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Oral health guidelines in the primary care policies of five selected countries: An integrative review

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ABSTRACT

Background: Oral conditions remain a major health problem worldwide. Primary Health Care (PHC) has been recognized as a strategy to construct integrated health systems in order to produce the best health outcomes and reduce inequities through its attributes. Nevertheless, oral health integration in PHC remains unclear due to a lack of systematic knowledge.

Aim: To summarize oral health guidelines focused on the comprehensiveness component of PHC in the health system and on the intersectoral component of health promotion and disease prevention actions in five selected countries.

Methods: An integrative review of scientific and grey literature was led. Australia, Canada, New Zealand, United Kingdom and Brazil were selected. Content analysis was performed based on the comprehensiveness of care and health promotion and disease prevention categories.

Results: Forty-one studies were selected to compose the review. Regarding the comprehensiveness of care, the horizontal dimension was more prominent, suggesting that oral care should be provided in cooperation with other health areas. Health promotion and disease prevention actions in intersectoral contexts are complex but seem to be effective. Programs for spreading access to fluorides and actions with the education sector are the most established ones.

Conclusion: The integration of oral health in PHC policies is recommended in the guidelines of all countries, however, it stills represents a major challenge for the health care systems. These guidelines represent an important source to support decision-makers, policy-makers and stakeholders.

Contents

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1. Background

Oral health conditions remain highly prevalent worldwide. Changes in the demographic profile in recent decades have increased disability-adjusted life years (DALY) associated with oral conditions, mainly related to untreated cavities and chronic periodontal disease [1]. These changes are also related to socio-behavioural, economic and environmental factors, which affect the distribution and severity of oral diseases. Oral conditions share important risk factors with other non-communicable diseases (NCD), and they are directly associated with general health and quality of life [2]. However, a high proportion of the world population faces barriers to access oral health services due to the dental care delivery model [3].

The establishment of an integrated health system is described as a way to produce optimal health outcomes and reduce inequities based on universal access and social protection [4]. Since the Declaration of Alma-Ata publication, in 1978 [5], Primary Health Care (PHC) has been recognized as an important strategy to overcome fragmented health systems that are based on focused and specialized activities [6]. Through key features of being the patient's first contact with the health system, continuity of care, comprehensiveness and coordination, the PHC strategy provides an opportunity to deliver oral health services according to individuals, families and communities needs [4,7,8]. Strategies towards the organization of comprehensive and integrated health services through PHC are recommended to shift models of care focused on the treatment of diseases to health promotion and prevention [4]. Moreover, health promotion and disease prevention should be emphasized through multisectoral collaboration beyond the confines of dental services and health systems [3].

The 2008 World Health Report on Primary Health Care recommends that health systems, including the oral health sector, create mechanisms towards equity based on universal access and social protection, re-organize services around people's needs in a comprehensive way, develop public policy reforms to integrate public health actions with the PHC structure, and promote leadership of intersectoral and international collaboration towards a stronger and integrated health system [2,9]. Despite this, in most countries, oral health services delivery is traditionally organized through the private sector, which provides services focused on the biomedical model and outside of the primary care structure [10,11].

The oral health integration into PHC models could be elucidated by revising the guidelines adopted in countries with tradition on PHC. However, few studies are available. Regarding to oral health integration into PHC, one review indicated that healthcare providers' competency was the most reported barrier, while collaborative practices and financial support were the main facilitators [12]. Other review highlighted the need for effective policies on interdisciplinary approaches to improve oral health of disadvantaged population groups [13]. None of these studies reviewed oral health guidelines to elucidate characteristics of the comprehensiveness and on the intersectoral component of health promotion and disease prevention actions among primary care policies. Thereunto, the integrative review method is recommended for its capacity to combine empirical and theoretical knowledge with the potential to collaborate in policy-making and evidence-based practice [14].

After more than 40 years of the Alma-Ata Declaration publication, to examine the oral health component of PHC guidelines and the documents that substantiate its implementation is an important way to support decision-makers, policy-makers and stakeholders working to integrate the health system.

Therefore, this paper aimed to summarize oral health guidelines focused on the comprehensiveness component of PHC in the health system and on the intersectoral component of health promotion and disease prevention actions in five selected countries.

2. Methods

We used the integrative review method to conduct the synthesis. The integrative review is highly recommended for multifaceted areas such as public health policies since it allows researchers to summarize studies from different methodologies and information from grey literature [14,15].

After identification of the review question *"What are the characteristics of the comprehensiveness component and on the intersectoral component among primary care policies in five countries with universal health systems and traditional PHC?"*, the following stages were developed: country selection; eligible publication types; literature database; literature search strategies; selection criteria; methodological quality assessment; and; data collection and definition of analytical categories.

2.1. Country selection

We selected countries driven by multiparty capitalist democracies whose current health system guarantees the right to health to all citizens independent of their ability to pay or have healthcare schemes described as being universal in scope. The organization of health systems should be based on the PHC model for more than 20 years since the research year (2016).

As Commonwealth of Nations member states have tradition on PHC due to its historic adoption in their health systems, the United Kingdom, Australia, New Zealand and Canada were included. The right to access healthcare without discrimination - saving the time limits for certain services, such as emergency and planned hospital care - is assured for all United Kingdom citizens. Private insurance plays a minor role, accounting for about ten percent of coverage. Australia and New Zealand have a mixed private–public system with many cost-sharing requirements. The schemes provide free public hospital care and substantial coverage for physician services and pharmaceuticals. All citizens have insurance through government-funded, universally accessible health services and the coverage varies by income, need, location, and service type. Private insurance is used to pay fees for specific services and provide access to physicians, specialists, and hospital beds. Approximately 50 percent of Australians and 30 percent of New Zealanders have such insurance. Canada provides universal public insurance plan, which prohibits private health insurance use to pay for services covered by the public plan. More than half of Canadians have private insurance. These four countries have a network of primary healthcare providers composed mainly of general practitioners that act largely as gatekeepers and are paid by fee-for-service and other forms such as capitation and salaries [16].

Brazil has gained international recognition for its public health system based on PHC that integrates oral health [9], and was also included in the study.

2.2. Eligible publication types

Assuming that important texts on the subject of interest are present in form of technical documents not indexed in databases, studies from all designs and technical documents from grey literature as policy guidelines, reports, frameworks, plans and strategies were considered eligible for the review.

2.3. Literature database

The scientific databases Embase (Excerpta Medica dataBASE), MEDLINE (Medical Literature Analysis and Retrieval System Online) and LILACS (Latin American and Caribbean Health Sciences Literature) were selected for covering the selected countries in their scope and their relevance to health science in general and public health in particular.

2.4. Literature search strategies

The database search strategies were constructed according to databases specific terms and were combined with Boolean terms 'AND' or 'OR' (Annex A). We conducted the search in MEDLINE database using the PubMed tool. For technical documents, we conducted the searches in Google website using the advanced search tool. Two search strategies for each country were constructed and combined with Boolean terms 'AND' or 'OR' (Annex B). The search was complemented with the investigation of government healthcare websites of each selected country.

2.5. Selection criteria

Documents in English, Portuguese, Spanish and French were considered in the classification process. The initial period was set from 2000 to 15th December 2016. Articles and documents that reported oral health guidelines in PHC policies were considered eligible. The eligibility criteria were applied by two researchers and defined according to document type. For scientific documents, the inclusion criteria were: theme related to the review question; summary presence; and availability online or through manual search. Duplicates were excluded. For technical documents, the inclusion criteria were: theme related to the review question; governmental, professional or research entity authorship; and references from the literature. Dissertations and thesis were excluded. The inclusion criteria were applied by two reviewers and the level of consistency was 0.82 measured through Kappa statistic in the title and abstracts screening phase. Disagreements were debated and defined by consensus.

2.6. Methodological quality assessment

To assess methodological quality, documents were analysed according to their relevance to the field, clarity of presentation, rigor of the content and theoretical framework adopted, and editorial independence. For technical documents, authorship analysis was also performed to identify documents supported by governments, professional or research entities. Non-conforming documents were excluded and those selected to compose the review had their references screened.

2.7. Data extraction and category definition for analysis

We performed data extraction and tabulation using a synthesis matrix, elaborated from three categories previously defined. First, "oral health in the health system" explored and compared general characteristics of the oral health services coverage in the selected countries. Second, "comprehensiveness of care", sought out guidelines that ensured oral health services provision according to individuals, families and communities needs [4]. The extracts were distributed in subcategories "vertical comprehensiveness" and "horizontal comprehensiveness", based on previous definitions [17]. Vertical comprehensiveness corresponds to guidelines in which oral health services provision was focused on oral diseases and their treatment from basic to more specialized care, through secondary and tertiary levels, while horizontal comprehensiveness refers to guidelines aiming to broaden oral healthcare with the aid of other professionals and disciplines to produce and maintain overall health. It, therefore, implied interprofessional collaboration and involvement of diverse health disciplines beyond oral healthcare. The third category, "health promotion and disease prevention actions", summarized content related to promotion and prevention services, programmes and activities [9]. The extracts were distributed in two subcategories: first, "intra-sectoral", when activities referred only to the health sector and were undertaken by oral health professionals or multi-professional teams; and second, "cross-sectoral/intersectoral", when activities were organized not only by the health field but along with other government and society sectors [18]. Data obtained in the extraction process were displayed in an Excel software worksheet for synthesis and content analysis.

3. Results

The search resulted in 788 registers. After title and abstract screening and exclusion of documents not related to the review question, 78 documents were included for full-text screening. In the light of inclusion and exclusion criteria, the quality assessment and reference screening process, 41 documents were eligible for the review, 20 from scientific literature and 21 from grey literature. The selection flowchart is presented in Fig. 1.

3.1. Characteristics of the documents

Among included documents, nine (22%) refer to Australia, five (12%) to Canada, four (11%) to New Zealand, 13 (31%) to the United Kingdom and ten (24%) to Brazil. Regarding the publication period, five were published between 2000 and 2004, eight were published between 2005 and 2008, ten were published between 2009 and 2012 and 18 were published between 2013 and 2016.

3.2. Oral health in the health system

The oral healthcare supply in the public health system varied among countries, all of which have in common a public–private mix. In Australia, Canada and New Zealand, oral health care is mainly provided by private providers, and the financing of services depended on the user's ability to pay. Public providers play a minor role and offered limited treatments, focused on urgent needs and some basic procedures at the primary care level. These services were focused on vulnerable population groups such as children, teenagers, pregnant women, low-income adults, people living in regional and remote areas, people with disabilities and certain ethnic groups (e.g., Aboriginals and Torres Strait Islander people in Australia, Maori and Pacific people in New Zealand and Ontario First Nations in Canada) [19–27]. The coverage of these services varies according to the territory. The funding could be fully public or based on co-payments [19,22–31].

Access was different in the United Kingdom and Brazil, where oral care is guaranteed as a right and is delivered as part of PHC. In the United Kingdom, the right to access a dentist is in the National Health Service (NHS) constitution. However, dental services availability, coverage and extent varied according to territory, and users are responsible for part of the financing through co-payments. Due to NHS regulations, the private sector was not dominant in the oral health services provision [32–35].

In Brazil, the public health system, known as Unified Health System (Sistema Único de Saúde - SUS), also offered universal access to dental

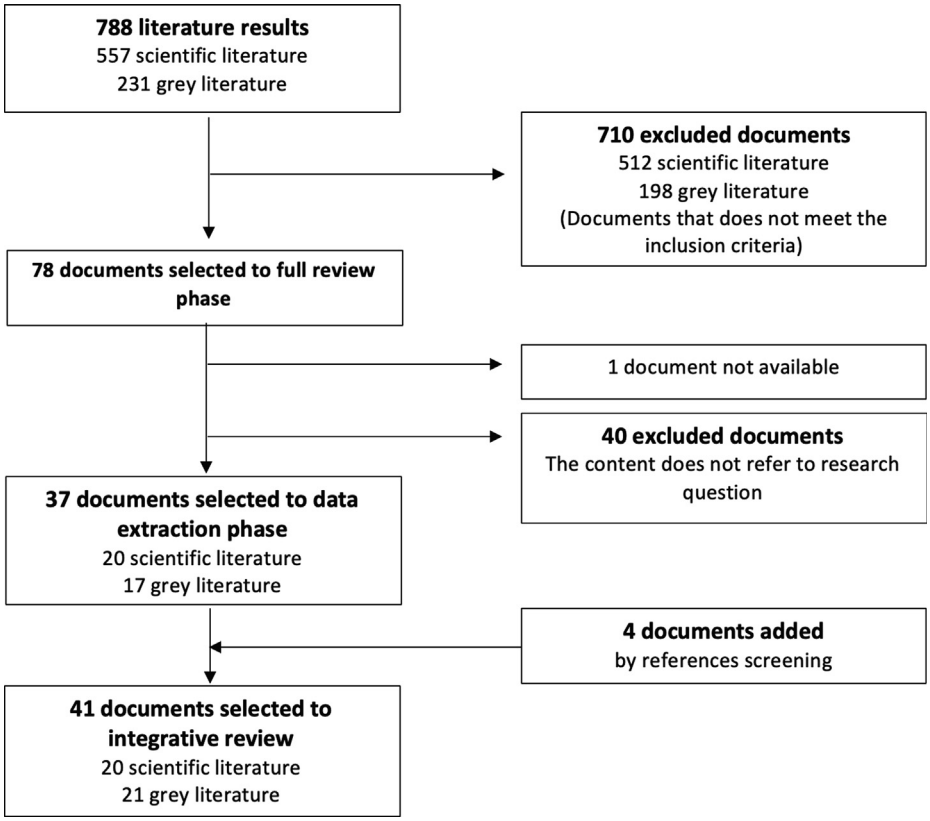

Fig. 1. Flow chart of the integrative review.

services through a public primary care network (two-thirds of their units had at least a general dental practitioner), supported by approximately one thousand dental specialty centres [3]. Despite state-funded services, the private sector was dominant in the oral health services provision [36–38].

The documents analysis showed divergences regarding the integration of oral health into the PHC model. For the United Kingdom and Brazil, guidelines considered oral health as an integral part of PHC and suggest the integration of oral health into PHC policies. In documents from Australia, Canada, and New Zealand, this integration was not clear. The services articulated as part of PHC were limited to very specific populations such as children, elderly, rural dwellers, pregnant women, local indigenous people, people with disabilities and low-income populations. Some documents recommended the reorganization of dental care to meet universal healthcare characteristics [25,39].

Due to the absence of clear guidelines regarding universalization, oral health services were extremely limited in publicly funded health systems in Australia, Canada and New Zealand and difficulties persist in implementing oral health as part of the public health system [20]. In Canada, results showed that oral health was not considered integrated with general healthcare because it was not part of the *Canada Health Act*, the federal legislation responsible for health insurance funded by the state [23,30,31].

3.3. Comprehensiveness of care

Comprehensiveness of care was cited in 34 documents (Table 1) referring to horizontal dimension in most of them (33/34). The most observed trend was to consider oral health services as an integral part of general health. There was convergence regarding the oral health services presence along with other services in PHC [21,28,40]. One of the best approaches to this integration was the construction of multiprofessional health centres [41–43].

The vertical dimension of care comprehensiveness was highlighted in less documents (25/34). This approach was described as the organization of oral health actions at all levels of care (primary, secondary and tertiary) in an integrated and continuous way, but not necessarily related to other health services. Experts have used this approach in describing NHS pilot proposals and dental care protocols in the UK [35,41,44]. Difficulties have been noted regarding oral care inclusion in health system structure to assure access to more specialized care, through secondary and tertiary care levels. These guidelines' characteristics are an indication that little emphasis is given to the vertical dimension of oral healthcare comprehensiveness. This finding might be related to the components required for achieving its effectiveness and even to the polysemy of the term [45].

Regarding the integration of care levels and several different health disciplines, the need for information systems capable of systematically gathering data has been recognized. The creation of a data source seems to be essential for guiding health practice, building scientific evidence and producing effective public policies [19].

3.4. Health promotion and disease prevention actions

The guidelines concerning health promotion and disease prevention actions described their potential to reduce inequities by dealing with social, economic, commercial, and environmental determinants of health (Table 2). A common aspect was the need to include oral health among general health actions [30,40,46]. To organize these actions, the common risk factors approach was highlighted [21,27,36].

Therefore, results were described in two subcategories – intra-sectoral and intersectoral actions. In intra-sectoral subcategory, the main points focused on oral healthcare for more vulnerable individuals, families and groups [41,44,57,63] through services reorientation

Table 1
Excerpts related to horizontal [H] and vertical [V] comprehensiveness of oral healthcare taken out from scientific [s.d.] and technical literature [t.d.].

Authors, year and document type	Comprehensiveness of oral healthcare
Australia	
Australian, COAG Health Council, 2004 [t.d.]	a) It calls for oral health to be an integral part of health policy and funding, and for coordination and integration of oral and general health care. p.2. **[H/V]** b) Foster the integration of oral health within health systems and services, particularly with respect to primary health care (…) p.33. **[H]**
Harford & Spencer, 2004 [s.d.]	a) Oral health in Australia suffers from the lack of a national policy, significant gaps in the information database and the lack of a broad research agenda and integration with general health care planning and services p.365. **[H/V]**
Commonwealth of Australia, 2013 [t.d.]	a) We recommend that all Australians should have universal access to preventive and restorative dental care, and dentures (…) p.10. **[V]** a) It considers the needs of particular population groups and issues to be taken into account in providing dental care to these groups p.18. **[H/V]** b) (…) the integration of dental health into general health has been important in providing services p.22. **[H]** c) (…) the need for publicly funded dental care to be based on a comprehensive, preventative, model of care p.41 **[H/V]**
The Public Health Association of Australia, 2014 [t.d.]	a) (…)advocate for: a population health approach; integration of oral health within primary health care; and the normalization of prevention oriented, person centred clinical dental care (…). Disadvantaged groups have a higher burden of oral disease and should be given priority in public oral health care programs p.1. **[H]** b) (…) It recommended a 'Denticare Australia' system and three further oral health reforms aimed at promoting lifelong oral health and making oral health care an integral part of primary health care. p.4 **[H]**
Thomas et al., 2014 [s.d.]	a) (…) to provide a coordinated, comprehensive service that functions to promote health, prevent illness and reduce the current over-reliance on hospital services (p. 2) **[H/V]** b) In considering what core PHC services should be available to all Australians regardless of where they live, there was a particularly strong consensus for (…) 'oral/dental health' and 'public health/illness prevention' services" (…) (p. 7). **[H]**
Australia, COAG Health Council, 2015 [t.d.]	a) Services, including prevention and health promotion, should be accessible to all who need them, across cultures, language groups, communities of place and interest, abilities and socio-economic groups, with recognition and respect for individual needs and views. p.17 **[H/V]** b) Coordinated and consistent models of care and health pathways for oral disease will support integration between sectors and with the broader health system. p.31 **[H/V]** c) Systems alignment and integration requires oral health to be part of and coordinated with the general health system. Alignment and integration must occur at all levels of the health system (…).The promotion of inter-sectorial collaborations at policy, program and care delivery levels will be particularly important (…) p.32 **[H/V]**
Parliament of Tasmania, 2016 [t.d.]	a) This requires a coordinated effort across agencies providing guidance and benchmarking on policies to address the social determinants of health. p.3 **[H/V]** b) Government proactively address equity of access to health services across both primary and acute health care. p.4 **[H/V]**
Western Australia Department of Health, 2016 [t.d.]	a) Strengthen the focus on oral health as an integral part of general health and education policies and plans. p.24 **[H/V]** b) Collaborating with these non-dental settings is an important way to integrate oral health consideration into broad care. p. 23 **[H/V]** c) Coordinated and consistent models of care and health pathways for oral disease will support integration between sectors and with the broader health system. p.31 **[H/V]**
Canada	
Canada, Fed., Prov., Territorial Dental Working Group, 2013 [t.d.]	a) A common national agenda based on the endorsement of provincial, territorial and federal governments in implementing basic oral health promotion, prevention and treatment would improve the oral health status of Canadians. p.3 **[H/V]** b) Reimburse preventive and treatment services for vulnerable populations: people receiving social assistance; Aboriginal People; immigrants; and residents of LTC facilities. p.14 **[H/V]**
Rowan-Legg et al., 2013 [s.d.]	a) Because paediatric oral health is a fundamental component of overall health, services and programs for dental care should be held to the same standards of accessibility, universality and comprehensiveness as other responsibilities under the Canadian Health Act. (…)Ensure that all children in their respective jurisdictions be afforded equal access to basic treatment and preventive oral care, regardless of where they live or their family's socioeconomic status (…). Assure provision of dental services under the Canada Health Act tenets, with special attention on marginalized populations (p. 41). **[H]**
The College of Dental Hygienists of Nova Scotia, 2014 [t.d.]	a) Oral health should be integrated into health care legislation, research, policy, strategy development and program planning across the provincial health sector in consultation with appropriate stakeholders, including CDHNS. p.17 **[H/V]**
New Zealand	
New Zealand, Ministry of Health, 2006 [t.d.]	a) (…) previous isolated ways of working need to be replaced by new collaborative models, and that a broader approach to primary health care can contribute to reducing health inequalities and improving outcomes (…). coordination of care between different services is important for a comprehensive disease prevention and management approach. p.18 **[H/V]** b) This work will have implications for primary and secondary-level services, and will also require cross-agency input (for example, from the Ministry of Social Development) p.25. **[V]**
Jatrana & Crampton, 2009 [s.d.]	a) (…) oral health care is primary care and we need a health care system that meets the principles of primary health care(…) government has started the process of integrating oral health with general health programmes (p. 9). **[H]**
Jatrana et al., 2009 [s.d.]	a) Integration of oral health and dental care into primary health care is important because of the integral nature of oral health with general health (…).What does it mean to integrate oral health with primary health care (PHC)? It broadly means bringing dental care and primary health care under one roof, thus providing dental care services as part of comprehensive primary health care. p.48. **[H]**
Matheson et al., 2013 [t.d.]	a) Primary Health Care is the name given to this approach. (…) It also encompasses promotion, prevention and public health, and working across sectors. n.p. **[H]**

(*continued on next page*)

Table 1 (*continued*)

Authors, year and document type	Comprehensiveness of oral healthcare
	b) Service developments are to be focused on children and young people, prisoners, dental health and chronic care management. Population registers will remain the core and provide the basis of information on service usage for the population through all levels of care. (n.p. **[H]**
United Kingdom	
Wales Assembly Government, 2002 [t.d.]	a) The potential is not only for integration of dentistry with other services but for better integration of the different dental services themselves. p.28 **[H/V]**
	b) The Welsh Assembly Government needs primary dental care to be a central performer in the development of a healthier Wales and a major contributor to ensuring equality of health service provision (…).Wales has a very broad approach to primary care and it is vital that dentistry takes its place at the heart of it. P.45 **[H]**
Pitts, 2003 [s.d.]	a) Primary care dentistry as it currently exists (community dental services, personal dental services and general dental services) needs to be integrated. It is the view of the group that in this way PCTs will find it easier to provide a dental service that is properly responsive to the changing needs of local communities'. (…) NHS Dentistry needs to be fully integrated with the rest of NHS primary care provision. One way to achieve this would be to initiate multi-surgery health centres in some geographical areas from which dental, medical and pharmacy services could be provided for the locality. In order to underpin the integration of dentistry with the rest of the NHS substantial capital investment in IT for dental practices would be required. p.634 **[H]**
Batchelor, 2005 [s.d.]	a) A major theme within the NHS reform program lies in ensuring that as much care as possible is provided within a primary care settingp.12 **[H]**
	b) Dentists are being challenge to work together with their PCTs (Primary Care Trusts) to develop agreed standards for patient care(…) p.15 **[H]**
Scottish Executive, 2005 [t.d.]	a) Oral health as an integral part of overall health improvement, underpinned by a free dental examination for all population groups. (…) Closer integration of dentistry within the wider NHS family, through a national framework with local flexibility. p.3 **[H]**
	b) Services should offer an opportunity for regular comprehensive assessment of oral health needs and for preventative care, advice and appropriate treatment. p.13 **[H/V]**
Northen Ireland, Dept. Health, Soc. Serv. and Public Safety, 2006 [t.d.]	a) A primary dental care service provides the first point of contact for people seeking advice or dental treatment (…). For more complex interventions the patient should be referred to an appropriate specialist. p.4 **[V]**
	b) The encouragement for single-handed practices to come together into multi-surgery practices. Where this is not possible (for example in remote areas) practice networks will be supported. p.40 **[H]**
Northen Ireland, Dept. Health, Soc. Serv. and Public Safety, 2007 [t.d.]	a) In modernising primary care dental services, comprehensive access to appropriate dental care should be safeguarded. p.38 **[H/V]**
Steele et al., 2009 [t.d.]	a) The purpose of dentistry's inclusion was clear – oral health is not separate from people's overall health and the prevention and treatment of oral disease is part and parcel of the NHS. p.39 **[H]**
	b) We recommend that the pathway is staged and based around: making urgent care available; assessing risk and preventing disease; routine management of disease; monitoring during continuing care; and provision of advanced services intended to restore and maintain quality of life. p.46 **[H/V]**
Harris & Bridgman, 2010 [s.d.]	a) Puts care pathways in dental care into a wider healthcare context. p. 233 **[H/V]**
	b) Describes a new commissioning model for general dental practice based on a needs and risk assessment linked to care pathways for preventive care. p.233 **[H]**
Williams et al., 2010 [s.d.]	a) (…) This is important now that specialist dental services can be specifically commissioned in primary care settings under Personal Dental Services agreement in England. The current trend of bringing secondary care services into the primary setting has been seen by many as the way forward and there is a clear focus on delivery by a high-quality workforce. p.53 **[V]**
Pavitt et al., 2014 [s.d.]	a) In England, in 2006, new dental contracts devolved commissioning of dental services locally to Primary Care Trusts (PCTs) to meet the needs of their local population. p.1 **[H]**
Brazil	
Brazil, Ministry of Health, 2004 [t.d.]	a) Within the scope of assistance, these guidelines are related, fundamentally, to the expansion and qualification of primary care, enabling access to all age groups and the provision of more services, ensuring care at secondary and intermediate levels in order to seek integrality of attention. Translated. p.4 **[H/V]**
Nascimento et al., 2009 [s.d.] o	a) (…) the two experiences have brought important advances for improving access, humanization of health care, integration of the health care team in providing responses to the users' clinical problems, among others. p.461 **[H/V]**
Chaves et al., 2010 [s.d.]	a) A comprehensive oral health care includes the integration of oral health promotion, protection, recovery and rehabilitation actions, as well as the guarantee of integration between the different levels of complexity of the health services system (…). Translated. n.p. **[H/V]**
Pucca Junior et al., 2010 [s.d.]	a) These guidelines aim to ensure the actions of promotion, prevention, rehabilitation and maintenance of oral health of Brazilians. p.27 **[H/V]**
Brasil, Ministério da Saúde, 2012 [t.d.]	a) (…) taking responsibility for the care of users through a horizontal, continuous and integrated relationship, aiming a shared management of comprehensive care. Articulating also other structures of health and intersectoral, public, community and social networks. Translated. p.26 **[H/V]**
	b) Ensure health care needs are delivered in a comprehensive way through health promotion, protection and recovery and disease prevention; Translated. p.44 **[H/V]**
Nascimento et al., 2013 [s.d.]	a) In line with the principles of the PHC approach, the primary oral health-care team is elected to be the first preferential contact between the patients and health-care services, which optimises financial costs and endeavours to improve patient access. (…)Oral health care in the PHC approach still cannot accommodate and offer integrated care for the oral problems of the population at all levels of complexity. p.241 **[H/V]**
	b) At present, a major challenge in oral health care for the Brazilian SUS involves the guarantee of integrity of care. p.242 **[H/V]**
Aguiar et al., 2014 [s.d.]	a) (…) specific policies designed to implement oral health interventions within the primary health care setting were introduced. p.1561 **[H]**
	b) (…) room for sharing oral health actions and other actions aimed at horizontal integration. p.1563 **[H]**
Mattos et al., 2014 [s.d.]	a) The approach of the Family Health Strategy (FHS) to the dentist's work is far beyond the clinical work, as it embraces a logic of thinking in health in an integral and expanded way (…) Considering the importance of offering the population all levels of complexity of the included in the principle of comprehensiveness. Translated. p.379 **[H/V]**

Table 1 (*continued*)

Authors, year and document type	Comprehensiveness of oral healthcare
Scherer CI & Scherer MDA, 2015 [s.d.]	a) (…) the comprehensiveness is incipient and with weaknesses to be faced in the work of the FHS teams. The analyzes may be associated with the polysemy and the scope of the concept. Actions as expanded clinic, integration of individual and collective practices and resolution with access guarantee and articulation with other levels of care are required for its effectiveness. Translated.(XX) **[H/V]**

toward disease prevention [28,35,64] including clinical coordination [37], appropriate recall interval [34] and actions such as individualized fluoride application, prophylaxis, supervised oral hygiene, and counselling [35,47]. Examples have also been mentioned from the perspective of multidisciplinary approach [23], based on interprofessional collaboration [64] and actions involving other health professionals [65] such as family physicians, paediatricians and nurses, that includes mouthguards use during sports; breastfeeding; smoking cessation programs; blood pressure checks; sugar-free chewing gum and new-borns microbiota control by parents and guardians [32,39].

The subcategory 'intersectoral actions' encompassed actions that depend on government and society sectors other than the health sector. Among them, mentioned measures were: water supply fluoridation, educational actions focused on health, welfare policies, healthy-eating promotion strategies, and strong interactions between the health sector and other sectors, such as agricultural, industrial, transport, education and media sectors. Fluoridation was the action with greatest emphasis on results, and documents described efforts to maintain and extend its reach [28,36,46,48]. The spread of fluoridated toothpaste use has been mentioned in all countries [22,23,36,39,48]. A common perception reported by some researchers concerns the difficulty of translating the concept of health promotion into practice, especially when intersectoral actions are needed [32,37,49]. To make these changes possible, middle-level workers like dental hygienists [31] or oral health technicians [51] should be included in oral health teams.

4. Discussion

This study has identified relevant guidelines in the selected countries, but effective oral health integration into PHC policies remains a major challenge, particularly in Australia, Canada, and New Zealand. In the United Kingdom, results showed that oral healthcare was provided by NHS; however, the extent of services depended on the professionals, who largely worked independently. There was a need for more efforts to integrate oral health into PHC [50]. In Brazil, guidelines reinforced the oral health integration into PHC policy; however, implementation of actions depended on the local authority and faced a conflictive context involving different local arrangements of PHC [51]. The need to overcome challenges and strengthen oral health within PHC in order to decrease oral diseases prevalence was a shared point in the documents [52].

The trend towards health care integration in response to the increase in chronic diseases and comorbidities characterizes the guidelines. The findings suggest a complex process that relies on multiple components to be effective, including efforts to manage health systems and their services according to population needs [8]. Horizontal dimension of care comprehensiveness was more frequently mentioned than was vertical dimension regarding dental care, indicating a tendency to integrate oral health services with other same-level health services. The vertical dimension was described when guidelines included actions at specialized care levels. Only by combining these dimensions can comprehensive care provision be achieved according to PHC attributes [53]. However, persistence of traditional clinical disease-focused practices [45] and guidelines limitation related to the formulation of targeted programmes for specific and/or high-need groups [28] may create more difficulties for the reorientation of oral health care delivery than would result from a well-designed universal and targeted activities combination.

Health promotion and disease prevention actions were commonly described in the guidelines. These actions shift practices from a dominant model focused on disease treatment to a new health care model, based on individuals, families and community's needs. This approach is strongly recommended as the most effective way to reduce health inequities worldwide [2,4]. Intersectoral strategies were highlighted as a way to reorient health services and create public policy through common risk factors approach to promote oral health. This is strongly recommended as an effective chronic diseases control method and as an opportunity to expand actions to oral health activities in addition to other health fields and policy sectors [1,3,54].

Among intersectoral actions, water fluoridation continues to be the most recommended, justified as the most cost-effective measure and as capable of reducing inequities [2]. The importance of programmes aimed at ensuring access to fluoride toothpaste was unanimous. Tooher et al. (2017) suggest that these actions are effective, but, to ensure programmes sustainability, the participating sectors must overcome barriers to understand the operational context from an intersectoral point of view [55]. Actions in partnership with the education sector were also frequently mentioned. The development of strategies for integrating health promotion and oral disease prevention with other sectors are part of the nine work areas presented in the Liverpool 2005 Declaration [56]. This goal was reaffirmed by the WHO in Astana Declaration [8]. Effectiveness and sustainability of these strategies appear to be strengthened through partnerships between statutory bodies and community and voluntary groups [47,57].

As intra-sectoral actions, recommendations to include middle-level workers in oral health teams and integrate oral health professionals in well-structured preventive multidisciplinary programmes, such as those aiming to reduce tobacco consumption, obesity prevention, and blood pressure measurement [32] were highlighted. They also pointed to changes in oral healthcare delivery model with emphasis on interprofessional collaboration and middle-level workers participation [9].

The social, political and institutional structures and their dynamics directly affect health systems [58]. This critical point can be observed in studied countries, even though all of them have adopted characteristics related to universal health systems at a certain level. Regarding the provision of dental services, a public–private mix dominated. However, the strengthening of liberalism and the increase in fiscal austerity observed in recent years may produce serious constraints on public investment and limit access of deprived populations to oral health services [3]. To reduce inequities and promote benefits for all, including the most vulnerable groups, policies based on egalitarian and social justice theoretical perspectives are needed [59].

For countries where oral health integration in PHC policies is not yet a reality, governments and non-State, not-for-profit and voluntary entities should commit to strengthen public policies that ensure universal access to oral healthcare. The Universal Health Coverage (UHC) seems to be the WHO elected strategy to reach this goal. Some researchers consider UHC may help to place oral health on the broader international agenda [60]. However, some experts have postulated that integrated, publicly funded oral healthcare systems should be provided with infrastructure, financing, and governance able to outreach collaborative practice and maximum quality services [3]. For this to be

Table 2
Excerpts related to inter- and intra-sectoral actions for disease prevention and health promotion taken out from scientific [s.d.] and technical literature [t.d.].

Authors, year and document type	inter- and intra-sectoral [E/A] actions for disease prevention and health promotion
Australia	
Australia, COAG Health Council, 2004 [t.d.]	a) (…) to ensure that oral health is an integral part of health promotion and common risk factor initiatives. At the same time, oral health practitioners should be active participants in general health promotion programs. p.18 **[E/A]** b) Work with governments, industry and the media to limit the promotion and advertising of foodstuffs and beverages that are harmful to the oral health of children. p.20. **[E]** c) That involves talking about the basic principles that you have, which include prevention and population health, and including people outside of dentistry as part of the model (…). p.40 **[A]** d) (…) measures such as fluoridation of the water supply and education on preventive care and diet can reduce the necessity for more invasive and expensive treatments. (XX) **[E]**
Harford & Spencer, 2004 [s.d.]	a) An important approach for oral health improvement is population-wide prevention strategies. Water fluoridation has been a successful and cost-effective primary care strategy for improving oral health in Australia. p.365 **[E]** b) This leads into the final area of priority for oral disease prevention, which is linkage with other health promotion activities. (…) In some instances, more targeted programs of oral health promotion are appropriate. (…) health promotion approaches should be directed at clusters of risk factors common to a number of diseases and the social structures which influence individuals' health risks (…) Significant control of oral diseases requires cooperation across agencies within the health sector and between the health sector and other sectors. p.366 **[E/A]** c) At a service provision level, there is a need to reorient services away from emergency treatment to preventive general dental care. p.367 **[A]**
Commonwealth of Australia, 2013 [t.d.]	a) For dental and oral health to be integrated into promotional strategies to maintain and improve general health and well-being, significant reform encompassing a long- term, holistic approach to dental and oral health care will be needed. p.3 **[E/A]** b) (…) that effort should be focussed on how 'fluoridation of reticulated water supplies is the most effective, equitable and efficient measure of controlling dental disease. p.40 **[E]**
Crocombe et al., 2013 [t.d.]	a) (…) for oral health promotion and to develop a National Oral Health Promotion Plan (…) n.p. **[E/A]** b) Evidence-based preventive oral health measures that can be undertaken by individuals include toothbrushing with fluoride toothpaste, chewing sugar-free gum, if playing a sport with a reasonable risk of injury to wear a mouthguard and if a mother with an infant, breastfeeding. n.p. **[E/A]** c) (…) recommend that water fluoridation should be expended to as many people as possible. n.p. **[E]** d) Despite advocacy over a long period for the common risk factor approach to the management of caries, the integration of oral health promotion into health promotion strategies, and emphasis on the importance of oral health to systemic well-being. n.p. **[E/A]**
The Public Health Association of Australia, 2014 [t.d.]	a) Establishing a prevention system for oral health. p.4 **[A]** b) Integrate oral health promotion and disease prevention activities into general health promotion (…) a common risk factor approach. p.6. **[E/A]** c) Promote fluoridation of water as an effective public health measure. p.7 **[E]**
Thomas et al., 2014 [s.d.]	a) Other examples related to inter-sectoral collaboration with departments of housing, education and environmental services, which addressed the social determinants of health. p.6 **[E]** b) Support of 'public health/illness prevention' reflects recognition of the importance of services that have a whole-of-population effect, that focus on prevention and early detection of health problems and can address the social determinants of health. p.7 **[E]**
Australia, COAG Health Council, 2015 [t.d.]	a) A population health approach aims to improve the oral health of the whole population and reduce oral health inequalities across population groups through evidence-based strategies and actions (…).The common risk factor approach addresses risk factors common to many chronic conditions. p.17 **[E]** b) (…) water fluoridation should be continued as it remains an effective, efficient, socially equitable and safe population approach (…) p.23 **[E]**
Parliament of Tasmania, 2016 [t.d.]	a) Government adopt a preventative health strategy recognising and resourcing a range of health related areas. p.3 **[E/A]** b) Government develop an effective communications strategy for health promotion and service delivery using an inclusive approach (…). Funding be significantly increased for preventative health measures to improve the long term health and wellbeing of Tasmanians. p.5 **[E/A]** c) The primary focus of any system of oral health care should be on the prevention of disease. p.55 **[A]** d) Incorporating oral health promotion into general health promotion by taking a 'common risk factor' approach is likely to be more efficient and effective than programs targeting a single disease or condition. p.74 **[E]**
Western Australia Department of Health, 2016 [t.d.]	a) Community water fluoridation is a cost-effective and equitable means of increasing exposure to the protective effects of fluoride (…) p.9 **[E]** b) A population health approach aims to improve the oral health of the whole population and reduce oral health inequalities across population groups through evidence-based strategies and actions. p.17 **[E/A]** c) The risk factors for poor oral health exist across a variety of non-dental settings including education, aged care, childcare and community settings and services. p.23 **[E/A]**
Canada	
Canada, Fed., Prov., Territorial Dental Directors, 2005 [t.d.]	a) To improve oral health promotion that addresses the determinants of health, and to foster public awareness of the importance of good oral health and the relationship between oral health and general health. (…) integration of oral health promotion, prevention and treatment with other aspects of health care. p.4 **[E/A]**
Chiefs of Ontario, 2013 [t.d.]	a) Focusing on the prevention of oral disease and the promotion of proper oral health practices (…) p.4 **[A]** b) While access to regular dental treatment is essential, this must be done in conjunction with broader policies aimed at all social determinants of health (…).Collaboration between dental professionals and educational outreach programs needs to occur on a more consistent and regular basis to motivate dental professionals to serve Ontario First Nations' needs. p.21 **[E/A]**
Canada, Fed., Prov., Territorial Dental Working Group, 2013 [t.d.]	a) Oral health must also be considered from the perspective of chronic disease risk factors. (…) Common key risk factors include poor diet, smoking, and increased alcohol use. p.11 **[E]** b) Collaborate broadly to address the social determinants of health. (…) Develop and sustain an oral health awareness and promotion campaign with coordinated messaging among dental, health and public health organizations and government agencies (…). Collaborate with other health professionals (e.g. nutrition, nursing, speech and language) to organize and deliver oral health promotion initiatives within their areas. p.16 **[E/A]**

Table 2 (*continued*)

Authors, year and document type	inter- and intra-sectoral [E/A] actions for disease prevention and health promotion
	c) Increase access to fluoridated water to help prevent dental cavities. Provide accurate, recent data and make it widely available to counteract misinformation and anti-fluoride campaigns. p.18 **[E]**
Rowan-Legg et al., 2013 [s.d.]	a) The caries process is controllable through a combination of community, professional and individual measures, such as promoting proper feeding, improving diet, water fluoridation, increasing the use of topical fluorides and dental sealants by primary health care providers, and using fluoride toothpaste. p.36 **[E/A]**
	b) A multidisciplinary approach to paediatric oral health care be developed, involving physicians, dentists, hygenists, nurses and schools. p.42 **[A]**
The College of Dental Hygienists of Nova Scotia, 2014 [t.d.]	a) (…) advocate for policies and programs that promote oral health (community water fluoridation, "First Visit by First Birthday" protocol, publicly funded dental coverage for seniors). (…) coordinate and deliver programs that promote oral health and prevent disease. p.3 **[E/A]**
	b) Dental hygienists should be included in the primary health care system as preventive therapists who contribute meaningfully to collaborative inter- disciplinary health care teams. p.17 **[A]**
New Zealand	
New Zealand, Ministry of Health, 2006 [t.d.]	a) Improving and maintaining oral health through prevention and promotion is a more effective way to achieve good oral health in the long term. (…)Promoting a healthy environment for oral health will also involve actions not solely directed at oral health. An environment that supports oral health is often the same as one that supports general health and wellbeing. p.15 **[E/A]**
	b) The number of Maori-specific programmes, such as fluoride toothpaste brushing in kohanga reo, is increasing. However, as with other programmes, systematic evaluation of the impacts of these initiatives on oral health status is important for the future p.16 **[E/A]**
	c) The Ministry will continue to advocate water fluoridation at all levels. p.17 **[E]**
	d) The Ministry will consider ways to include oral health in general health promotion strategies that address similar risk factors, and will encourage DHBs to do the same. p.17 **[E]**
Jatrana & Crampton, 2009 [s.d.]	a) (…) an action plan for the promotion of integrated disease prevention in oral health as part of the control of non-communicable diseases (NCDs) within the framework of enhanced primary care. (…) government has started the process of integrating oral health with general health programmes. p.9 **[A]**
Jatrana et al., 2009 [s.d.]	a) The insufficient emphasis on primary prevention of oral diseases, poses a considerable challenge for several groups of people, (…) women, older adults, and those from lower socioeconomic groups, who face greater barriers in accessing oral health due to cost barriers. (…) Oral health and disease are impacted on by diet, hygiene, smoking, alcohol use, stress, and trauma. As these risk factors are common to a number of other chronic diseases, adopting a collaborative approach would be more rational than one that looks at the diseases in isolation. p.49 **[A]**
United Kingdom	
Wales Assembly Government, 2002 [t.d.]	a) (…) outlined the National Assembly's integrated approach to improving health and reducing health inequalities through a program of action cutting across all policy areas (…).There is a need for a common risk factor approach to preventing oral disease. (…) We recognize the need to promote the inclusion of oral health within general health promotion initiatives using a common risk factor approach as laid down in the Ottawa Charter, that is through creating a supportive environment, developing personal skills and strengthening community action. p.32 **[E/A]**
Pitts, 2003 [s.d.]	a) (…) dentistry to be included in healthy lifestyles programs and the health improvement and modernization program. (…) as well as an expansion in dentistry's role to cover participation in smoking cessation programs and blood pressure checks. p.634 **[A]**
Batchelor, 2005 [s.d.]	a) (…) there was and is a growing realization within Government of the importance in trackling the wider social determinants of ill health. If disease levels are to be reduced, increased treatments alone are not the answer. p.12 **[E/A]**
Hally & Pitts, 2005 [s.d.]	a) It is proposed that unlike the present General Dental Services examination the new OHA will focus on prevention of disease, lifestyle advice, the discussion of any necessary treatment options and date of next assessment. p.120 **[A]**
Scottish Executive, 2005 [t.d.]	a) Improvements in oral health, particularly for children, cannot be achieved solely by those providing dental services. They require a multi-faceted approach, involving other sectors within the NHS, other statutory agencies, such as education authorities, and by tackling the broader determinants of poor oral health such as diet and smoking. Oral health improvement also needs commitment from the population – communities, individuals, patients and parents. p.13 **[E]**
Northen Ireland, Dept. Health, Soc. Serv. and Public Safety, 2006 [t.d.]	a) The government (…) should target the prevention of disease and other oral conditions by encouraging regular attendance at primary dental facilities. p.6 **[A]**
	b) There should be a shift in emphasis from repairing the effects of dental disease to disease prevention. p.7 **[A]**
	c) In the absence of water fluoridation an alternative is to take the preventive intervention to those most at risk. p.19 **[E/A]**
Northen Ireland, Dept. Health, Soc. Serv. and Public Safety, 2007 [t.d.]	a) Oral health professionals are required to focus more on prevention, to link with other complementary health promotion programs in order to maximize efficiency and to further develop partnerships with those outside the health sector such as schools, local councils and community groups. (…) The Strategy recommends that where oral and non-oral conditions share common risk factors, health professions should work together to maximize resources. (…)The greatest oral health gain is likely to be achieved through community water fluoridation p.vi **[E/A]**
	b) By focusing preventive action on a small number of risk factors that impact on a large number of diseases, effectiveness and efficiency may be increased. To do this oral health promotion needs to be linked into general health promotion at a strategic level. p.vii **[E/A]**
Steele et al., 2009 [t.d.]	a) (…) the extension of water fluoridation is a part of putting oral health within the context of wider public health and policy developments and should confer a benefit at all ages, but it is only one part. There is a wider responsibility, and it is important that oral health is embedded into general public health initiatives in a holistic way. (…)The options for initiatives on public health are many. In Scotland, the Childsmile scheme has taken an innovative multi-professional approach to preventing dental caries by bringing together health visitors, schools, dentists, dental nurses and others (…) Social marketing development and ambitions should incorporate dental behaviors in future work. These can build on the importance of the Brushing for Life campaigns.(…) improve and monitor simple dental behaviors, such as regular brushing with a fluoride toothpaste (…) There are multiple opportunities to embed oral health in public health: national campaigns around preventive behaviors to support patients in taking greater responsibility for their own health; monitoring and promoting good oral health behaviors alongside alcohol reduction and smoking cessation programs; recognizing the common risks shared with major oral diseases (decay, gum disease and oral cancer); and defining actions to create a healthier environment (e.g. working with the food industry to reduce levels of sugar). p.52 **[E/A]**

(*continued on next page*)

Table 2 (*continued*)

Authors, year and document type	inter- and intra-sectoral [E/A] actions for disease prevention and health promotion
	b) We recommend that every opportunity is taken to place oral health firmly within public health and vice versa, with activities such as diet improvement and smoking cessation mainstreamed within dentistry and oral health risks addressed by wider public health initiatives. p.53 **[E/A]**
Harris & Bridgman, 2010 [s.d.]	a) Care protocols used for each diagnostic group define the number and type of preventive intervention as well as recall periods for 'check-up' examinations. p.236 **[A]**
Scotland, Chief Dental Officer, 2013 [t.d.]	a) No single approach alone will deliver improvement to our oral health; rather, a multi-faceted, whole-generation approach is required to tackle people's habits and behaviors. p.6 **[A]**
	b) It has long been recognized that oral health promotion needs to be firmly integrated with general health promotion in order to maximize its effect; together, they can tackle the risk factors associated with the main chronic non-communicable diseases. (…) Areas of Action: Common risk factors and oral health promotion, fluoride, improving diet and sugar intake, reducing smoking, reducing alcohol consumption. p.22 **[E/A]**
	c) The program promotes wider partnership working among healthcare professionals and agencies to deliver primary care prevention programs, anticipatory care and the appropriate management of caries within NHS services and in other settings. p.27 **[A]**
Pavitt et al., 2014 [s.d.]	a) The new contracts are aimed at: ensuring that evidence-based preventive interventionsare deliveredin line with identified needs for a defined population (…) p.3 **[A]**
	b) The patient care pathway includes evidence-based prevention and advice, appropriate recall interval and restorative care (…). p.4 **[A]**
Sihra & D'Cruz, 2014 [s.d.]	a) (…) the aim of improving access and quality and increasing the focus on prevention. p.7 **[A]**
	b) (…) Based on this information, recommended evidence-based preventive treatment and interventions can be provided. p.8 **[A]**
	c) Interim Care appointments may involve preventive treatment and/or advice, instead of (or as well as) treatment to address dental decay (eg fluoride application, prescription of higher strength fluoride). P.10 **[A]**
	d) Advanced care will be available for patients for whom it is clinically feasible and beneficial and the dental team will become increasingly involved in the delivery of a preventive care pathway. p.16 **[A]**
Brazil	
Brasil, Ministério da Saúde, 2004 [t.d.]	a) Health promotion actions also include working with the common risk factor approach or protective factors for both oral cavity diseases and other conditions (diabetes, hypertension, obesity, trauma and cancer) such as healthy eating policies, reduce sugar consumption, community-based approach to increase self-care with body and oral hygiene, smoking cessation and accidents' reduction policy. (…) This group of actions can be developed by the health system, articulated with other government institutions, companies, community associations and with the population and their representative bodies (…). [The oral health promotion] Means the construction of healthy public policies, the development of strategies aimed at all people in community, such as policies that generate opportunities for access to treated water, encourage water fluoridation, use of fluoridated toothpaste and ensure the availability of appropriate basic dental care.Translated. p.8. **[E/A]**
	b) Consequently, the professionals of the oral health team should develop the ability to propose alliances, either within the health system itself, or in actions developed with the areas of sanitation, education, social assistance, culture, transportation, among others. Translated. p.12 **[E/A]**
Mendonça, 2009 [s.d.]	a) a) The importance of comprehensiveness, related to services that determine the treatment and recovery of patients, and also promote health and prevent disease, including the unnecessary use of technologies, which makes Family Health a field of diverse intersectoral actions (…). Translated. p.1496 **[E/A]**
Nascimento et al., 2009 [s.d.]	a) It was generally noticed among subjects a conceptual misunderstanding between health promotion and preventive actions for specific oral diseases. (…) Those who expressed understanding about health promotion and its relevance for changing the model reported operational difficulties in its application, either because of staff shortage or inadequate extra-sectorial articulation. p.460 **[E]**
	b) Health promotion should be incorporated as a routine practice in PHD, replacing isolated clinical practice with broadened clinical practice.(…) The concept includes clinical coordination, but must also involve intervention in determinants and conditioning factors of the health-disease process (…) p.461 **[E/A]**
Chaves et al., 2010 [s.d.]	a) The PNSB guidelines aim universal access and comprehensive oral health care. (…) articulation of various public policies linked to a set of change projects (urban reform, land reform, among others) that act on living and health conditions through intersectoral action. Translated.n.p. **[E]**
	b) b) procedures performed in primary care, including preventive (cleaning, supervised oral hygiene and fluoride application) and curative procedures (restoration and extraction). Translated. n.p. **[A]**
Pucca Junior et al., 2010 [s.d.]	a) Intersectoral policies were necessary, as well as the integration of preventive, curative, and rehabilitation actions, and focusing on health promotion (…)The National Policy for Oral Health was established and linked to other public health policies, with the following main lines: (…) addition of fluoride in the public water supply (…) p.27 **[E]**
Brasil, Ministério da Saúde, 2012 [t.d.]	a) Develop intersectoral actions that integrate projects and social support networks focused on the development of comprehensive care. Translated. p.42 **[E]**
	b) Deliver individual and collective oral health care (health promotion and protection, disease prevention, diagnosis, treatment, monitoring, rehabilitation and maintenance) to families, individuals and specific groups, according to planning of the team (…). Translated. p.50 **[E/A]**
Nascimento et al., 2013 [s.d.]	a) In addition, the municipal governments must provide stimulus for adding fluoride to drinking water supplies. p.239 **[E]**
	b) This organisation actively seeks the most vulnerable groups to address the social determinants of poor health and places an emphasis on promotional and preventative activities, without neglecting the clinical time necessary for healing and rehabilitation. p.240 **[A]**
	c) However, it is clear that many challenges and inequalities persist in the field of oral health care – a situation that needs to be strongly tackled through a mixed approach, by facing social determinants (upstream) and simultaneously preventing modifiable risk factors at the individual level (downstream). p.241 **[E]**
Aguiar et al., 2014 [s.d.]	a) The Brazilian OHTs (Oral Health Technicians) are assigned direct actions for both individual dental care and community activities for disease prevention and health promotion. p.1561 **[A]**
	b) The work was aimed at an all-encompassing primary health care, and the ability to practice it included the participation of OHTs in actions corresponding to both health promotion and individual care. p.1567 **[A]**

Table 2 (*continued*)

Authors, year and document type	inter- and intra-sectoral [E/A] actions for disease prevention and health promotion
Mattos et al., 2014 [s.d.]	a) (…) every health development effort with a broader focus requires the association of all social and economic forces with the purpose of collective well-being. Intersectorality materializes in activities at the local level, but its articulation must take place at all levels of government. (…) There seems to be a lack of understanding of the real meaning of intersectorality in health by most participants. Translated. p.378 **[E]** b) To dentists and dental assistants, there is unanimity in considering as progress greater access and the introduction of preventive activities. (…) A greater articulation of all administrative sectors of the municipality is important and necessary in order to implement universal, equitable and integral public policies in all services, not only in the health area. Translated. p.380. **[E/A]**
Scherer CI & Scherer MDA, 2015 [s.d.]	a) Intersectoral actions were (…) related to prevention and education actions in oral health developed in the community or in schools. Translated. p.4 **[E]**

achieved, regulatory mechanisms should be implemented within national State's scope. These mechanisms should guide reforms in health systems capable of allocating not only individual needs but also the diversity of communities' needs according to the deprivation index of each territory. Furthermore, it should arrange population-level interventions at the centre of health care provision. Without these regulatory mechanisms arrangement, the health care widespread commercialization in unregulated health systems tends to prevail and oral diseases prevalence could increase. Comparative analyses of oral healthcare delivery – as well as their performance – are very important to support public health decision-making [61,62]. Trends in the analysed guidelines follow WHO recommendations [2] and are based on the strategies for PHC implementation [8].

A few review studies related to the theme are available in scientific literature. They diverge from the present study in research questions' scope, technical and scientific documents source and adopted methods [12,13]. The reviews are recent, reinforcing interest in this study subject. To date, no synthesis focused on elucidate characteristics of comprehensiveness and intersectoral components among oral health guidelines in primary care had been registered.

In this integrative review, main guidelines published in scientific and grey literature between 2000 and 2016 were gathered, in order to highlight and compare general principles that guide formulation and implementation of the oral health component in primary care policies. Strategies and means to facilitate this component's incorporation, such as oral health care information systems integration with other health information systems and the structuring of transparent systems of accountability, liaison, linkages and partnerships with other health agencies for monitoring, evaluation and ensuring service responsiveness, were not highlighted. The comparison of health systems is complex precisely because of particularities that surround them. In the United Kingdom, the devolution process that began in 1998 enabled each country to refocus its health policy development in accordance with local governments, prompting England to incorporate free choice and competition mechanisms, while Scotland, Northern Ireland and Wales focused on mutuality and partnership. These particularities were not addressed, and the option of studying the United Kingdom as a unit was provided by similarities in the core policies of the four countries, which share most of the NHS guidelines [63]. Furthermore, comparative analyses are necessary to highlight differences and similarities in the subject, and narrative synthesis is a way of elucidating contexts and allowing the reader to be clear about the complexity surrounding the results. The methodological rigor and the explicit description of the steps and procedures adopted sought to minimize the effect of possible biases, enabling this study to serve as a basis for improving the oral health component of PHC policies at local, regional and national levels.

5. Conclusion

More than forty years after the publication of the Alma-Ata Declaration, the oral health integration into PHC policies remains a major challenge. The findings revealed recommendations pertinent to this guideline in the five countries. Formulations in the UK and Brazil suggest that oral health integration into PHC policies is at a more advanced stage in those countries than in Australia, Canada, and New Zealand, where difficulties persist in implementing oral health as part of the health system.

Regarding the guidelines conceptual aspects, greater emphasis is placed on the horizontal dimension of care comprehensiveness through the relationship between dental services and other same-level health care areas. The vertical dimension of care comprehensiveness was seldom described, suggesting predominance of oral healthcare delivery guidelines oriented to increase collaboration with other health fields and little emphasis to integrate oral health at secondary and tertiary care levels. However, the combination of these two dimensions is necessary to the comprehensive care provision according to PHC attributes.

Intersectoral policies and actions oriented towards health promotion and disease prevention are recognized as an effective way to insert oral health into the general health context and other sectors. Water fluoridation is one of the most mentioned strategies because of its potential to reduce inequalities. Actions in cooperation with the education sector are well described, while interaction with other sectors is more complex and receives less attention. The fluoride toothpaste importance is unanimously cited. The common risk factors approach is mentioned as an important concept for guiding and planning health promotion and disease prevention actions.

The oral health guidelines identified in the PHC policies of five selected countries represent an important source of information, and its synthesis formulated using the integrative review method is a significant instrument to support decision-makers, policy-makers and stakeholders.

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Declaration of Competing Interest

The authors declare that they have no competing interests that could have influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.hpopen.2021.100042.

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