

Access to urgent dental care: a scoping review

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Objective: To summarise the literature on urgent dental care and to identify research priorities on the organisation and delivery of urgent dental services. **Basic research design:** Scoping review using Andersen's behavioural model of health service utilisation for a framework analysis of the data. **Main outcome measures:** Gaps in the literature, defined as those factors and interactions identified by Andersen's model as having a contributory role in access to health services that were not evident in the source papers. **Results:** Fifty-six papers met the inclusion criteria for the review. The factors most often considered were; demographic, socioeconomic, perceived and evaluated need, and health behaviours. Patient outcomes of evaluated health and quality of life following urgent dental care were the least studied variables, with the exception of patient satisfaction. No studies were identified on community values/norms of people accessing urgent dental care, on health economic evaluations or on studies of how urgent dental services mitigate use of other medical services. No studies were identified on urgent need for populations living in water fluoridated areas or on the relationship between service design and efficient or effective access as measured by patient outcomes. **Conclusion:** Future research on patient outcomes and the comparison of different service models for urgent dental care through measures of equity, effectiveness and efficiency of access are needed to inform future policy and organisation of these services.

Key words: health services, dental care, access to care, scoping review

Introduction

Urgent or emergency care is required for dental conditions causing pain, swelling or for injuries resulting in dental trauma (Austin *et al.*, 2009; Tulip and Palmer, 2008). Timely intervention can relieve symptoms and mitigate the impacts of oral disease on individuals and wider society through missed education or absence from work (Daly *et al.*, 2014; SCDEP, 2013). While severe dental conditions which may be life threatening, such as submandibular cellulitis are best treated in a hospital, less severe urgent conditions are best managed by clinical interventions such as restorations or extractions, provided in a dental setting (Anderson *et al.*, 2000; McCormick *et al.*, 2013; SDCEP, 2013). For people unable to accept urgent care in a dental clinic, treatment may be provided under general anaesthesia in a hospital even though the condition may not be life threatening.

During the financial year 2014/15 over 3.7 million people in England received NHS urgent dental care in a dental setting. People who have an urgent dental condition may seek care through their dental provider

during working hours, however during out-of-hours and for people who don't have a dentist, urgent dental care in England is provided through the NHS urgent dental services. An evaluation of an NHS urgent dental service found that 47% of attendees were reported as not having a dentist (Worsley, 2013). Due to the demand for urgent dental care it is important to elucidate the factors that facilitate access to urgent care in a dental setting and how the use of services benefits patient outcomes (Andersen *et al.*, 2014).

Andersen's behavioural model of health service utilisation provides a way of understanding how access to urgent dental care may be facilitated or impeded (Andersen *et al.*, 2014). It has been widely used in health services research (Babitsch *et al.*, 2012) and is supported empirically in relation to dentistry (Baker, 2009; Marshman *et al.*, 2014). The model describes five interacting domains and five dimensions of access. The three domains of predisposing, enabling and need may be described at the contextual and individual levels while domains of health behaviours and outcomes are described at the individual level (Andersen *et al.*, 2014) (Figure 1).

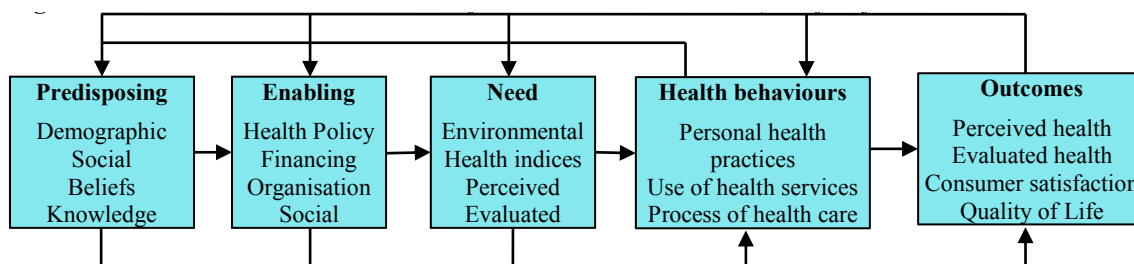


Figure 1. Andersen's behavioural model of health service utilisation

Predisposing characteristics that might influence service use include demographic, socioeconomic, health beliefs and knowledge factors. Enabling conditions include health policies, the financing and organisation of health services, individual resources such as health insurance, and social factors such as social networks that enable service use. Need may be indicated by environmental factors such as water fluoridation, population health indices, and at an individual level, by a person's perception of their need (perceived need) or by need determined by a health professional (evaluated need).

These three domains influence health behaviours and outcomes. Health behaviours include personal health practices such as oral cleanliness and health service use, as well as health care provider behaviours such patient/clinician interaction and treatment processes. The final domain, outcomes, includes the individual's perceptions of their health, their health status as evaluated by a health professional, as well as consumer satisfaction and quality of life.

Factors and interactions within the model may facilitate or impede access, itself considered in dimensions of potential, realised, effective, efficient or equitable access (Andersen *et al.*, 2014). Enabling factors contribute to potential access whereas use of services is realised access. Effective access occurs when health outcomes are improved. Efficient access is the minimisation of the cost of improving patient outcomes from health service use. Equity of access is determined by which of the five domains is dominant in predicting potential and realised access. For example, need is directly related to deprivation (NHS Information Centre, 2011), thus equity of access might be indicated by socioeconomic and need variables accounting for most of the variance in use of urgent dental services.

It is important to understand how factors interact to facilitate or impede access to urgent dental care to improve health outcomes for those in need. The known factors and interactions can be mapped to identify the facilitators of access and identify the gaps where research is needed.

Scoping reviews are useful in identifying new areas of research. They synthesise knowledge by collating and summarising findings from different study designs and grey literature to map the research evidence available, identify gaps in research and to summarise and disseminate research findings (Arksey and O'Malley, 2005; Levac *et al.* 2010). The five stages of a scoping review involve: 1, developing a research question 2, identifying the relevant studies and information, 3, selection of studies and information, 4, charting data, and 5, collating, summarising and reporting results.

The aim of this scoping review was to summarise the literature on urgent dental care and to identify research priorities on the organisation and delivery of urgent dental services. The objectives were to:

- Identify peer reviewed and grey literature on urgent dental care
- Chart and summarise the information using Andersen's model; mapping the range and nature of existing research and grey literature on urgent dental care
- Identify the gaps in research and the implications for future research on urgent dental care.

Research question

This review aimed to answer the question, 'What is known from the literature about the factors and interactions that facilitate or impede access to urgent dental care?'

Identifying the relevant studies and information

Relevant information was sought from peer reviewed publications and grey literature. The search strategy was applied to Medline via Ovid, Web of Science, and Scopus. Terminology for search terms included MeSH terms and free text (Table 1). There were no restrictions on publication years or languages. UK consultants in dental public health were contacted for unpublished work.

Table 1. Database search terms

Database	Search terms
Medline via Ovid	(dental care/ OR dental health services/ OR "dental care" OR "dental service*" OR "personal dental service*" OR "dental access centre*") AND ((emergencies/ OR "urgent dental" OR "emergency dental") OR ("out-of-hours" OR "out of hours" OR "unplanned" OR "unscheduled"))
Web of Science, Scopus	("Dental care" OR "dental service*" OR "personal dental service*" OR "dental access centre*") AND (("out-of-hours" OR "out of hours" OR unplanned OR unscheduled) OR ("dental emergenc*" OR "urgent dental" OR "emergency dental"))

The database searches identified 1,449 records. Eight records were found from the grey literature. A total of 597 duplicate records were removed (Figure 2).

Selection of studies and information

The inclusion criteria were:

- Published abstracts, studies, and literature (e.g. letters, commentaries, reports) about urgent dental care
- Studies on contextual or individual demographics and on health related behaviours of potential user groups or users of urgent dental care
- Unpublished (grey) literature about urgent dental care in the UK including service reviews and evaluations.

The initial exclusion criteria were provision of urgent dental care:

- In emergency or accident and emergency departments
- Through general anaesthetic services
- From general medical services
- Focused on military personnel deployed on operations.

The inclusion criteria developed by the research team were discussed to clarify meaning and to ensure they were applied consistently. Two reviewers screened the remaining 860 records by title and abstract using the initial inclusion and exclusion criteria and discussed any disagreements. Following this screening additional exclusion criteria were applied for feasibility reasons.

The reasons included the low number of studies published before 2000, lack of availability of resources for translation and it was anticipated the issues determining access for children were different to adults, such as provision of public services for children and not adults. The additional exclusion criteria were applied while according to the iterative process described for scoping reviews at the same time not compromising the ability to answer the research question, (Arksey and O'Malley, 2005; Levac *et al.*, 2010):

- Studies and literature dated before 2000
- Studies and literature in languages other than English
- Studies focusing specifically on urgent dental care of children.

This resulted in the exclusion of 799 records. Full copies of the 61 remaining records were obtained. After assessing for eligibility five studies were excluded for the following reasons: two papers described the same study therefore one was excluded, one described trends in dental visits to a hospital emergency department, one was a commentary on provision of care for severe oral trauma, one described the aetiology and presentation of oral conditions and one paper could not be located. A list of included papers can be available on request. The included papers are listed in online-only Appendix 1.

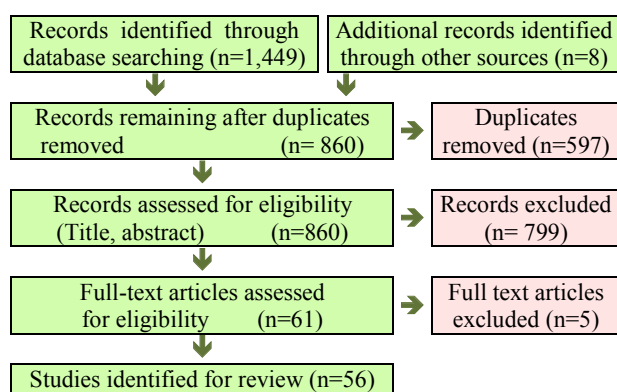


Figure 2. Flow diagram of the search process

Charting, collating and summarising the data

Framework analysis was used to chart, manage and analyse the data (Ritchie and Lewis, 2003). The domains in Andersen's model provided the initial conceptual labels for the coding matrix. Each paper was reviewed, coded and the data mapped onto the matrix. Interactions between levels in the Andersen model were described. For example, the interaction of demographics with realised access or with perceived and evaluated need for urgent dental care. The matrix facilitated comparisons of factors as well as interactions found in different papers. Gaps in the literature were defined as those factors and interactions that were not evident in the sources. Deviant case analysis was planned, in which codes that did not map onto the model would be used to expand or reframe it (Wicks, 2010). Descriptive summaries of the relevant papers included; author, journal, year of publication, study population and country, study design and conclusion.

Results

Descriptive summary of papers

Fifty-six papers were reviewed which included commentaries (n=6), letters (n=4), service evaluations (n=2), reports (n=2), review (n=1), audits (n=2) and a design plan for an urgent dental service. The data collection methods in these sources included: questionnaires (n=12), structured or semi structured interviews (n=7), retrospective (n=5) and prospective surveys (n=7). Three studies were cross sectional and there was one systematic review, a case control study, a descriptive study and a comparison study. Studies reviewed were from UK (n=24), USA (n=8), Australia (n=6), Ireland (n=4), Brazil (n=2), Sweden (n=2), Finland (n=1), China (n=1) and France (n=1).

Domains and interactions found in Andersen's model

The data identified in the papers mapped well onto Andersen's model, including factors not originally described in the model (Table 2). Dental anxiety and/or phobia, pre-existing medical conditions/medications and disabilities expanded the predisposing domain. Urban/rural locations found in the environment domain of Andersen's 1995 model, but not featured in the current model (2014), was included as a predisposing factor (Andersen, 1995). Ethical conduct fitted into processes of care. Outcomes of organisational change on service providers were included in the outcomes domain.

Predisposing factors

Several studies measured the predisposing variables of age, gender and socioeconomic status. An additional nine studies only included persons eligible to receive publicly funded health care or who fell below a measured poverty criterion. Ethnicity variables were only included in three studies. Very few sources compared the demographics of people needing or accessing urgent dental care to the wider population. There were no studies on community values and cultural norms.

Beliefs and their impact on health behaviours were investigated in one study and another determined how changes in a person's circumstances influence their health behaviours. One study sought dentists' attitudes about changes to urgent dental care provision. People's expectations regarding either care or treatment had been determined (n=4) and one study investigated how knowledge of services related to timeliness of seeking care.

The four additional factors identified that were not explicitly included in Andersen's model were: dental anxiety (n=4), people with pre-existing medical conditions or on medications (n=2), people with disabilities (n=3) and urban/rural (n=4). All four were deemed to be predisposing factors and thus the model was modified to include these factors in this domain. Three were included under the title 'predisposing conditions'.

Several interactions were identified, for example, younger adults used urgent dental services more than other age groups. Higher deprivation was linked to greater perceived and evaluated need and increased use of urgent dental care. People who were more deprived had more restorations and extracted teeth. A study in the West Indies including ethnicity variables found ethnicity of services users for urgent care reflected that of the local area. A study in the USA found African Americans were more likely to delay care.

Table 2. Factors related to urgent dental care and numbers of primary sources mapped onto Andersen's model

<i>Andersen's model - domains</i>				
<i>Predisposing</i>	<i>Enabling</i>	<i>Need</i>	<i>Health behaviours</i>	<i>Outcomes</i>
Demographic	Health Policy	Population indices (2)	Personal health practices	Perceived health
Age (16)	Policy change (5)	Evaluated health status (1)	Oral health behaviours (3)	Perceived health following care (2)
Gender (11)	Financing	Perceived need	Oral cleanliness (1)	Patient satisfaction (7)
Social	Cost of service provision (3)	Reasons people seek care (14)	Registration status (9)	Dentist satisfaction (1)
Indicators of socioeconomic status (16)	Provider – fees received (3)	Evaluated need	Alcohol consumption (1)	Quality of Life
Ethnicity (3)	Indicators of Individual wealth (8)	Evaluated presenting oral conditions or oral health needs (13)	Use of health services	Impacts of urgent dental conditions (2)
Urban/ rural (4)	Organisation	Subjective oral health indicators and psychosocial impact (1)	For urgent dental care (36)	Impacts of a previous traumatic experience (2)
Beliefs	Comparison of different urgent dental services (4)	Agreement between clinician/patient regarding urgency (1)	Month or weekday of service use (4)	
Beliefs about oral health and care (1)	Care pathways (1)	Agreement between dentist and need for an appointment (1)	Delay of service use (5)	
Changing perceptions of oral health and care (1)	Use of services following organisational change (1)		Follow up care seeking behaviour (1)	
Dentists' attitudes to change in service provision (1)	Distance/travel time (6)		Group not accessing services (1)	
Expectations of services (4)	Social network		Processes of dental care	
Knowledge	Sources of information (1)		Treatments (14)	
Knowledge of services (1)			Treatment protocols or guidance (7)	
Predisposing conditions			Training needs (2)	
Dental anxiety (4)			Sedation (2)	
Pre-existing medical conditions or on medications (2)			Dentist/patient Communication (2)	
People with disabilities (3)			Ethical conduct (1)	

Greater perceptions of importance of oral health were linked to better self-rated oral health and more desirable attendance patterns but changes in a person's circumstances appeared to change health behaviours. Expectations influenced the type of care desired with some wanting advice and reassurance in the first instance. Dental anxiety was linked to a previous traumatic dental experience, delaying access to urgent dental care and a desire for sedation services.

Disability was associated with increased deprivation and poorer oral health. A training need was found for dentists providing urgent dental care to people who were medically compromised or who had a disability. People living in rural areas attended the dentist less frequently and were more likely to delay seeking urgent dental care than those living in urban areas.

Enabling factors

Most services providing urgent dental care were publically funded with some services directed to groups meeting specified poverty criteria. The effects of policy change on service use or provision of care had been investigated (n=5). While simple cost analyses of urgent dental services (n=3) had been undertaken, no health economic evaluations were identified. Fees received by providers (n=3) and indicators of the affordability of care such as health insurance had been considered (n=8).

There were few comparisons of service organisations. Four sources measured variables within different service models, with one describing patient care pathways. However, no studies were identified that established the relationships between service model design and efficient access measured by patient outcomes of perceived or evaluated health or quality of life.

One study described how the provision of a dental clinic in a hospital reduced the demand on the emergency

department for urgent dental care by approximately 50%. However, gaps were identified in how urgent dental services might mitigate use of other health services, such as general medical services. Distance to services (n=6) had been considered, but only one study investigated how people found out about an urgent service.

Several important interactions were found within enabling factors. Health policies were seen to influence the availability of healthcare. Service finance and organisation interacted to influence the types of care provided and to whom. The remuneration of dentists interacted with predisposing factors and attendance such that reimbursement could facilitate urgent dental care for those otherwise unable to access it. Individual resources such as health insurance influenced care seeking behaviours and type of service used, with those less able to afford care being less likely to access regular dental care. Greater distance to services reduced access for the more deprived.

Need factors

Environmental factors, such as the need for urgent dental care for populations living in water fluoridated areas do not appear to have been studied. Population health indices were considered in two sources and one study evaluated the general health status of patients attending for urgent dental care.

Studies had investigated; the reasons people sought care (perceived need), need as evaluated by clinicians and the presenting oral conditions. The relationship between perceived and evaluated need had been determined in studies investigating the psychosocial impacts of oral disease as predictors for urgent dental care (n=1), the agreement of the dentists' that the problem warranted an urgent appointment (n=1) and the level of agreement between clinician and patient (n=1).

Need for urgent dental care was found across previous dental attendance patterns. Studies found increased oral health needs impacts on quality of life with increased treatment needs and increased use of urgent dental services. Pain and/or swelling were the most common presenting symptoms, which related to evaluated need and service use, with most attendances being due to the consequences of dental caries. Self-reported oral health indicators predicted how soon a person needed to be seen. Need was related to higher deprivation, less regular dental service use and poorer oral health outcomes, such as more tooth extractions.

Health behaviour factors

Health behaviours had been comprehensively studied. The personal health practices most often considered were patients' dental registration status (n=9), oral health behaviours in the relationship to personal circumstances such as, whether people were recorded as being employed, unemployed or homeless (n=3), oral cleanliness (n=1) and alcohol consumption (n=1).

Most sources related directly to people seeking urgent dental care. Three sources determined if the use of services (realised access) was equitable, by comparing the demographics of service users to the population, but use by vulnerable groups had not been ascertained. The reasons and how long people delayed seeking urgent care had been studied five times, with one study finding some people not accessing dental care, even when in pain. Follow up care seeking behaviours by patients attending for urgent or non-urgent dental care had been investigated in one study. Rate of service use by calendar month or weekday had been determined (n=3).

People attending for urgent care had sub-optimal service use, often returning and needing more extractions. Studies of predictors of care seeking behaviours of individuals identified symptoms, fear, knowledge of services, changes in circumstances, costs, whether having a disability or not and living in urban or rural areas. However, none of those studies were theoretically informed. Realised access to urgent care was related to deprivation, greater need and high patient satisfaction. Service use related to calendar month and weekday.

The most frequent process of care considered was the volume and type of treatments provided (n=14). One study looked specifically at dentist/patient communication, finding people wanted advice and reassurance as much as relief from symptoms. Protocols or guidance regarding urgent dental care were considered in seven papers (antibiotic use n=4, oral condition and timeliness of care n=2 and an evidence based protocol for urgent dental care n=1) and

one source considered ethical conduct in relation to urgent dental care. The training need for dentists treating medically compromised and special care patients (n=2) and the desire for sedation by people who were dentally anxious (n=2) had been investigated. Treatments provided were dependent on health setting, evaluated need, protocols or guidelines with greater antibiotic use in hospital or general medical services. Ethical conduct which was not explicit in the model was included under processes of care.

Outcomes

Patient outcomes following urgent dental care, with the exception of consumer satisfaction, were the least studied domain. Two studies found urgent dental conditions reduced quality of life (inability to sleep and eat), with more severe symptoms prompting access. Effective access, that is, improvements in health following treatment had been demonstrated in relation to perceived health (n=2) one day after treatment. No studies were identified investigating effective access in relation to evaluated health or quality of life following advice from telephone triage services or treatment for urgent care.

Patient satisfaction was the most studied outcome (n=7), investigated twice in relation to telephone triage services. Service use for urgent dental care interacted with high patient satisfaction. Difficulty in accessing services reduced satisfaction. Dentists' satisfaction with service provision was included as an outcome in one study and this mapped onto the model alongside patient satisfaction.

Dimensions of access

There were limited studies on the dimensions of access as described by Andersen (n=6). No sources had investigated which population groups their services may or may not potentially reach. Three sources determined if the use of services (realised access) was equitable, by comparing the demographics of service users to the population, but use by vulnerable groups had not been ascertained. Realised access to urgent care was related to deprivation, greater need and high patient satisfaction. Only two studies had investigated the effectiveness of access that is, improvements in health following treatment by measuring perceived health outcomes, but effectiveness of access on evaluated health and quality of life had not been studied. The relative efficiency of services (efficient access) had been determined in one study comparing the costs of a service before and during a pilot. No studies were identified that had compared different service delivery models for urgent care.

The gaps in research on urgent dental care are summarised in Figure 3 and Table 3.

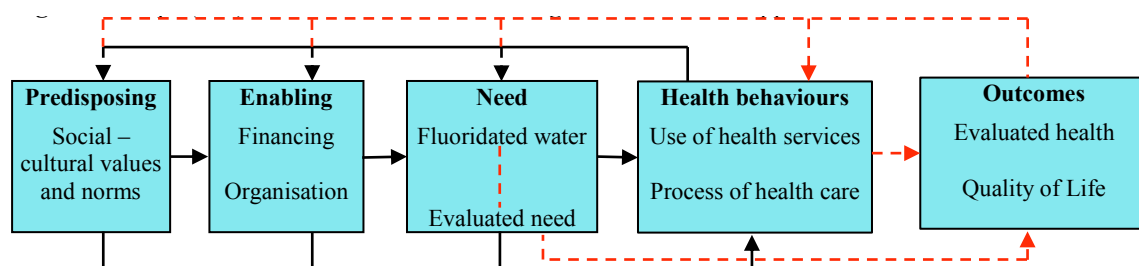


Figure 3. Gaps in interactions related to urgent dental care mapped onto Andersen's model

Table 3. Quantitative content analysis of the gaps in research on urgent dental care

<i>Predisposing</i>	<i>Enabling</i>	<i>Need</i>	<i>Outcomes</i>
<ul style="list-style-type: none"> No identified studies on community values and cultural norms of population groups accessing urgent dental care. 	<ul style="list-style-type: none"> No identified studies on health economic evaluations of services providing urgent dental care. No identified studies on how use of dental services for urgent dental care mitigates use of other medical health services such as general medical services. 	<ul style="list-style-type: none"> No identified environmental studies e.g. the impact on need for urgent dental care for populations living in water fluoridated areas. 	<ul style="list-style-type: none"> No identified studies on perceived health outcomes following telephone helpline advice only. No identified studies on the relationships between service model design for urgent dental care and efficiency of access measured by patient outcomes of perceived or evaluated health or quality of life. No identified studies on the relationships of service model design and effectiveness of access measured by patient outcomes of evaluated health or quality of life

Discussion

The aim of this scoping review was to summarise the literature on urgent dental care to identify research priorities on the organisation and delivery of urgent dental services. The data identified in the papers mapped well onto Andersen's model including factors not originally described in relation to the model. The factors, most often considered in the literature relating to urgent dental care were demographic and socioeconomic factors, perceived and evaluated need and health behaviour factors. Patient outcomes following service use were the least studied variables with the exception of patient satisfaction. No studies on the relationship between service design and efficient or effective access as measured by evaluated health and quality of life were identified. No studies on health economic evaluations of services or on how services providing urgent dental care mitigate use of other medical services were found. There were no identified studies on the impact on need for urgent dental care for populations living in water fluoridated areas however, a study by Elmer *et al.* (2014) found that there were lower hospital admission rates for children living in areas with fluoridated water for tooth removal under general anaesthesia when compared to children living in non-fluoridated areas – a finding supported by a national report (PHE, 2014). No studies on the community values and norms of people accessing urgent dental care were identified.

Use of services for urgent dental care was related to deprivation with increasing need as deprivation increased (Landes, 2015; Oliver, 2015; Rocha *et al.*, 2013; Tramini *et al.*, 2010; Worsley, 2013). The services were found to 'make access to dental treatment easier for the unemployed, manual workers, and people who are generally disadvantaged' (Tramini *et al.*, 2010, p70). However, few sources compared the demographics of service users to the wider population. In addition, there may be potential barriers to healthcare for different ethnic minorities (Scheppers *et al.*, 2005). To determine equity of access it is important to compare demographics of service users to the wider population to find out if people with the greatest need are accessing services.

Timely access to urgent dental care may reduce inappropriate attendance at general medical services and hospital emergency departments as well reduce the impacts of urgent dental conditions and improve patient outcomes. Access to services may be direct such as walk-in clinics or through telephone triage helplines. The use of telephone triage helplines facilitated the provision of advice to people with perceived urgent need (Anderson, 2004; Halling and Ordell, 2000) and may prioritise access to those needing treatment (McGuire *et al.*, 2008; Topping, 2005; Worsley, 2013). This may result in a more efficient use of resources however, only simple cost analyses of urgent dental services had been undertaken (Oliver, 2015; Topping, 2005; Worsley, 2013). Health economic evaluations are needed to determine efficiency of access by comparing the relative efficiency of different service models providing urgent dental care and determining how they mitigate inappropriate use of other medical services.

Outcome measures are an important indicator of both efficient and effective access. However, no studies on evaluated health or on quality of life following advice or treatment have been identified nor costs in relation to these indicators. Access to urgent dental care resulted in improved perceived health one day after treatment (Anderson *et al.*, 2005), but perceived health benefits of reassurance and advice from telephone triage helplines has not been ascertained. Research is needed to find out how urgent dental care addresses the needs of the patients, how it improves patient health outcomes and impacts their future health behaviours, such as follow on care seeking behaviours.

The limitations of this review are the exclusion of papers published before 2000, exclusion of papers in languages other than English, exclusion of studies only including children and in limiting grey literature sources to the UK only. Few papers on urgent dental care were identified prior to 2000 and translation facilities were not available. As a result, some relevant studies may have been omitted.

A strength of this review was the use of a theoretical model to guide the analysis. In particular, the model helped identify important gaps in the literature. Moreover, the observation that sources mapped readily onto the framework adds further support to the use of Andersen's model to study access to dental care. However, a limitation of the model was that it was not always clear into which of the five domains of Andersen's model unspecified factors best fitted. Some of these factors may have fitted into one or more domains. For example, if a person's disability, medical condition or their dental anxiety contributed to poorer oral health, these conditions would be predisposing factors, but if their poorer oral health was due to factors impeding access to services this would be in the enabling domain. Dental anxiety might also be listed under the domain of health behaviour if previous experiences determined use of services. Choosing to live in an urban or rural area may be described as predisposing, however if access to health services is impeded due to location this would be described in the enabling domain.

The few studies undertaken to determine the relative benefits of different service models providing urgent dental care in England had preceded the reconfiguration of dental services in 2006 and the introduction of telephone triage helplines for urgent dental care. NHS England now has a statutory duty to ensure provision of urgent and emergency dental care for people without a dentist or unable to access a dentist (Department of Health, 2005). This duty is met using a range of service designs (Oliver, 2015). However, little is known of their relative benefits. Evaluations have tended to focus on a single service (Worsley, 2013) rather than compare competing configurations. Gaps in evidence to support the design of urgent care networks were also found in a review of delivery of urgent medical care (Turner *et al.*, 2015).

Measures of access to urgent dental care are important for health policy and health reform at national and local levels (Andersen *et al.*, 2014). Future research on the comparison of different service models for urgent dental care through measures of equity, effectiveness and efficiency of access are needed to inform future policy and organisation of these services.

Conclusion

The scoping review found gaps in the literature on urgent dental care. Future research on patient health outcomes and quality of life following urgent dental care and comparison of different service models for urgent dental care through measures of equity, effectiveness and efficiency of access are needed to inform future policy and organisation of these services.

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