners as a result of different

views on keeping disturbances to the flow of everyday school life to a minimum**.** This tension was reported to be due to different reasons for being involved in health promotion programmes and differences in relation to the importance of oral health. The authors of the evaluation report suggested an openness and awareness of these tensions would facilitate the delivery of the programme.

The Childsmile programme had a dual aim of providing universal access and targeted support to those most in need (Holme et al. 2009 [++] Scotland). While this was not cited as a specific barrier it was reported to cause confusion for both professionals and parents involved in the programme. This suggested the dual aim had not fostered a clear mission statement or consensus amongst some of those involved. It was suggested that professionals develop an easy, non-stigmatising rationale to explain the targeting criteria approach, for example, in relation to which families were suitable for home visits.

Maher et al. 2012 [-] Australia reported that the Early Childhood Oral Health Program (ECOH) co-ordinators working on an intervention promoting prevention and timely intervention of early childhood caries reported problems rolling out the programme to child health professionals other than child and family health nurses. Difficulties were attributed to lack of time and confidence amongst the ECOH co-ordinators to approach other health professionals and lack of willingness of other health professionals to receive information. This was not explored further in the research, but a lack of willingness to engage may point to a potential lack of shared vision amongst health professionals on the issue of oral health, or lack of awareness and shared vision of the aims of this particular intervention.

A lack of consensus was highlighted by differences in opinion reported from stakeholders on who was responsible for oral health promotion in Healthy Schools (Stokes et al. 2009 [++] England). Some thought it was the responsibility of schools or school nurses, whereas others felt it was specialist oral health promotion teams or jointly between Healthy Schools teams, schools and oral health promotion teams. The degree to which oral health was incorporated into Healthy Schools was reported to be largely due to historical patterns of working, partnerships, resources and priorities so appeared not to be standardised. The study reported that promoting oral

health as part of the Healthy Schools programme was often dependent on historical ways of working and input from specialised dental personnel working on health promotion and supporting the school activity.

4.5.2 Specific practices and processes

Ten studies reported views on barriers or facilitators relating to specific practices and processes. The description of this qualitative framework theme to guide coding was as follows:

- Shared decision making (local input, community participations or involvement, local ownership and collaboration) on what will be implemented and how
- Local community input encouraged
- Coordination with other agencies (partnerships, networking, inter-sector alliances and multidisciplinary linkages) bringing together different perspectives, skills and resources to bear on programme implementation
- Communication - effective mechanisms for frequent and open communication

Key characteristics of the contributing studies are summarised Table 13 for reference.

Study by study results can be found in Appendix F, section 13.4.2.

Table 13 Summary of characteristics of studies contributing to the theme: specific practices and processes

Author Date	Quality score	Country	Target population	Intervention category	Study details
Blinkhorn 2008	-	England (UK)	Under 5s (from disadvantaged areas)	Health Education and/or Advice	See Appendix E Section 12.3
Burchell et al. 2006	-	Australia	Complex needs (Mental Health)	Complex Intervention	See Appendix E Section 12.4
Coles et al. 2012	+	Scotland (UK)	Homeless	Health Education and/or Advice	See Appendix E Section 12.5
Diamond et al. 2003	-	US	School children (dentally underserved communities)	Complex Intervention	See Appendix E Section 12.7
Holme et al. 2009	++	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.9
Kranz et al. 2011	+	US	Under 5s (from low income families)	Health Education and/or Advice	See Appendix E Section 12.10
Macpherson et al. 2010	-	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.12
Stokes et al. 2009	++	England (UK)	School children	Common risk factors	See Appendix E Section 12.20
Trubey and Chestnutt 2013	+	Wales (UK)	Under 5s (from deprived areas)	Supervised tooth brushing	See Appendix E Section 12.21
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 12a: specific practices and processes; coordination and collaboration.

Five studies provided evidence that internal and external coordination and collaboration, had facilitated oral health programme implementation (2 [++] UK[1,2], 1 [+] UK[5], 1 [-] UK[4] and 1 [-] US[5]) while 3 studies provided evidence of barriers related to lack of collaboration and coordination (2 [++] UK[1,6] and 1 [+] US[7]). One (+) UK study[8] reported views seemingly opposing the formation of links between schools and dental practices but there was inconsistency in the underlying study that called into question whether this was what respondents' actually meant.

Specific practices that facilitated implementation or were reported as necessary for implementation, included: effective collaboration between programme staff and stakeholders (e.g. teachers, dental providers, programme champions and parents)[1]; getting external expertise and input[2]; the provision of a list of local NHS dentists that accepted homeless service users[3]; collaborating with community dental service promoters[4]; and using parent teacher associations and community leaders to mobilise community support for an oral health care programme[5].

Specific practices that acted as barriers to implementation included: lack of clear professional roles and awareness of others' roles[6], lack of existing formal links between dental practices and schools[1], and problems finding a dentist that sees young children or accepts Medicaid in the US[7].

[1] Yusuf et al. 2012 (++)
[2] Stokes et al. 2009 (++)
[3] Coles et al. 2012 (+)
[4] Blinkhorn 2008 (-)
[5] Diamond et al. 2003 (-)
[6] Holme et al. 2009 (++)
[7] Kranz et al. 2011 (+)
[8] Trubey and Chestnutt 2013 (+)

Evidence statement 12b: specific practices and processes; communication, consent, and engagement.

Six studies (3 [++] UK[1,2,5], 1 [-] UK[3], 1 [-] US[4] and 1 [-] Australian[6]) provided evidence on barriers and facilitators on specific practices and processes. These were grouped into 3 categories of communication, parental consent, and engagement.

Lack of communication was reported as a barrier to implementation in 2 studies (both [++] UK[1,2]). Barriers included: lack of communication between different programme staff groups, managers and other professionals including teachers[1,2]; staff not being kept up-to-date with changes to advice or programme resources[1]; and short time scales for communication[2]. Facilitators included effective communication between different staff groups within the oral health programme[2].

Four studies (2 [++] UK[1,2], 1 [-] UK[3] and 1 [-] US[4]) provided consistent evidence that effective parental engagement and cooperation was needed to gain parental consent for their child to participate in school or nursery based programmes and this was essential for their successful implementation.

Three studies reported facilitating factors relating to engagement of people within, or external to, the oral health intervention or programme (2 [++] UK[1,5], and 1 [-] Australia[6]) and 1 (++) UK study[2] also reported barriers. Together they provided a consistent view that engaging key individuals (such as parents and teachers for school based programmes) was an important and often essential element of implementation.

[1] Holme et al. 2009 (++)
[2] Yusuf et al. 2012 (++)
[3] Macpherson et al. 2010 (-)
[4] Diamond et al. 2003 (-)
[5] Stokes et al. 2009 (++)
[6] Burchell et al 2006 (-)

Applicability to UK

Of the 10 included studies 7 were based in the UK so are directly applicable to the UK. Two more were based in the US and 1 in Australia. The views from these studies appeared broadly applicable to the UK setting, although a specific barrier in 1 (US) - problems finding a dentist that takes Medicaid patients - has limited direct applicability to the UK, which has a different healthcare financing model to the US.

Narrative Summary

Ten studies reported views on barriers or facilitators relating to specific practices and processes. The contributing studies varied considerably in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 13 for reference.

A large body of information within this theme concerned the closely interlocking sub-themes of communication and collaboration, coordination and engagement. These related to activities and relationships within the programme or intervention, but also between those in the intervention and those outside, such as service users, parents or dentists. These sub-themes were often reported together within the same study. Another subtheme reported from multiple sources related to the process of obtaining parental consent for the child to participate - a critical part of implementing many of the school based interventions and programmes. The narrative review is structured to mirror these major sub-themes.

While 8 of the 10 studies included in this theme contributed views about coordination and collaboration, it is noteworthy that a large amount of the data for communication, gaining consent and engagement came from 5 of the 10 included studies categorised as complex interventions, with a particular influence from 2 of the more detailed and data rich studies (Holme et al. 2009 [++] and Yusuf et al. 2012 [++] England).

The first was an evaluation of the Childsmile programme; a complex childhood oral health service targeting under 5s that combined both population based and targeted approaches towards the most vulnerable families (Holme et al. 2009 [++] Scotland).

The second an evaluation of the Keep Smiling pilot programme, which included school based fluoride varnish and tooth brushing targeting children aged 3 to 7 at five state primary schools and one children's centre in a deprived area of London (Yusuf et al. 2012 [++] England). A third UK study also reported views on the Childsmile programme, but in far less detail (Macpherson et al. 2010 [-] Scotland).

It is perhaps not surprising that collaboration, coordination and engagement were prominent issues expressed in these programmes as they were complex involving many programme staff necessitating complex interactions and collaborations. By this very nature they might be expected to report relying more heavily on these interlocking elements than simpler programmes.

Despite key differences there was a consistent view that effective communication, collaboration, coordination and engagement was a facilitating factor in programme or intervention implementation. Conversely, ineffective communication, collaboration, coordination or engagement were linked to barriers to implementation.

Coordination and collaboration

Barriers or facilitators relating to the internal coordination of the oral health intervention or programme and/or collaboration with external agencies were reported in 8 of the 10 included studies so were a relatively prevalent issue within this theme (Diamond et al. 2003 [-] US, Yusuf et al. 2012 [++], Blinkhorn 2008 [-] England, Kranz et al. 2011 [+] US, Trubey and Chestnutt 2013 [+] Wales, Holme et al. 2009 [++] Scotland, Stokes et al. 2009 [++] England and Coles et al. 2012 [+] Scotland).

Five studies reported collaboration with external agencies had facilitated their oral health intervention or programme (Coles et al. 2012 [+] Scotland, Diamond et al. 2003 [-] US, Blinkhorn 2008 [-] England Stokes et al. 2009 [++] England, Yusuf et al. 2012 [++] England) whereas 3 studies reported barriers to implementation related to collaboration (Kranz et al. 2011 [+] US, Yusuf et al. 2012 [++] England, Holme et al. 2009 [++] Scotland). One study reported views seemingly opposing the formation of links between schools and dental practices but there was inconsistency in the underlying study that called into question whether this was accurate (Trubey and Chestnutt 2013 [+]).

Coordination and collaboration facilitators

The provision of a list of local NHS dental practitioners that accepted homeless service users was reported to be the single most important piece of paperwork distributed as part of the “Something to Smile About” oral health programme that trained staff working with homeless people to offer health advice and signpost users to dental services (Coles et al. 2012 [+] Scotland.) The list was reported to help homeless service users overcome barriers to access experienced by some who reported some dentists’ charged a registration fee or refused to accept patients with a hostel address. The support of an oral health contact within the NHS to provide a referral pathway was also reported as very important.

Diamond et al. 2003 reported that parent teacher associations and forming a working group of community leaders had facilitated mobilising community support for the DentCare programme in the US (Diamond et al. 2003 [-] US). Similarly, the appraisal of the brushing for life programme identified the community dental service oral health promoters as pivotal in the implementation (Blinkhorn 2008 [-] England). Aside from the staff themselves (see section 4.5.3) their contribution in linking, communicating and coordinating with people and agencies as well as forming networks were reported as key facilitators.

Stokes et al. 2009 reported homogenous views on how external expertise and input into the programme was viewed as necessary for delivering oral health promotion as part of Healthy Schools programmes (Stokes et al. 2009 [++] England). External expertise was valued in relation to raising the profile of oral health and providing input to schools, local programmes and strategic groups.

Collaboration and coordination between teachers, dental providers, community champions, school tooth champions, the dental public health team and parents appeared key to implementing the Keep Smiling pilot programme and were highlighted as important by multiple stakeholders in the evaluation of the programme (Yusuf et al. 2012 [++] England). The summary of findings from all stakeholders in the evaluation reported strong and recurring themes on communication, collaboration and engagement identifying them as necessary and essential for

successful implementation of the programme. For example, the oral health promoters who were involved mainly in the tooth brushing element of the programme perceived that dental teams had an important role in promoting oral health in schools and Children's Centres and how despite school staff being busy with academic commitments, their involvement was essential in the delivery and sustainability of health promotion programmes. This was in respect to both communication and engagement between different staff groups involved in delivering the programme, and between the programme staff, parents and the wider community.

Coordination and collaboration barriers

Directors and health coordinators reported finding a dentist that sees young children or accepts Medicaid a barrier to implementing oral health activities in early head start centres directed toward children and parents from low-income households in the US (Kranz et al. 2011 [+] US reported). Similarly, oral health promoters reported that a lack of formal links between dental practices and schools was a barrier encountered in implementing the supervised tooth brushing element of the Keep Smiling pilot programme in the England (Yusuf et al. 2012 [++] England).

A lack of clear professional roles and lack of awareness of Childsmile roles were also reported as barriers to the implementation of the Childsmile programme as a whole (Holme et al. 2009 [++] Scotland). It was suggested that professional boundaries and roles must be clear and referral routes should be standardised where possible.

Trubey and Chestnutt 2013 highlighted how forming external links with local dentists may not always be valued amongst staff of a school based daily supervised tooth brushing programme in Wales (Trubey and Chestnutt 2013 [+]). A survey of staff revealed strong disagreement with the statement that "I think it's important to develop close links with local dentists". However, due to the inconsistency in the underlying study, it is not clear whether the strong disagreement was about "close" links with dentists, or "closer links" with dentists. Nonetheless the authors highlighted how this was in contrast to national policies that encouraged greater integration and links between NHS dental services.

Communication

Lack of communication was reported to be a problem in many studies but was only reported as a barrier to implementation in 2 (Holme et al. 2009 [++] Scotland, and Yusuf et al. 2012 [++] England). However, these provided rich data on the issues encountered. One of these studies (Yusuf et al. 2012 [++] England) also highlighted instances where communication had facilitated the intervention implementation.

Communication barriers

Multiple barriers relating to specific practices and processes were identified by the professionals of the Childsmile intervention (Holme et al. 2009 [++] Scotland). These included lack of communication between Childsmile staff and other professionals and between management and staff as well as not being kept up to date about on-going changes to advice or resources within the programme. Poor inter-professional relationships were also reported. It was suggested organisational support could overcome professional and communication barriers by ensuring clear professional boundaries and roles alongside clear pathways to support referrals, interaction and shared learning.

The Keep Smiling pilot programme identified a number of communication related barriers (Yusuf et al. 2012 [++] England) and reported that the levels and extent of communication within schools varied and needed to be strengthened. Barriers included short timescales for communication; too little communication between head teachers, tooth champions and teachers, and confusion among some staff about the aims of the programme and what it involved in practice.

The school tooth champions reported it was evident that schools varied in their process for internal communication about the programme. Views were also expressed that the coordination and communication could have been improved prior to implementation as tooth champions did not always know who would be visiting the schools, what would be expected from school staff, how many school staff would be required, necessary equipment, when the programme was expected to be carried out and which teaching sessions would be affected.

The stakeholders of the pilot programme reported that communication within schools may need to be strengthened to ensure there is not a communication breakdown. This included the suggestion that external communication could be to more than one person in the school to ensure messages were acted upon in cases of absence. Parents of the children in the programme also reported there was limited information or communication to them from the teachers about the Keep Smiling programme.

Despite very positive feedback on organisation and communication the Dental Public Health Team reported it was not possible to plan everything in advance or be aware of all other scheduled or unscheduled activities in each school in advance of the programme. For example, there were last minute consent forms being returned in most of the schools, which created more work on the day of delivery of the programme. They recommended it would be useful to have a single point of contact for the school to communicate with; someone who knew about the different programmes being delivered.

Communication facilitators

The tooth champions in the Keep Smiling pilot programme identified a number of facilitatory factors, one of which was the effective communication between the tooth champions and the dental public health teams. This was rated by the tooth champions as good to excellent, the preferred contact method was email and they noted it was useful to have a single point of contact within the dental public health team (Yusuf et al. 2012 [++] England).

Specific issues around consent

Four studies reported consistent views that parental engagement and cooperation was needed to gain parental consent for their child to participate in their respective oral health intervention or programme (Diamond et al. 2003 [-] US, Macpherson et al. 2010 [-] Scotland, Holme et al. 2009 [++] Scotland and Yusuf et al. 2012 [++] England). Hence, if it was effective, parental communication and engagement to support consent acted as a facilitator to implementing the intervention, whereas a lack of engagement and communication with parents on the issue of consent had the

potential to act as a significant barrier. Both scenarios were reported in the literature, sometimes within the same intervention or programme.

Barriers to consent

The staff of Childsmile programme in Scotland reported that parental engagement in returning consent forms was a major barrier to the programme implementation (Holme et al. 2009 [++] Scotland). In relation to Childsmile Nursery, awareness raising efforts were reportedly tried but were of limited success; hence, it was reported nursery staff resorted to a more proactive role in gaining consent by standing at the door hoping to engage parents.

The Childsmile staff reported on-going difficulties relating to the need for repeated consent forms and updated medical information, which were reported to potentially lower the numbers participating (Holme et al. 2009 [++] Scotland). Again, local solutions were attempted such as targeting parents at children drop off times, but this approach had limitations as it wasn't uncommon for the people dropping the children off not to be a parent or carer, so not always in a position to give consent or update medical information. In light of these issues, they concluded that obtaining consent and updating medical records was likely to "continue to pose problems".

Facilitators to consent

One study reported that parental cooperation was essential for children who required dental treatment not provided at preventive clinics as part of the establishment of a community-based oral health care programme primarily targeting children in dentally underserved communities in the US (Diamond et al. 2003 [-] US).

Oral health promoters in a second study reported how raising awareness among parents with active engagement may overcome some of the barriers in gaining positive consent for children participating in the tooth brushing element of the Keep Smiling pilot programme in the UK (Yusuf et al. 2012 [++] England). The community champions of the same programme also reported how parent advocates and using community champions who had children in the school had helped facilitate consent for participation. The summary of findings from all stakeholders reported that giving

information leaflets and consent forms in the local language (Somali and Arabic in the case of the pilot programme in White City, London, England) may help parents make an informed decision and further facilitate consent.

The importance of gaining consent was reported in two further studies, both concerning the Childsmile programme in Scotland (Macpherson et al. 2010 [-] Scotland and Holme et al. 2009 [++] Scotland).

For Childsmile Nursery the success of the fluoride varnish programme was reported to largely depend on gaining consent from parents (Macpherson et al. 2010). Clear working roles were also reported to facilitate the consent process, with Childsmile staff establishing close connections with the person gaining consent (especially nursery staff) and parents (Holme et al. 2009 [++] Scotland). The development of computerised record keeping in particular was reported to make the consent process more streamlined. Obtaining written consent for tooth brushing was also important as well as for fluoride varnish. This was reported to be facilitated by getting the consent form filled in at the nursery during enrolment rather than in the home.

Engagement

Three studies reported facilitating factors relating to engagement of people within or external to the oral health intervention or programme (Burchell et al 2006 [-] Australia, Stokes et al. 2009 [++] England Yusuf et al. 2012 [++] England) while 1 also reported barriers (Yusuf et al. 2012 [++] England).

Together they provided a consistent view that engaging key individuals within the interventions was an important and often essential element of implementing the oral health programmes. Whether it was engaging the service user using assertive outreach (Burchell et al 2006 [-] Australia), engaging parents and staff as part of a whole school approach to promoting oral health within Healthy Schools (Stokes et al. 2009 [++] England), or engaging a large number of stakeholders involved in a complex intervention focussing on supervised tooth brushing and fluoride varnish application - including teachers, class room assistants, head teachers, parents, community based champions, school based tooth champions, dental service

providers, dental public health teams and oral health promoters (Yusuf et al. 2012 [++] England).

Facilitators

The description of the implementation of the Dental as Anything programme - a Community Health Service Dental Outreach programme to People with a Mental Illness - highlighted how the combination of health promotion and an assertive outreach model was “critical” in delivering the intervention (Burchell et al 2006 [-] Australia). The authors also highlighted the potential facilitatory effect of returning to the same venues on different outreach trips to allow peer modelling and build familiarisation with dental services in an unintimidating environment.

Engaging and involving parents and staff was reported to be a vital part of the whole school approach of promoting oral health within Healthy School programmes in England (Stokes et al. 2009 [++] England). This was not elaborated on further.

The summary of findings from stakeholders in the Keep Smiling pilot evaluation also reported strong and recurring themes on communication, collaboration and engagement identifying them as necessary and essential for successful implementation of the programme (Yusuf et al. 2012 [++] England). This was in respect to both communication and engagement between different staff groups involved in delivering the programme, and between the programme staff, parents and the wider community.

Dental teams and oral health promotion teams perceived that engagement of dental public health teams with head teachers via the head teacher’s forum was necessary for successful implementation of the programme. The evaluation also highlighted that engagement with parents was important and needed to be extended including coffee mornings, assembly, and parental sessions.

The oral health promotion teams cited that engaging and involving school staff was essential in delivering health promotion programmes in order to ensure universal implementation with wider engagement from class teachers or class room assistants.

Dental teams and oral health promotion teams welcomed collaboration with local schools and children's centre and enjoyed working in an outreach setting.

The active involvement of community champions varied by school but they were reported to be considered a valuable resource. Consequently, the evaluation report suggested community champions need to be supported to integrate into future programmes, especially in terms of community engagement early in the programme. Furthermore, engagement and identification of local dental teams and the oral health promotion teams were reported to be essential in delivering the fluoride varnish and tooth brushing sessions.

Barriers

The oral health promoters of the Keep Smiling pilot programme highlighted a number of barriers encountered during implementation of the tooth brushing element of the programme (Yusuf et al. 2012 [++] England). These included difficulties engaging with schools and teachers, although their active involvement was reported to be vital to the success of future programmes. Limited engagement with parents, perceived lack of school staff involvement and limited community and parental engagement were also reported as barriers. As described above in the context of parental consent issues, the oral health promoters reported that raising awareness among parents with active engagement may overcome some of the barriers in gaining positive consent for children participating in the programme. The barriers reported in engaging parents to support consent reported by Holme et al. 2009 above (See "Specific Issues of consent" subtitle), suggest this may not be straightforward.

4.5.3 Specific staffing considerations

Eight studies reported views on barriers or facilitators relating to specific staffing considerations. This was described as the following in the qualitative framework coding scheme:

- Formulation of tasks (including HR management, workgroups/teams and internal functioning) enhances strategic planning and delineates clear roles and responsibilities for each task
- Leadership (setting priorities, establishing consensus, offering incentives and managing overall implementation)
- Programme champion (trusted and respected individual able to rally and maintain support for the new programme, and negotiate solutions to emerging problems)
- Managerial/supervisory/admin support (extent to which top management and supervisors support and encourage providers during implementation)

The contributing studies varied considerably in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 14 for reference.

Study by study results can be found in Appendix F, section 13.4.3.

Table 14 Summary of characteristics of studies contributing to the theme: specific staffing considerations

Author Date	Quality score	Country	Target population	Intervention category	Study details
Burchell et al. 2006	-	Australia	Complex needs (Mental Health)	Complex Intervention	See Appendix E Section 12.4
Douglass et al. 2005	-	US	School children	Improving access	See Appendix E Section 12.8
Diamond et al. 2003	-	US	School children (dentally underserved communities)	Complex Intervention	See Appendix E Section 12.7
Holme et al. 2009	++	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.9
Maher et al. 2012	-	Australia	Under 5s	Complex Intervention	See Appendix E Section 12.13
Owens 2011a	+	Republic of Ireland	Complex needs (children with disabilities)	Complex Intervention	See Appendix E Section 12.16
Rajabiun et al. 2012	+	US	Complex needs (HIV/AIDS)	Improving access	See Appendix E Section 12.18
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 13: specific staffing considerations.

Eight studies provided evidence on barriers or facilitators relating to specific staffing considerations.

Three (1 [-] Australia[1], 1 [+] Republic of Ireland[2] and 1 [-] US[3]) reported problems recruiting and retaining key staff that impacted implementation including: uncompetitive pay[1]; embargos on recruitment[2]; and recruiting and retaining dentists. A fourth (1 [++] UK[4]) reported concerns about a lack of capacity in the extended duties dental nurse workforce to recruit from.

One (++) UK study[1] reported that a lack of clear roles and responsibilities amongst school staff had acted as a barrier to processing and obtaining consent from parents and engaging parents effectively. Barriers and facilitators related to gaining parental consent are also discussed in Evidence Statements 8, 9b, 11b 12b. Dentists' in 1 (++) UK study[1] reported barriers relating to time consuming non-computerised administrative duties when recording programme activity. Issues of administration are also reported in Evidence Statement 9b.

Specific staff members and staff roles within the intervention or programme team were identified as being important in facilitating implementation in 6 diverse studies (2 [++] UK[4,5], 1 [+] US[6] and 3 [-], 2 US[3,8] and 1 Australian[7]). Often more than one key staff role was highlighted within the same programme, particularly in the more complex programmes.

Multiple stakeholders in 1 (++) UK[4] study reported an overreliance on certain staff members or teams during the implementation of a pilot oral health programme that was not sustainable. They reported alternative staffing roles and responsibilities for day to day logistic delivery of the programme needed to be considered in the future.

[1] Burchell et al 2006 (-)
[2] Owens 2011a (+)
[3] Douglass et al. 2005 (-)
[4] Yusuf et al. 2012 (++)
[5] Holme et al. 2009 (++)

[6] Rajabiun et al. 2012 (+)

[7] Maher et al. 2012 (-)

[8] Diamond et al. 2003 (-)

Applicability to UK

Two of the 8 included studies were based in the UK so are likely to be directly applicable. Three were based in the US, 2 in Australia and 1 in the Republic of Ireland. While specific staff issues and staff roles may vary by country, the views and considerations expressed in the international studies seemed broadly applicable to the UK setting.

Narrative Summary

Eight studies reported views on barriers or facilitators relating to specific staffing considerations. Similar views were expressed across different studies and are grouped together below.

Barriers

Recruiting and retaining staff

Problems recruiting and retaining key staff necessary for programme implementation were cited by 3 studies (Burchell et al 2006 [-] Australia, Douglass et al. 2005 [-] US and Owens 2011a [+] Republic of Ireland).

Burchell et al 2006 reported the view that this was mainly due to funding, which did not allow their community health outreach programme targeting adults with mental health problems to pay staff a competitive rate compared with other sectors. A similar funding-staff link was highlighted in Owens 2011a, which reported budgets had played a large part in shaping service delivery of its programme targeting families of children with disabilities. They reported that an embargo on staff recruitment, coupled with staffing shortages had caused delays in parents accessing the intervention services (See section 4.2.1 for issues related to funding). Douglass et al. 2005 reported that of the 3 mobile dental van interventions they assessed in the US, all reported problems recruiting and retaining dentists. They did not go on to discuss if this was specifically because of pay issues or funding.

Obtaining parental consent

The tooth champions of the Keep Smiling programme reported that some schools were not as active in their engagement with parents for consent as others (Yusuf et al. 2012 [++] England). This was due to a lack of identification of clear roles and responsibilities of school staff in processing and obtaining consent from parents - a key component of implementing the school programme. They also reported how children exerted some influence over their parents in gaining consent for their involvement in the programme reporting how seeing their peers in the programme made them keen to be included. This form of peer modelling appeared to be facilitating consent, but it was unclear how prevalent or influential this was on overall consent rates.

Barriers and facilitators related to gaining parental consent for their child to participate in school or nursery based interventions are also discussed in sections 4.4.2-3 and 4.5.1-3.

Administrative support role

The views of the dental providers in the Keep Smiling pilot programme reported barriers relating to time consuming and non-computerised administrative duties. The programme gave remuneration for these duties and reported it was anticipated that dental nurses would carry out the admin tasks. However, this was reported not to be the case in practice. The dentists reported feeling they needed to manage this process to ensure that data was entered correctly in order to receive the correct payments from the primary care trust. The dentists' reported that they needed some support with the administrative tasks associated with the programme.

Other staff related issues identified in the Keep Smiling programme including the suggested utilisation of additional duties dental nurses to provide fluoride varnish rather than dentists – reducing the cost of the programme. However, it was simultaneously reported that there may not be enough capacity in the extended duties dental nursing workforce to meet this suggested improvement.

Facilitators

Specific staff and staff roles within the intervention or programme team were reported as being important in facilitating implementation in 5 studies (Yusuf et al. 2012 [++] England, Holme et al. 2009 [++] Scotland, Rajabiun et al. 2012 [+] US, Maher et al. 2012 [-] Australia, and Douglass et al. 2005 [-] US).

Often there was more than one key staff role highlighted within the same programme, particularly in the more complex programmes involving many different personnel and varied roles. One study repeatedly highlighted that although key teams or members of staff were crucial to the implementation of a pilot oral health programme (Yusuf et al. 2012 [++] England) the overreliance of them may not be sustainable for future programmes and alternative staffing roles and responsibilities needed to be considered.

Key intervention or programme staff members

Douglass et al. 2005 reported how the driver of the mobile dental health vans was very important in the intervention implementation (Douglass et al. 2005 [-] US). The report described how an integrated role, covering not only driving the vehicle, but also maintenance, set-up and shepherding children between class room and mobile unit, was the preferred set up. They also reported how they had employed more dental hygienists than dentists, had effective programme coordinators, managers and data management that appeared to be important facilitatory elements of the interventions.

The evaluation of a complex oral health programme to facilitate prevention, early identification and intervention of early childhood cares in under 5s in Australia reported how clear roles and responsibilities had been achieved (Maher et al. 2012 [-] Australia). Consistent with Douglass et al. 2005, programme coordinators were reported to have been valued by nurses in facilitating referral elements of the programme.

The service users' perspectives on a programme aiming to improve oral health-care practices among people living with HIV/AIDS revealed they valued friendly staff and a comfortable dental environment (Rajabiun et al. 2012 [+] US). This was cited as a main reason why some were able to re-engage with oral health care and increase

their motivation to improve their oral health. They also reported valuing having an HIV knowledgeable dentist and a care coordinator to facilitate oral hygiene education and reinforce oral health messages from dental staff. The authors of the qualitative study stated that the roles played by the dentist, dental staff, and the general environment of the dental setting appeared critical to participants seeking and returning for dental services.

As reported in Rajabiun et al. 2012, friendly staff were identified as a facilitator in the Childsmile Nursery element of the Childsmile programme, particularly in encouraging participation when children were unsettled or reluctant to participate (Holme et al. 2009 [++] Scotland). Friendly staff are also discussed in section 4.7.1.

The evaluation of the Keep Smiling pilot programme reported that tooth champions, that is, advocates for the oral health programme selected from within the schools, were viewed as essential for programme implementation, even though the extent of involvement and delivery of the programme varied by school (Yusuf et al. 2012 [++] England). However, there were reportedly large demands on their time so it was suggested the programme need more than 1 per school to balance the workload. It was also suggested that the programme could recruit parents as tooth champions to complement the school tooth champions.

Organisation from the dental public health team was also described as pivotal as they were responsible for engaging with head teachers from the start of the programme and for introducing the concept and implementation of the programme. However, it was reported from multiple stakeholders that despite the intense input from the dental public health team being valued for the pilot programme, it was viewed as unsustainable if the programme was rolled out without modification. Hence, the evaluation report concluded the day to day logistic delivery of the programme needed to be shared between dental teams, oral health promoters and the schools for future programme roll out. A similar issue was identified with the role of the oral health promoters who again spent a large and potentially unsustainable amount of time and resource on the pilot programme. The head teacher's support was also reported to be essential in encouraging collaboration between the different

stakeholders and supporting dental health and wellbeing of children in a school setting.

The lessons learned through implementing a community-based oral health care programme in the US (Diamond et al. 2003 [-] US) briefly reported how staff with a different skill mix were needed during the initial stage of the programme compared to the sustainable phase of the programme. During the initial development of the programme they reported it was important to have goal orientated staff, for example, to ensure participation in schools by actively seeking out non attendees or finding replacements.

4.6 Prevention support system

This conceptual category contains the themes:

- Training
- Technical assistance

4.6.1 Training

Eight studies reported views on barriers or facilitators relating to training in the context of the conceptual category, prevention support system, which was described in the qualitative framework as:

- Approaches to insure provider proficiencies in the skills needed to conduct the programme and enhance providers' sense of self-efficiency
- Adequate resources (financial, time and staff)
- Supportive organisation factors in place (leadership, shared vision etc.)
- Addressing providers skills and expectations
- Active learning or modelling

The contributing studies varied considerably in their oral health interventions, their settings and their qualitative methodology. Key characteristics of the contributing studies are summarised in Table 15 for reference.

Study by study results can be found in Appendix F, section 13.5.1.

Table 15 Summary of characteristics of studies contributing to the theme: training

Author Date	Quality score	Country	Target population	Intervention category	Study details
Blenkinsopp et al. 2002	+	England (UK)	General population	Health Education and/or Advice	See Appendix E Section 12.2
Holme et al. 2009	++	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.9
Kranz et al. 2011	+	US	Under 5s (from low income families)	Health Education and/or Advice	See Appendix E Section 12.10
Macpherson et al. 2010	-	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.12
Maher et al. 2012	-	Australia	Under 5s	Complex Intervention	See Appendix E Section 12.13
Prokhorov et al. 2002	+	US	School children	Health Education and/or Advice	See Appendix E Section 12.17
Wolfe and Huebner 2004	-	US	Under 5s	Complex Intervention	See Appendix E Section 12.22
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 14: training.

Eight studies provided evidence on barriers or facilitators relating to training.

Six studies (all targeting under 5s) provided consistent evidence that training or elements of training had facilitated, or potentially facilitated, the implementation of the programme or intervention in some way (2 [++] UK[1,2], 1 [+] US[3] and 3 [-]; 1 UK[4], 1 US[5], and 1 Australia[6]). Consistent with this, 1 (+) US study[7] reported lack of training may have acted as a barrier to implementation. Two studies (1 [++] UK[2] and 1 [+] UK[8]) provided less clear views. One ([++] UK[2]) suggested that training could be extended to more people to improve the programme[2], while the second ([+] UK[8]) reported positive and negative feedback on the value of training received to implement the intervention[8].

Facilitatory elements included: providing training sessions for nursery staff to increase awareness of the importance of oral health[1], increased self-efficacy to deliver oral health interventions or programmes as a result of training[2,5,6], and increased oral health activity as a result of training[3].

Respondents in 1 (+) US study[7] reported a lack of training was a key barrier to delivering spit tobacco prevention programmes. Perhaps surprisingly, this included some staff specifically trained in the prevention of spit tobacco use. This counterintuitive view was not explored further in the study but highlights the possibility that people adequately trained may experience other barriers that stop them using their training and skills fully.

[1] Holme et al. 2009 (++)
[2] Yusuf et al. 2012 (++)
[3] Kranz et al. 2011 (+)
[4] Macpherson et al. 2010 (-)
[5] Wolfe and Huebner 2004 (-)
[6] Maher et al. 2012 (-)
[7] Prokhorov et al. 2002 (+)
[8] Blenkinsopp et al. 2002 (+)

Applicability to UK

Four of the 8 included studies were based in the UK, 3 in the US and 1 in Australia. While elements of the internationally based studies may not be directly applicable to the UK, the considerations they highlighted related to training seem broadly transferable and applicable to the UK setting.

The findings on spit tobacco have some applicability to the UK; however, readers should consider the potential impact of differences in the user profiles and prevalence of split tobacco use between the UK and US. For example, the US study suggested spit tobacco use was most common in some rural adolescent populations, whereas in the UK it has been reported that use is particularly prevalent in people from South Asian communities.

Narrative Summary

Eight studies reported views on barriers or facilitators relating to training.

Six of the 8 studies targeted under 5s, 1 targeted school children and 1 the general population. The intervention details varied considerably but they were broadly categorised into either complex interventions or interventions giving health education and or advice. Key characteristics of the contributing studies are summarised in Table 15 for reference.

Six studies (all targeting under 5s) provided consistent views that training or elements of training had facilitated, or potentially facilitated the implementation of the programme or intervention in some way (Macpherson et al. 2010 [-] Scotland, Holme et al. 2009 [++] Scotland, Wolfe and Huebner 2004 [-] US, Yusuf et al. 2012 [++] England, Kranz et al. 2011 [+] US and Maher et al. 2012 [-] Australia). In line with this, 1 study (Prokhorov et al. 2002 [+] US) reported lack of training may have acted as a barrier and 2 studies provided additional less clear views (Blenkinsopp et al. 2002 [+] England and Yusuf et al. 2012 [++] England).

Facilitators

One study (Holme et al. 2009 [++] Scotland) reported that the provision of training sessions for nursery staff to increase awareness and the importance of oral health was a facilitating factor of the implementation of the Childsmile Nursery programme. In addition, providing active support for the tooth brushing element of the Childsmile programme and visits by oral health promoters or Childsmile staff to raise the awareness of the children and staff were reported as helpful. It was also recognised that staff delivering the Childsmile programme would require specific training (Macpherson et al. 2010 [-] Scotland). In response, a training course was developed to train dental nurses in the principles of the Childsmile programme and in the extended duty of applying fluoride varnish.

Three studies reported consistent views that the training they had received had increased their self-efficacy to deliver oral health interventions or programmes (Wolfe and Huebner 2004 [-] US, Yusuf et al. 2012 [++] England and Maher et al. 2012 [-] Australia).

One related to attending a training presentation for non-dental health professionals in which the majority of attendees reported it would lead them to increase oral health promotion in their daily routines - one of the aims of the education programme itself (Wolfe and Huebner 2004 [-] US). The second related to increases in confidence to promote oral health locally that were reported by community champions after attending a training session prior to the implementation of the Keep Smiling pilot programme, a complex intervention providing fluoride varnish and tooth brushing to children aged 3 to 7 (Yusuf et al. 2012 [++] England). The third reported that a training and guidelines document given as part of the Early Childhood Oral Health (ECOH) Programme in New South Wales, Australia was found by nurses to have helped them develop oral health anticipatory guidance and screening practice (Maher et al. 2012 [-] Australia).

One study attempted to quantify the link between training and oral health related activities in attempting to establish whether oral health interventions or advice were being given within Early Head Start programmes in the US (Kranz et al. 2011 [+] US). This reported that teachers who received dental health training from early head

start centres engaged in more oral health education activities with parents and children compared with teachers who did not receive or recall receiving training.

Barriers

As well as training being a facilitator, lack of training was reported to act as a key barrier in 1 study (Prokhorov et al. 2002 [+] US). Community educator respondents to a large state-wide survey reported lack of training was a major barrier to them implementing spit tobacco prevention and cessation counselling in the US. Perhaps surprisingly, this included Drug Abuse Resistance Education (DARE) officers who were reported to be specifically trained in the prevention of spit tobacco use. The reason for this counterintuitive view from the DARE officers was not explored further in the study. However, it does serve to highlight the possibility that even if people are adequately trained there may be other barriers that stop them using this training.

Mixed or unclear views

Pharmacists' taking part in an intervention to offer opportunistic advice to the general public on 4 health topics, 1 of which was oral health, participated in six days' training on the transtheoretical model (TTM) of behaviour change and motivational interviewing to help them engage the public in the health topics (Blenkinsopp et al. 2002 [+] England). Feedback on the training presented a mixture of views, with some reports that pharmacists' thought it was just common sense, or thought they already knew it. Certain aspects of the training, e.g. a role play, also received negative comments from many but others reported it was the best part of the course. Whether the participants engaged with TTM or adopted it as their consultation style was not assessed so it is unclear if the training did act as a facilitator to the intervention as was intended.

The views from stakeholders in the Keep Smiling pilot programme reported that oral health training should be extended to not only include school staff tooth champions but also primary school teachers and classroom assistants in order to distribute the workload among staff (Yusuf et al. 2012 [++] England). Tooth champions also reported that school staff had a limited knowledge of what to expect from the intervention and thought an information sheet describing the logistics of the

programme might be useful, alongside investing more time in establishing the processes for implementation of the programme. This could be seen as an example of facilitating the implementation by putting supportive organisation factors in place in response to perceived barriers. These were prospective recommendations so it is not known if these proposed measured aided implementation when carried out.

4.6.2 Technical assistance

Three studies reported views on barriers or facilitators related to technical assistance. To guide coding this was described in the qualitative framework as:

- Combination of resources offered to providers once implementation begins, including: retraining skills, training new staff, providing emotional support and promoting local problem solving efforts
- Early monitoring and evaluation prompting retraining as needed
- Staff turnover and appropriate contingencies.

Key characteristics of the contributing studies are summarised in Table 16 for reference.

Study by study results can be found in Appendix F, section 13.5.2.

Table 16 Summary of characteristics of studies contributing to the theme: technical assistance

Author Date	Quality score	Country	Target population	Intervention category	Study details
Holme et al. 2009	++	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.9
Macpherson et al. 2010	-	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.12
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 15: technical assistance.

Three studies provided evidence on barriers and facilitators related to technical assistance. This theme covered the combination of resources offered to providers once implementation begins; early monitoring and evaluation prompting retraining; and staff turnover and appropriate contingencies.

Evidence from 2 UK studies evaluating the same oral health programme (1 [++][1] and 1 [+][2]) reported how a lack of initial and on-going training and support had acted as a barrier to implementation. This caused confusion among staff about existing and planned programme changes as they were not kept up to date with developments. Some also reported struggling to maintain professional competence on an on-going basis through lack of training and support.

Evidence from 2 UK studies (1[+][2] and 1 [++][3]) reported how feedback on the initial implementation of the programme; feedback on training provision; and local problem solving efforts once the programme was underway, had led to suggestions for improvements to facilitate subsequent implementation. However, the studies did not report whether the suggestions were successful at facilitating subsequent implementation in practice, so should be interpreted cautiously.

[1] Holme et al. 2009 (++)
[2] Macpherson et al. 2010 (-)
[3] Yusuf et al. 2012 (++)

Applicability to UK

All 3 studies were based in the UK so are directly applicable to the UK setting.

Narrative Summary

Three studies reported views on barriers or facilitators related to technical assistance.

Two studies reported views about the same Childsmile programme, a complex childhood oral health service targeting under 5s that combines both targeted and population based approaches (Holme et al. 2009 [++] Scotland and Macpherson et

al. 2010 [-] Scotland). The third concerned the Keep Smiling pilot programme, a complex intervention that provided fluoride varnish and tooth brushing to children aged 3 to 7 at five state primary schools and one children's centre in the ward of White City and Northolt, one of the most deprived areas of the borough where local health needs were high (Yusuf et al. 2012 [++] England).

Overall the views were consistent that a lack of initial and on-going support and training had acted as a barrier to implementation in the Childsmile programme. In both the Childsmile and Keep Smiling programmes, feedback on the initial implementation of the programme, on training, and local problem solving efforts had led to suggestions for improvements to help facilitate subsequent implementation. However, the studies did not report whether the suggested improvements were successful at facilitating subsequent implementation in practice, so should be interpreted cautiously.

Barriers

Professionals in the Childsmile programme identified barriers related to the lack of resources and support offered once implementation of the programme began, which included changing paper work, not being kept up to date about changes to advice and resources, and not being able to maintain professional competence on an on-going basis (Holme et al. 2009 [++] Scotland). The study reported this indicated there was a need to address a lack of on-going professional development and provide on-going briefing.

A lack of structured training both at the start of implementation and on an on-going basis, was also reported to exacerbate existing barriers such as lack of time and staff numbers concerning the delivery of a tooth brushing element of the programme (Holme et al. 2009 [++] Scotland). In response to the lack of training, some staff reported feeling it was up to them to develop a training programme independently. Against the background of lack of training, input from oral health teams on what should be done, was not always perceived as supportive by staff.

Suggested improvements

Modifications to the training course provided to the dental nurses was reported to occur in the Childsmile programme after feedback from an initial training round had identified specific gaps and areas for improvement (Macpherson et al. 2010 [-] Scotland). The feedback also led to the production of a bespoke Childsmile care manual providing age-specific guidance and support for health professionals to deliver Childsmile oral health sessions. This appeared to be addressing limitations identified in the initial training scheme but it wasn't explicitly stated if this facilitated subsequent programme implementation.

Similarly, the oral health promoters in the Keep Smiling pilot programme gave suggestions for ensuring the successful delivery of future programmes including the training of teaching staff on oral health and a protocol for delivering the tooth brushing programme (Yusuf et al. 2012 [++] England). Views from the dental public team involved in the same intervention also included practical pointers that seemed to have been the result of local problem solving efforts once the programme was underway. They reported it was useful to photocopy the class lists (with consent marked) for each tooth brushing team to have on the day and have a spare list to give to the class teacher so that everyone was working from the same list.

In line with Macpherson et al. 2010, these changes appeared to be in response to specific barriers encountered but were not explicitly stated as facilitating intervention or programme implementation.

4.7 Service user views

This conceptual category was added to the original best fit framework and contains the theme:

- Acceptability

4.7.1 Acceptability

Four studies reported views on barriers or facilitators relating to service user acceptability of the intervention or programme. To guide qualitative framework coding acceptability was described as service user acceptance of the programme or

intervention content, format or location, for example, whether the intervention was implemented in an appropriate language and venue.

This theme was closely related to the theme of compatibility (Section 4.4.1) and the contextual appropriateness of the intervention or programme, but is reported here exclusively from the service users' perspective.

Key characteristics of the contributing studies are summarised in Table 17 for reference. The contributing studies had some key similarities. Two of the contributing studies were complex oral health interventions based in the UK that targeted under 5s (1 also targeted school children). Both also had elements that targeted children from deprived areas. The other 2 studies were from the US, and both targeted people with HIV/AIDS in order to improve access to mainstream oral health care.

Study by study results can be found in Appendix F, section 13.6.1.

During the process of synthesising the evidence it was clear that the line between describing intervention effectiveness and intervention implementation was not always clear for this framework theme category. Some barriers and facilitators to success appeared relevant to those who would seek to design and implement an intervention, but the link to implementation was not explicit in many study publications.

We adopted a conservative approach so only those with an explicit link are summarised below. For those that don't provide an explicit link but still may be of some relevance to programme implementation, see Appendix F, section 13.6.1.

Table 17 Summary of characteristics of studies contributing to the theme: user views on acceptability.

Author Date	Quality score	Country	Target population	Intervention category	Study details
Holme et al. 2009	++	Scotland (UK)	Under 5s (universal programme with targeted support for children from disadvantaged areas).	Complex Intervention	See Appendix E Section 12.9
Lemay et al. 2012	+	US	Complex needs (HIV/AIDS)	Improving access	See Appendix E Section 12.11
Rajabiun et al. 2012	+	US	Complex needs (HIV/AIDS)	Improving access	See Appendix E Section 12.18
Yusuf et al. 2012	++	England (UK)	Under 5s and school children (from deprived areas)	Complex Intervention	See Appendix E Section 12.24

Evidence statement 16: service user views on acceptability.

Evidence from 4 studies (2 [++] UK[1,4] and 2 [+] US[2,3]) reported views on barriers or facilitators related to service user acceptability of the intervention or programme.

Facilitators

Three studies reported elements of service user acceptability that facilitated their interventions or programmes (1 [++] UK[1] and 2 [+] US[2,3]). All three reported how the friendliness of intervention staff had facilitated implementation in different ways. Each study also provided unique facilitating elements including: home visits by a dental support worker[1]; ease of service user participation[1]; and the provision of a friendly, accessible, available, comforting, knowledgeable and empathetic dental case manager[2,3].

Barriers

One (++) UK study[1] talked about a dental health support worker home visit element of a programme. It reported there was potential for stigma to be attached to letting professionals into one's home if there was a perception it was to monitor parental behaviour. This was a result of some associating the term support with social support and bad parenting. It was important that visits were seen by service users (parents or carers) as advice rather than parental monitoring.

One (++) UK[2] study asked parents whose children did not have fluoride varnish in a school programme to comment on the reasons. They included fears children with severe allergies would be at risk of an adverse reaction in an outreach setting (the school) and absence from school.

[1] Holme et al. 2009 (++)
[2] Lemay et al. 2012 (+)
[3] Rajabiun et al. 2012 (+)
[4] Yusuf et al. 2012 (++)

Applicability to UK

Two studies were from the UK so have direct applicability to the UK setting. The remaining 2 were based in the US reporting views from service users living with HIV/AIDS involved in programmes to increase their access to mainstream dental care. It is unclear whether significant differences between the UK and US in terms of their organisation of mainstream dental care and existing community support for people living with HIV/AIDS make the US views any less applicable to the UK, but the possibility should be considered.

Narrative summary.

Four studies reported views on barriers or facilitators relating to user acceptability of the intervention or programme.

The contributing studies varied considerably in their oral health interventions, their settings, their qualitative methodology and the population group targeted. Key characteristics of the contributing studies are summarised in Table 17 for reference.

Facilitators

Home visits were singled out as being an important facilitator in the Childsmile Practice programme in overcoming potential barriers of dental fears and difficulty getting to a dental practice at a specific time (Holme et al. 2009 [++] Scotland). This related to the part of the Childsmile programme that provided targeted support to families most in need from deprived areas. Importantly, participation was reported not to be demanding for parents or children as sessions were undertaken in normal attendance times and locations. This ease of participation was reported to be a major facilitator. The positive approach taken by staff in assisting the few children who were nervous was reported to be much appreciated and encouraged parental agreement. This included gradual introduction to the experience and flexibility in allowing parents to accompany nervous children if need be.

Service users with HIV/AIDS reported how the provision of a dental case manager had helped them overcome some of the barriers experienced in gaining access to mainstream dental care (Lemay et al. 2012 [+] US). In this study the dental case manager was the community based intervention in focus. Service users reported key characteristics of the dental case manager that had aided their role in promoting access to mainstream dental care as 1) being accessible and available; 2) being knowledgeable about clients; 3) being knowledgeable about insurance; 4) being empathetic; 5) increasing access to care (i.e., scheduling appointments, making appointment reminders, and assuring continuity of care); and 6) providing comfort.

Additional and overlapping facilitating factors were identified by a second study, also assessing views from service users with HIV/AIDS, but who were taking part in a multifaceted intervention in the US (Rajabiun et al. 2012 [+] US). Facilitators for returning to mainstream dental care included free or limited cost of dental services, friendly staff and setting, finding an HIV knowledgeable dentist, having a care coordinator for support and being motivated to maintain oral and general health.

Barriers

Two studies reported explicit barriers relating to problems with the acceptability of the oral health intervention or programme (Holme et al. 2009 [++] Scotland and Yusuf et al. 2012 [++] England).

Both parents and professionals from 1 study (Holme et al. 2009 [++] Scotland) reported it was important that the dental health support worker home visits were seen by service users as advice rather than parental monitoring as there was the potential for stigma to be attached to letting professionals into one's home if there was a perception of monitoring. This was reported to be anticipated as a strong barrier for a minority of respondents described as being from highly deprived communities. The negative view of receiving support was reported to be a result of linking support to social worker support, which was perceived by some parents to mean they were doing something

wrong or not coping. The authors suggested sensitivity in the language used in describing this “support” might be needed.

In the Keep Smiling pilot programme parents whose children did not have fluoride varnish (19% of respondents) were invited to comment on the reasons, giving insight into potential barriers to participation (Yusuf et al. 2012 [++] England). Some of the parents reported how children with severe allergies did not have fluoride varnish application due to the potential risk of an adverse reaction in an outreach setting, while other parents cited absence from school.

5 Discussion

Overall, there was a good fit between the original framework selected and the data reviewed because the framework required only small modifications to capture important barriers and facilitators reported in the literature under study (See Appendix I).

The framework appears to provide a strong anchor to a number of common themes highlighting barriers and facilitators that are important to consider when implementing a range of community based oral health interventions and programmes across varying contexts. Consequently, it may be beneficial to those wishing to implement a community-based oral health intervention or programme to systematically review the themes outlined in the framework, and discussed in each of the evidence statements. In doing so readers should consider the potential local impact of each theme on their prospective intervention or programme, including considering possible mitigations in response to any barriers identified as likely to affect it.

Key issues

In parallel to the barriers and facilitators identified and discussed in each evidence statement, some key cross-cutting issues emerged that linked multiple themes.

One example stemmed from reports that differences in perceived need between service providers and service users may present a barrier to programme implementation (see section 4.3.1). This was mainly reported in populations with complex needs who are at high risk for poor oral health such as people who are homeless, or families with children with disabilities, and was closely aligned with a lack of perceived benefit (section 4.3.2). This suggested that perceived need or benefit on behalf of the provider may not be sufficient to facilitate programme implementation. Adopting a flexible approach (see section 4.4.2) and increasing the compatibility between the aims and activities of the oral health programmes and service users' needs (see section 4.4.1) may be necessary to overcome this barrier.

Building on this issue, evidence from one UK study amongst homeless people suggested that addressing oral health may not be perceived as a high priority need in this population, especially during crisis situations. This has implications for the timing of the introduction of oral health programmes among people who are homeless. This was reinforced by a study in the Republic of Ireland highlighting the same issue in families caring for children with disabilities. The evidence suggested that programme flexibility (section 4.4.2) may be one way in which the barrier of low perceived need (section 4.3.1) can be addressed. Tailoring programme intensity, timing and delivery to take account of competing priorities may be important when implementing oral health programmes, by ensuring compatibility and fit with the particular circumstances of individuals with complex needs (see section 4.4.1).

A second cross-cutting issue related to gaining positive parental consent for their child's participation in the intervention or programme. Challenges in achieving this were reported in most school or nursery based interventions and programmes. A flexible and adaptable approach again appeared to facilitate consent and partially address this barrier (see section 4.4.2), as did having proactive and friendly intervention staff, clear staff roles, and staff who were trusted by parents (see section 4.5). There were some reports that raising awareness and active engagement with parents on the issue of oral

health, including clarifying and reassuring them about any unfamiliar aspects of oral health such as the fluoride varnish procedure, may also overcome consent barriers. However, this may not be sufficient in all programmes as one UK study reported that despite increasing engagement efforts, gaining repeated consent for their programme was likely to continue to pose problems (see Evidence Statement 12b). An additional factor, the children, was also identified as having a role in facilitating consent in some situations. Nursery school children for example, were reported to want to join in with whatever most children were doing, including taking part in oral health programmes, and parents were reported to be happy to consent if their child was happy to be involved. Hence, efforts to boost consent may consider focussing on the children and parents, rather than just parents.

Effective communication, collaboration and engagement also emerged as closely linked and prevalent sub-themes acting as facilitators within the existing theme, specific practices and processes (see section 4.5.2). Barriers related to these issues appeared more commonly reported in complex interventions. This is perhaps not surprising as these interventions were multi-component and multi-faceted so tended to involve numerous programme staff and tasks necessitating complex interactions and collaborations. By this very nature they might be expected to report relying more heavily on these interlocking elements than simpler programmes or interventions.

It was also clear that particular staff members and teams (see section 4.5.2 and 4.5.3) were key to the implementation of many interventions and programmes, including their roles in facilitating communication, engagement, collaboration and gaining parental consent.

These few illustrations of cross-cutting issues serve to illustrate that barriers and facilitators are unlikely to act in isolation and are likely to be heavily interlinked across themes.

Emergent themes

The themes of intervention resources, contact time and service user acceptability were added to the original framework after it was clear a number of studies were reporting barriers related to these issues that were not captured in existing themes.

Barriers relating to intervention resources appeared to be particularly widely reported in the literature reviewed (see section 4.4.3). As this issue was absent in the original framework of implementation issues, it may indicate it is an overlooked issue in some cases. The issues fell into 3 broad areas. First, service user facing intervention resources, such as leaflets and educational materials, may act as barriers to programme implementation if the content is not clear, simple, and tailored to the users' circumstances. Second, problems relating to administrative burden and time pressures were often encountered. Efforts to simplify administrative processes (such as data input) and forms, as well as distributing workload among staff, may overcome this type of barrier. Third, the availability of appropriate physical and structural resources was found to influence the implementation of a number of programmes. For example, having small class sizes and sinks available made implementing school based tooth brushing programmes easier. A number of programmes also suggested the addition of resource packs or programme protocols may strengthen the shared vision and coordination of some new programmes (see section 4.5.2).

Having an intervention or programme that had high levels of acceptability to the service user also appeared to facilitate implementation and was closely aligned with the theme of compatibility (see section 4.4.1) and the contextual appropriateness of the intervention or programme. Acceptability was improved by having friendly and knowledgeable programme staff which overlapped with the theme; specific staffing considerations (see section 4.5.2). Interestingly, 1 study identified how home visits supporting vulnerable families to engage with oral health issues and register their child with a dentist had the potential to act as both a barrier and facilitator to implementation, depending on the service user perspective. On the one hand some parents found the outreach service

helped them overcome problems attending a dental surgery, whereas others reported concerns that receiving extra “support” meant they were doing something wrong as parents and the stigma attached to that perception meant some families may not welcome this approach. Again, this potentially highlights how an intervention or programme may need to be flexible and adaptable in responding to barriers encountered during implementation. In the case above, this may mean considering different communication strategies to mitigate the potentially stigmatising use of the term “support” in some groups.

Barriers and facilitators related to adequate contact time between service providers and service users appeared to be two sides of the same coin. That is, inadequate contact time was reported to be able to act as a barrier to implementation, whereas having sufficient contact time had facilitated implementation through overcoming some barriers encountered with groups with complex needs (see section 4.7.1).

Framework synthesis

Framework synthesis is a pragmatic method that blends deductive and inductive approaches to provide an answer to a policy or practice relevant question. It is more rapidly completed than a purely inductive synthesis and the initial framework can be selected with a view to the intended use scenario, helping the reviewer to focus their analysis on the task in hand. It can be criticised from more ‘qualitative’ standpoints for imposing an external framework on a diverse selection of studies and not allowing the data to speak for themselves. It is also a method that is in its infancy, and there has been little methodological work comparing the results obtained from a framework synthesis with approaches which take, for example, grounded theory as their starting point. Its practical epistemology, however, is well suited to the task of synthesising evidence quickly in a targeted way.

Using framework synthesis has an inherent limitation related to the potentially negative effect of dispersing barriers and facilitators described in a single study into distinct thematic codes and sections. This may lose some of the

synergy and nuance of describing barriers or facilitators together in the same study, such as the identifying interactions between multiple barriers described in the same programme or intervention. However, this limitation is also a strength from the perspective of attempting to identify and synthesise common barriers and facilitators reported across different interventions and programmes rather than simply reporting specific issues faced in each study, which could in effect, repeat each study publication.

Fit of the evidence to the research question

Of the 26 included studies, only the minority were a strong fit with the research question of identifying barriers or facilitators to intervention or programme implementation. The majority of studies reported barriers or facilitators in a short and relatively superficial manner without exploration or discussion of unclear or inconsistent findings. This was in contrast to a much smaller number of data rich studies that discussed a range of views in depth. Particularly data rich studies that contributed to this review included an evaluation of the Keep Smiling pilot programme in White City, London (Yusuf et al. 2012) and primary research relating to the national Childsmile programme in Scotland (Holme et al. 2009). Programme implementers considering these types of programmes are recommended to read the respective studies in full as they contain many specific lessons learned that will be of interest.

Interpretation

The framework synthesis approach means the evidence summarised within each theme is indicative of areas of consideration, but does not represent a definitive or comprehensive explanation of all known barriers or facilitators to implementation.

In interpreting the data it is important not to count studies contributing to each theme as a way of assessing strength of evidence: the review aims to identify barriers and facilitators for consideration when implementing oral health

interventions and programmes, rather than to establish which framework theme has the most studies in it. It is possible that the most insightful or important implication for use in a specific context may only have been identified in one study; what we have emphasised therefore is breadth, and as suggested above, the salience of each barrier and facilitator should be considered in specific implementation contexts.

Limitations

The framework synthesis approach used in this review relies on the quality and fullness of reporting from the underlying study publications. Where this is incomplete or unclear, the quality, reliability and completeness of the data and synthesis suffers.

Some of the framework themes are closely linked and could potentially overlap; for example, issues of staffing could feasibly be coded as technical assistance, or specific staffing considerations, or both, based on the framework descriptions (See appendix I). Hence, the work is influenced to some degree by the interpretation of the analyst coding the underlying study. To minimise this limitation, the underlying text coded for each theme has been presented (see Appendix F) to make the link between the underlying data and interpretation explicit. This is connected to the point that it is the underlying barrier or facilitator that is important to capture in the synthesis, the specific theme it is categorised as is of secondary importance.

There was a sense when reviewing the evidence that it was more common for authors to report barriers to intervention or programme implementation than it was to report facilitators. This may reflect a publication bias in the literature toward identifying barriers, potentially as a means of identifying improvement opportunities. This may have the result of limiting the reporting of key facilitators or reducing them to brief discussion of the programme successes.

The frequency of barriers and facilitators reported in the underlying texts may partially reflect the ease of conceiving and describing them in the publication,

at the expense of others that may be present, but are more complex or abstract to conceive, and therefore described less routinely.

While some barriers and facilitators may be over represented in the publications, and consequently the framework synthesis, others may be underrepresented. Some themes may have had a large impact on implementation in practice but did not feature strongly in the study publications reviewed. For example, funding is likely to be a key barrier or facilitator to implementing oral health interventions in practically all cases, but was only reported in a minority of texts. This demonstrates the limitation that certain barriers or facilitators may be taken for granted and not reported.

There was wide variation in the quality of reporting across the included studies. Many did not describe the characteristics of the intervention participants in adequate detail which limits the ability to assess whether the views expressed may be subject to bias, and assess how transferable they might be to other interventions and contexts. Some studies did not describe their qualitative methods in adequate detail, not reporting key information that may identify potential sources of bias in the sample or in interpretation of the data; further complicating evidence synthesis and limiting the strength of any conclusions.

Evidence gaps

Of the 26 studies included in this review just 1 reviewed an oral health intervention or programme that exclusively targeted the general population. Some interventions and programmes, for example, the Childsmile programme, had both universal and targeted elements but the general population is likely to be underrepresented in the review. The remaining 25 studies targeted different populations whose social circumstances or lifestyle place them at greater risk of poor oral health or make it difficult for them to access dental services.

6 Conclusions

All themes and sub-themes identified in the final framework and discussed in the evidence statements were found to have the potential to act as barriers to, or facilitators of, implementing community-based oral health improvement programmes and interventions.

Consequently, it may be beneficial to those wishing to implement a community oral health intervention or programme to systematically review the themes outlined in the final framework, and discussed in each of the evidence statements. In doing so readers should consider the potential local impact of each theme on their prospective intervention or programme, including considering possible mitigations to any barriers identified.

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7 Reference list

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8 Appendix A: Sample search strategy

See separate appendices document.

9 Appendix B: References for supplemental searches

See separate appendices document.

10 Appendix C: Sifting protocol

See separate appendices document.

11 Appendix D: Excluded studies

See separate appendices document.

12 Appendix E: Characteristics of included studies

See separate appendices document.

13 Appendix F: Description of results by theme

See separate appendices document.

14 Appendix G: Evidence table

See separate evidence table appendices document.

15 Appendix H: Models considered for framework synthesis

See separate appendices document

16 Appendix I: *A priori* and final framework

See separate appendices document.