

VISION 2030

Delivering Optimal Oral Health for All

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Executive summary

Vision 2030: Delivering Optimal Oral Health for All identifies challenges that will confront dentistry and the oral health community over the next decade and it proposes strategies for how these can be turned into opportunities to improve oral health, reduce oral health inequalities, and contribute to reducing the global burden of oral diseases. Central to these strategies are the integration of oral health in policy initiatives, such as the United Nations (UN) Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC); adapting to societal transformations, such as ageing populations; and shaping an oral health workforce which is fit for purpose. The Vision 2030 report aims to assist the profession in realizing delivery of optimal oral health to all – with no person left behind.

Our vision is that by 2030 oral healthcare will be empowering, evidence-based, integrated and comprehensive. This forward-looking report therefore outlines how the oral health community can tackle actual and anticipated transformational changes and trends in the global healthcare environment and seize opportunities to become productive members of a healthcare team which delivers person-centred care. It makes the case for oral health to be included in Health in All Policies and any ensuing health and healthcare debate.

The report specifically:

1. highlights major global emerging changes to the healthcare enterprise;
2. outlines how these changes will affect oral healthcare over the next decade;
3. presents strategies and solutions pertinent to the oral healthcare profession;
4. supports and complements other major global health and development agendas, including the SDGs; the noncommunicable disease movement; UHC, and global ageing;
5. argues for effective population-level prevention and emphasizes the importance of professional resilience;
6. advocates for the delivery of oral healthcare and oral healthcare professionals as active members of the overall healthcare team; and
7. assists FDI and its member organizations in shaping longer-term advocacy strategies and policies.

The Vision 2030 report is constructed around three pillars, each with a major goal. These pillars are supported by a strategy for education that will create a responsive and resilient profession, with the knowledge and skills to lead systems reforms.

Pillar 1	By 2030, essential oral health services are integrated into healthcare in every country and appropriate quality oral healthcare becomes available, accessible, and affordable for all.
Pillar 2	By 2030, oral and general person-centred healthcare are integrated, leading to more effective prevention and management of oral diseases and improved health and well-being.
Pillar 3	By 2030, oral health professionals will collaborate with a wide range of health workers to deliver sustainable, health-needs-based, and people-centred healthcare.
Education	
By 2030 healthcare professionals will have the knowledge, skills and attributes to contribute appropriately to the effective prevention and management of oral diseases and collaborate across health disciplines to improve health and well-being.	

Education and training in public health will enable healthcare professionals to contribute more effectively to the population-wide prevention of oral disease. It will also enable them to play a central role in dealing with future public health emergencies.

This report also emphasizes the responsibility of individual oral healthcare professionals to maintain an appropriate level of competency throughout their professional lives, and the necessity to shoulder a leadership role within the healthcare community and society more widely. The report is intended to be updated at regular intervals based on local and global requirements, emerging health issues, and the achievement of key performance indicators. It is not intended to be prescriptive, but instead to provide guidance contingent on local needs, conditions, and circumstances.

Introduction

FDI World Dental Federation (FDI) recognizes the fundamental importance of oral health to overall health and well-being. It is a basic right, but one that is enjoyed by all too few. Major inequalities in oral health exist, both within and between countries, and although oral diseases are largely preventable, the global burden of oral disease remains unacceptably high. The FDI *Vision 2030: Delivering Optimal Oral Health for All* (Vision 2030) report confronts this reality and addresses the strategic challenges that the dental profession and the oral health community will face over the next decade. The Vision 2030 report focuses on actual and anticipated transformational changes and trends in the global healthcare environment that will affect our profession, and provides strategies for the inclusion of our profession and oral healthcare professionals as integral members within the emerging person-centred healthcare team. The report proposes ways in which the challenges can be turned into opportunities to improve oral health, reduce oral health inequalities and contribute to reducing the global burden of oral diseases. It considers strategies to integrate the profession in policy initiatives, such as the United Nations (UN) Sustainable Development Goals (SDGs) and universal health coverage (UHC), to adapt to societal transformations, such as ageing populations, and to shape an oral health workforce which is 'fit for purpose'. This report specifically addresses how to deliver optimal oral health to all – with no person left behind.

The Vision 2030 report recognizes that there will be country- and region-specific differences in the oral health challenges that are being faced, as well as differences in health priorities and available resources. Hence, there cannot be a 'one-size-fits-all' approach. It will be for individual countries to interpret the recommendations in this report based on their own circumstances.

The recent COVID-19 pandemic has had a major impact on oral health service delivery by limiting face-to-face contact with patients and the scope of care that can be delivered safely. This has been a powerful reminder of the uncertain world in which we live and an example of why our profession must be adaptable and resilient. This report is intended to guide policy and advocacy efforts for the next decade, so it does not have a specific focus on this pandemic. It does, however, consider what we can learn from this crisis and how the profession should evolve to be prepared for the next major health challenge, whatever that may be.

Our vision is that by 2030, oral healthcare will be empowering, evidence-based, integrated, and comprehensive. This forward-looking report therefore outlines how the oral health community can tackle challenges and seize opportunities to become productive members of a healthcare team which delivers person-centred care. It makes the case for oral health to be included in Health in All Policies and any ensuing health and healthcare debate.

The Vision 2030 report:

1. delineates major global opportunities and challenges facing the oral health profession over the next decade;
2. presents approaches and solutions;
3. addresses issues pertinent to the oral healthcare profession;
4. supports and complements other major global health and development agendas, including the SDGs; the noncommunicable disease (NCD) movement; UHC, and global ageing;
5. argues for effective population-level prevention and emphasizes the importance of professional resilience;
6. advocates for the delivery of oral healthcare and oral healthcare professionals as active members of the overall healthcare team; and
7. assists FDI and its member organizations in shaping longer-term advocacy strategies and policies.

Vision 2030: Delivering Optimal Oral Health for All is constructed around three pillars, each with a major goal. These pillars are supported by a strategy for education that will create a responsive and resilient profession, with the knowledge and skills to lead systems reforms.



Across all the pillars, Vision 2030 emphasizes the responsibility of individual oral healthcare professionals to maintain an appropriate level of competency throughout their professional lives; the necessity of health professionals, our profession and professional organizations to adapt and exhibit resilience in the face of catastrophic events and other challenges; and the necessity to shoulder a leadership role within the healthcare community.

This report is intended to be updated at regular intervals based on local and global requirements, emerging health issues, and achievement of key performance indicators. It is not intended to be prescriptive, but instead to provide guidance contingent on local needs, conditions, and circumstances. To help measure progress towards attaining the goals of Vision 2030, a set of targets and indicators is proposed in *Appendix 1*.

PILLAR 1: Universal coverage for oral health



OVERARCHING GOAL

By 2030, essential oral health services are integrated into healthcare in every country and appropriate quality oral healthcare becomes available, accessible, and affordable for all.

Inception and Vision 2020

From Bismarck to Beveridge, there have been many historical attempts to make healthcare available, affordable, and accessible to all. The Alma Ata Declaration in 1978, raised an awareness for the Universal Health Right which proposed to reduce health inequality, provide financial protection and access to good quality services, health workers, medicines, and technologies to the people.

Building on this concept, and other historical examples, Universal Health Coverage (UHC) was adopted at the World Health Assembly in 2005. It is broadly defined by the World Health Organization (WHO) as “ensuring that all people can use the

promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship.”

UHC has also been included as one of the targets of the Sustainable Development Goals (Goal 3.8) and has been described as “the single most powerful concept that public health has to offer”.

Vision 2020 stressed the importance of improving access to oral healthcare by stating the following:

“Our Vision is that by 2020, inequities with regard to access to oral healthcare will be substantially reduced and the global need and demand for oral healthcare more largely will be met thanks to increased oral health literacy, the development of rational workforce planning, education, training and retention strategies, and an improved collaboration between members of the health workforce on issues pertaining to oral health promotion, disease prevention and treatment.”

However, in the past decade it has increasingly been realized that inequalities in oral health can be mitigated, not only by providing access but also by ensuring high-quality oral health services are available when required and in a way that does not impose a huge financial burden on the user of these services.

Background

Providing high-quality, optimal and affordable promotive, preventive, curative, palliative and rehabilitative services to all has become the most sought-after global health aspiration.

UHC provides the health-system platform for concerted action against a large array of health disorders. As various countries across the globe have initiated steps to design or reshape their health and development programmes for UHC, there is a clear need to appropriately position oral health within

them. Oral health must be an integral part of this platform as oral diseases contribute significantly to the overall burden of disease inflicting a society. Oral diseases are both a cause and an effect of poverty and underlying social inequalities. They also have a significant impact on education and employment, and they impede sustainable development by incurring excessive economic losses and limiting nutrition, education, and employment opportunities.

Key challenges

At present, many national health systems are not appropriately configured to provide oral healthcare. As UHC now becomes the stimulus for transforming health systems, oral healthcare must become a prominent part of their design.

Oral health systems across the globe should overcome certain challenges for ensuring the availability of equitable, affordable, and accessible oral health services for all. These challenges include:

1. serious shortages of appropriately trained oral healthcare personnel in certain regions of the world;
2. inadequate outreach to rural and other underserved populations;

3. treatment costs that are too high for many poor and marginalized people;
4. barriers such as inadequate transport and lack of appropriate technologies;
5. isolation of oral health services from the broader health system, especially among low- and middle-income countries; and
6. limited adoption of prevention and oral health promotion.

Figure 1 highlights the key action areas for integrating oral health into UHC benefit packages: the Essential E's.

Essential E's for integrating oral health in UHC benefit packages

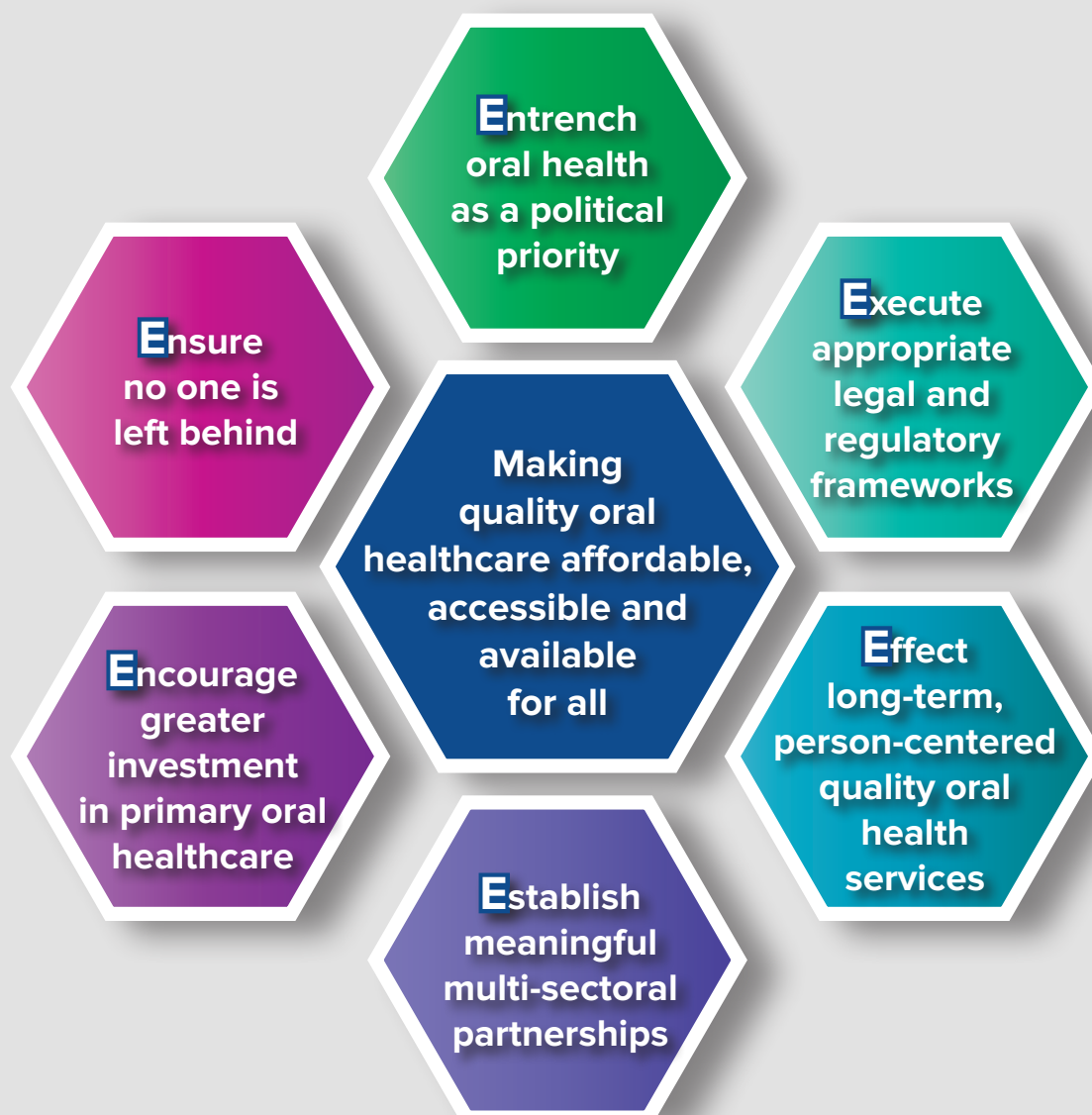


Figure 1. Key action areas for integrating oral health in UHC benefit packages: the Essential E's

Supporting approaches

Clinical practice

- Develop and deliver disease-specific care pathways and management guidelines.
- Incorporate and use continuous quality-improvement programmes to deliver high quality, ethically and scientifically sound oral healthcare services.
- Recognize and address the call for accountable regulatory authorities for maintaining standards of care, pricing of services, and developing appropriate oral health technology assessment.

Education and training

- Build capacity of the workforce, particularly at the primary healthcare level to secure service accessibility, affordability, and adequacy.
- Build a strong cadre of other oral health workers (such as dental hygienists) and non-physician healthcare providers (community health workers, nurses, and other allied health professionals) and enable them to deliver adequate oral healthcare within their scope of practice, especially at the primary point of care.

Research and evaluation

- Encourage implementation research for delivering evidence-based oral health interventions and for strengthening health systems delivering these interventions.
- Develop nationally relevant oral health indicators for routine monitoring and evaluation and integrate them into annual surveys.
- Undertake big data research for better resource allocation and for designing robust interventions.
- Perform health economics research to inform policy for financial feasibility of oral health interventions and establish cost effectiveness and affordability of oral health procedures, drugs, and technology.

Technology and innovation

- Encourage local, affordable and sustainable technological solutions (also referred to as “frugal innovation”) for scaling up access to oral health information, such as m-health, e-health, and innovative behaviour change communication tools.
- Improve efficiency of oral healthcare delivery and systems by developing technologies that are effective (both in theory and in practice), safe (easy to use correctly), affordable, acceptable, and sustainable.

Policy and advocacy

- Define and fund a list of ethically and scientifically sound essential oral health services based on national priorities.
- Strengthen population, community (with special attention to the most vulnerable groups) and health-service-based approaches to deliver a range of high-quality services covering oral health promotion, disease prevention, diagnosis, treatment, rehabilitation, and palliation.
- Lobby governments to increase budget funding (based on national priorities/ progressive universalization) for oral healthcare services and prevention programmes especially at the level of primary care (see *Case study 1*).
- Adequately synchronize public and private sectors to achieve cooperative operability by plugging existing gaps in oral healthcare systems.
- Liaise with insurance companies to increase coverage of oral health services and to ensure financial protection against catastrophic out-of-pocket expenditure on oral healthcare.
- Push for the inclusion of oral health indicators in the routine health surveillance exercise of every country, through active advocacy efforts.

Conclusion

Universal oral health coverage is an ambitious concept that requires strong government support with better health financing schemes and management of the oral healthcare workforce, with greater attention to health management and community-based caregivers. Oral health is an integral part of overall health and has a direct impact on people and their lives.

Better oral healthcare facilities support people by giving them a better work output (in terms of education and employment) and prevent people from being pushed into poverty. Early detection of oral diseases has contributed to less expenditure on their treatment. Locally optimal and culturally sensitive oral healthcare services, delivered through an adequately resourced and well-governed health system, hold the potential to address the multifarious oral health challenges, especially if supported by pro-oral-health policies in other sectors.

Apart from intrinsic value for overall health, universal oral health coverage will also have positive externalities for development, gender empowerment and social solidarity. Within the health sector, primary oral healthcare should be accorded the highest importance both because of its ability to provide maximum health benefits to all sections of society and because of its capacity to ensure sustainable oral healthcare expenditure levels.

The basic package of oral healthcare will vary from country to country and region to region depending on the type of oral conditions most prevalent in a particular country, the level of primary healthcare services available and the level of economic development of a country.

In September 2019, the United Nations High-Level Meeting on UHC officially acknowledged oral health as being a part of the UHC agenda. FDI now has a key role to play in ensuring oral health is integrated into UHC strategies and packages at the country level.

Policymakers often hear parallel voices from different advocacy, think tank and research groups and it becomes difficult for them to ascertain on what piece of information they should act. FDI represents the world's national dental associations and specialist groups, and can effectively provide solutions and a road map to national governments on how to strengthen oral health systems and enhance oral healthcare. Partnership with other public health advocacy groups will provide the necessary ammunition and recognition to closely align oral health to general health issues and call for unified action.

To build the basic package of oral health care according to local, national, and regional priorities there must be four essential components, namely:

1. disease prevention and early detection;
2. care close to home, which is affordable and accessible;
3. better oral health outcomes at lower costs; and
4. convergent platforms for oral health awareness.

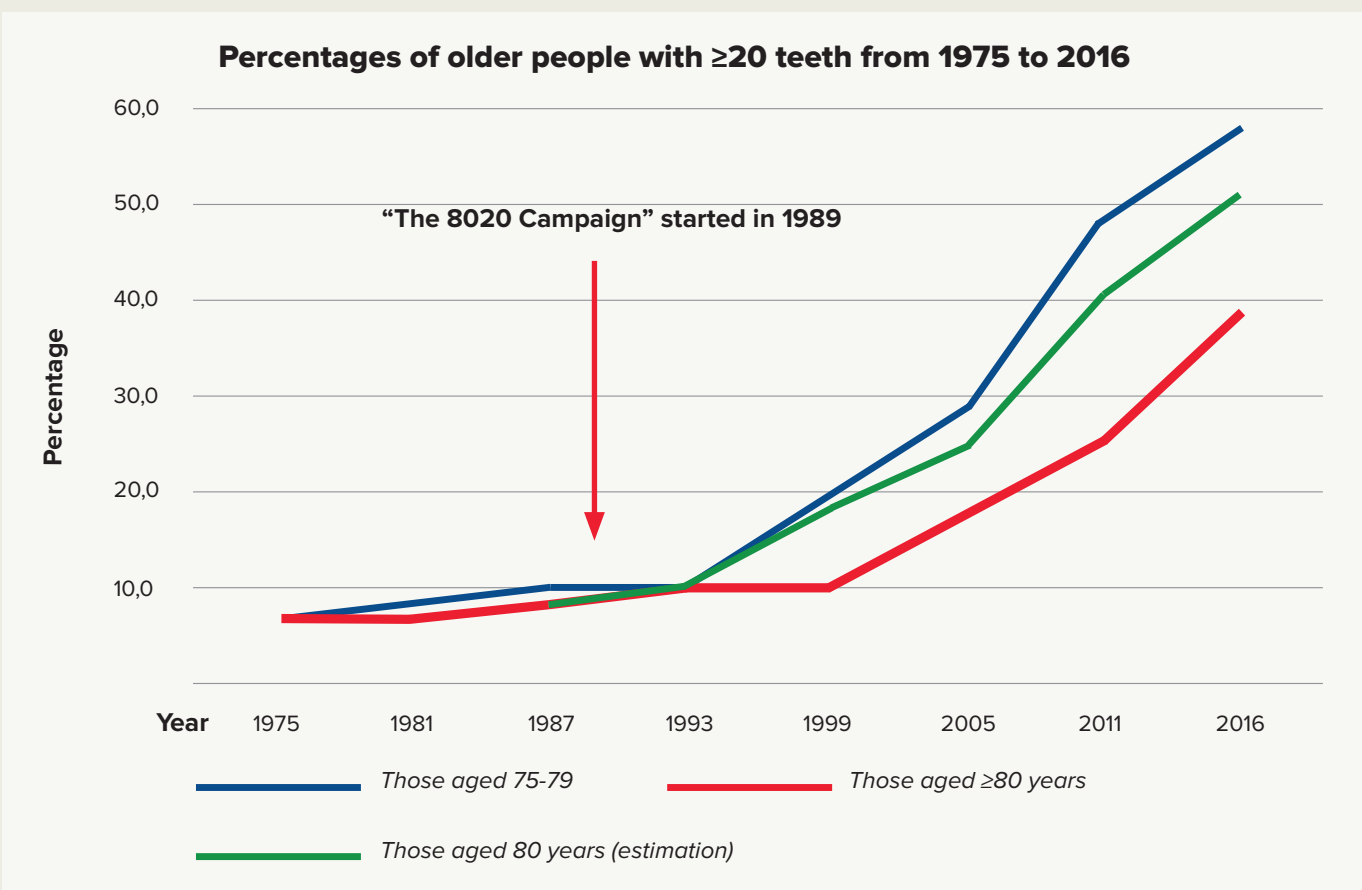
Case study 1 The 8020 oral health campaign in Japan

In 1989, Japan's Ministry of Health and Welfare and the Japan Dental Association launched the "8020 Campaign" to encourage people to keep 20 or more of their own teeth by the time they reached the age of 80 years. At the time, only 7% of people aged 80 and above had 20 or more teeth. The overarching aim of the campaign was to ensure that more than 50% of people over the age of 80 retained 20 or more teeth by the year 2022.

To achieve this goal, the campaign adopted a multisectoral, lifelong approach to preventing tooth loss by engaging multiple sectors and carrying out initiatives that targeted all generations. The Ministry of Health, Labour and Welfare provided subsidies to local governments and dental associations to carry out various oral health initiatives, which included providing check-ups for young children aged 1.5 years and 3 years, expectant mothers, and for targeted age groups including those aged 40, 50, 60 and 70 years, as well as those aged 75 years and over. The Ministry of Education, Culture, Sports, Science and Technology provided the school-based

initiatives, which included providing annual check-ups by a school dentist to children aged between 6 and 18 years and recommending school-based fluoride mouth-rinsing programmes for children and adolescents aged between 4 and 14 years.

In 2000, the 8020 Promotion Foundation was established, primarily to conduct research related to the campaign. The Ministry of Health, Labour and Welfare carried out a national survey of dental diseases in 2016 and found that 51% of 80-year-olds in Japan had more than 20 teeth, which indicated that the campaign had reached its goal six years before its target year of 2022. Further, the prevalence of tooth decay among children also decreased as a result of the campaign activities that addressed oral health across younger age groups. Finally, research that came out of the 8020 Promotion Foundation provided the impetus for the "Act on the Promotion of Dental and Oral Health" in 2011, which further reinforces the importance of oral health promotion.



By 2016, more than half of the 80-year-olds in Japan had more than 20 teeth. Source: Survey of Dental Disease in Japan (2016) (Modified). Modified means the graph for those aged 80 years was created and is an estimation.

PILLAR 2: Integrating oral health into the general health and development agenda



OVERARCHING GOAL

By 2030, oral and general person-centred healthcare are integrated, leading to more effective prevention and management of oral diseases and improved health and well-being.

Inception and Vision 2020

The Vision 2020 document emphasized the importance of integrating oral health into the mainstream general health agenda by stating the following:

“We believe that the time is now right for developing a new model for oral healthcare, which considers oral health as an integral part of general health and addresses the needs and demands of the public and the right of each individual to good oral health. We believe that, by shifting the focus of our model from (i) a traditionally curative, mostly pathogenic model to a more salutogenic approach, which concentrates on prevention and promotion of good oral health and (ii) from a rather exclusive to a more inclusive approach, which takes into consideration all the stakeholders who can participate in improving the oral health of the public, we will be able to position our profession at the forefront of a global movement towards optimized health through good oral health”.

Background

Despite the best efforts of the dental profession, the global burden of untreated oral disease remains unacceptably high and is accompanied by marked inequalities both within and between countries. Advances in dental care have resulted in major improvements in oral health, but these have mainly occurred in high-income countries and, even then, have not benefitted the entire population. The poor in society suffer a disproportionately high level of disease; effective population-wide disease prevention remains to be implemented; and affordable, appropriate care is not accessible to all.

The failure of most approaches to improve oral health and reduce inequalities has been attributed to a reliance on measures that focus on factors such as lifestyle and behavioural influences, rather than addressing the key root causes. This demands a radical rethink in our approach, with a much greater emphasis on effective prevention at the population level. To this end, it is increasingly being recognized that oral diseases share risk factors and social determinants in common with the other major noncommunicable diseases (NCDs) (*Figure 2*). This principle was articulated in the Political Declaration of the 2011 United Nations (UN) High-Level Meeting on the prevention and control of NCDs, where it was stated that “renal, oral and eye diseases pose a major health burden for many countries and that these diseases share common risk factors (CRFs) and can benefit from common responses to noncommunicable diseases”.

The important principle set out in the 2011 UN Political Declaration on NCDs provides strong

justification for closer integration of oral health into the general health agenda. It has already resulted in a closer alignment of oral health with the wider agenda addressing the prevention of NCDs, which are the major cause of death and disability worldwide. Accordingly, FDI is a member of the NCD Alliance, which is committed to making NCD prevention and control a priority everywhere.

It is unrealistic to expect dentists and other oral healthcare professionals, acting in isolation, to be effective in making the case for effective action on the social and commercial determinants of health, not least because these major determinants of chronic disease lie outside the health sector. However, closer integration of oral health into the mainstream general health agenda will create the opportunity not only to reduce the burden of oral diseases worldwide through more effective prevention, but also for oral healthcare professionals to participate more centrally in healthcare to the benefit of society as a whole. This strategy is in line with the horizontal approach that addresses all NCDs simultaneously.

It is widely recognized that physicians and related health professionals have a role in promoting good health and health equity, but oral health professionals are also in a position to engage actively by promoting oral health equity, both for their patients and the wider community. Primary care is usually the first point of contact with healthcare services and is the setting in which most care – both general and oral – is provided. Oral health teams, collaborating with primary care teams, have

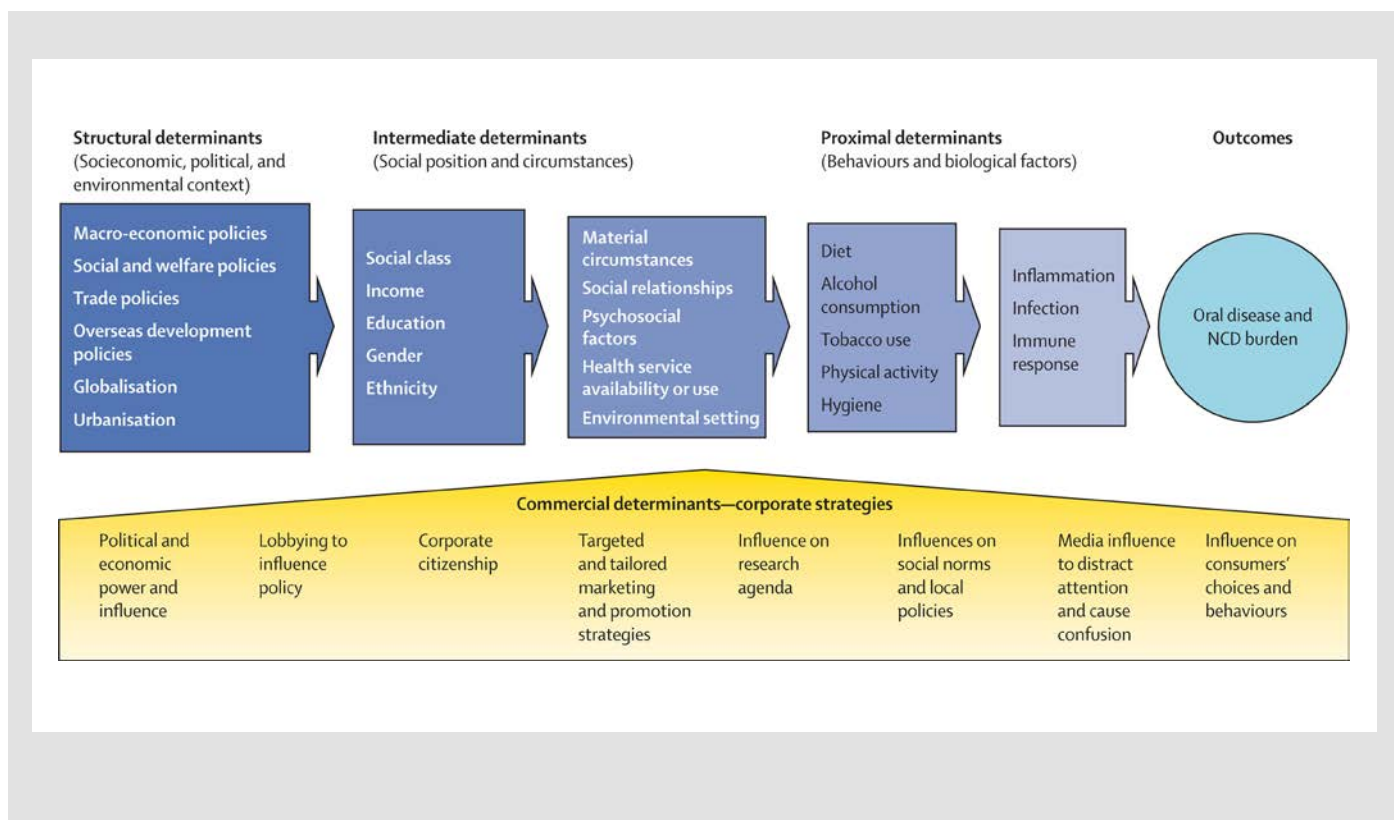


Figure 2. Social and commercial determinants. Reproduced with permission from *The Lancet*. Source: Peres MA, Macpherson LM, Weyant R et al., Oral diseases: a global public health challenge. *Lancet*. 2019;394:249260.

the largely unexploited potential to be important advocates, enablers, and mediators for oral health. Because the risk factors for oral and general health are the same, such activities will also promote good general health. If oral healthcare is to be properly integrated with healthcare in general, it is also essential that all members of the oral healthcare team understand the importance of the social determinants of oral health and integrate their activities with other groups (see *Case study 2*).

The World Health Organization’s (WHO) Constitution asserts that enjoyment of the highest attainable standard of health is one of the fundamental rights

Key challenges

All countries should be encouraged to develop oral health action plans that are integrated into strategies to address the burden of untreated NCDs, of which oral diseases comprise a major fraction. Although individual countries have their own health challenges, economic circumstances and cultural differences, integration of oral health into primary care can have significant benefits in terms of disease prevention, overall health improvement and the affordability of healthcare. This goal will not be achieved if oral healthcare is seen as separate from the rest of healthcare.

of every human being. In the Adelaide Statement the WHO advocated for a Health in all Policies (HiAP) approach as an important strategy to advance this human right. The evidence that oral diseases share common risk factors and determinants with other NCDs justifies the inclusion of oral health in a HiAP approach; that is to say an Oral Health in All Policies (OHiAP) approach. This would lead to new intersectoral partnerships and would shift the predominant focus of oral health away from technical interventions towards an approach based on social justice and consideration of the social determinants of health.

Thus FDI, working in partnership with WHO and the International Association for Dental Research (IADR), has a major responsibility to make the case for the reintegration of oral healthcare services into all health systems – the OHiAP approach outlined above. This will require close cooperation not only within the dental profession, but also the forging of collaborative working relationships with bodies responsible for overall health, such as the NCD Alliance and the World Health Professions Alliance.

In making the case for the integration of oral health in the general health agenda, the following points are important:

1. Co-morbidities and multi-morbidities: Oral diseases do not occur in isolation; they commonly cluster with the other NCDs, including cardiovascular disease, metabolic syndrome and type 2 diabetes, which share the same social, lifestyle and commercial determinants. In the WHO guidance on the health-related effects of dietary sugars, it was oral health and dental caries research that ultimately provided the evidence that underpinned the WHO recommendation on the consumption of free sugars (see *Case study 3*).

Tobacco smoking is a highly prevalent NCD risk factor globally, and its specific implication in oral cancer and periodontal disease means that the oral healthcare team has a key role in promoting tobacco cessation programmes and delivering them to patients. An explicit objective of tobacco cessation programmes is the integration of oral health into the overall healthcare programme. An excellent example of this approach to health promotion is the government-promoted programme in India (see *Case study 4*).

When introducing community-based and patient-centred disease management strategies, it is more cost-effective to address oral and systemic diseases together. This is in line with the horizontal approach outlined earlier that addresses all NCDs at the same time and it is a core principal of the NCD Alliance (*Figure 3*). This approach is important from a health systems perspective, particularly in resource-constrained settings.

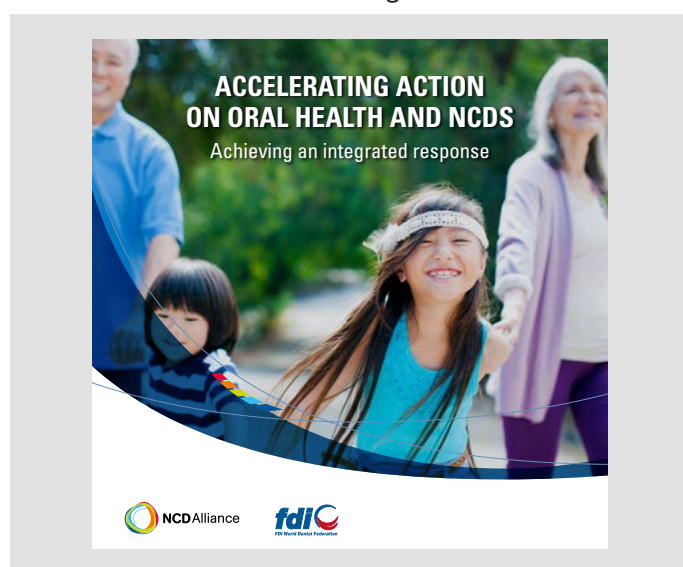


Figure 3. Joint FDI-NCD Alliance policy brief highlighting associations between oral diseases and NCDs, and providing recommendations for their prevention and control. <https://www.fdiworlddental.org/resources/brochures/accelerating-action-on-oral-health-and-ncds>

2. “The Canary in the Coalmine”: It is apparent that oral signs and symptoms, such as ulcers, white patches, red patches, swellings, abnormal pigmentation and oral pain, loss of sensation, abnormal orofacial movement, halitosis and dry mouth, may be early manifestations of chronic diseases in other organs. In this context, it is important to acknowledge the bidirectional relationship between periodontal disease and type 2 diabetes; the relationship between oral and cardiovascular disease, and to recognize the significance of oral disease as an ‘early warning’ of incipient systemic disease. There is thus a strong case for oral health professionals to work collaboratively with their medical colleagues in the context of screening and early detection of chronic diseases such as diabetes and cardiovascular disease.

Oral health professionals have a role in the early detection of systemic disease. Evidence is also growing that a better control of oral disease may improve systemic disease outcomes. Thus, all health professionals need to be aware of the contribution that good oral health makes to general health and the need for closer integration and cooperation between all health professionals, including oral health professionals.

3. Health surveillance role: The dental profession has unique access to the “healthy” population and thus has an important health surveillance role. This is an important justification for regular dental check-ups; the more successful the dental profession is in reaching everyone, especially the disadvantaged and marginalized, the more effective this health surveillance role will be.

The prevalence of all NCDs, including oral diseases, tends to increase across the life course, due to the cumulative effect of exposure to the social and commercial determinants of health. Severe oral disease in childhood, particularly early childhood dental caries, is a predictor of poor health outcomes later in life, with predisposition to the development of NCDs such as cardiovascular disease, diabetes, and respiratory disease. Thus, early detection within this particularly at-risk group and appropriate health interventions have the potential to reduce mortality and morbidity later in life and to improve health outcomes in general.

4. Integration for healthcare systems resilience in response to unforeseen challenges: Major disasters and other unforeseen events, of which the global COVID-19 pandemic caused by the SARS-CoV-2 is but one example, are by their nature unpredictable. They cause sudden, extreme, and different demands on healthcare systems and may disrupt the delivery of urgent care unrelated to the event itself. At times of crisis,

dentists and other oral healthcare professionals have—or can readily acquire—the knowledge and skills to be redeployed to other roles within health systems, as members of the team alongside other health professionals. Through this very direct process of integration they can contribute to the resilience of health systems, by releasing expert clinicians to front-line clinical duties (see *Case study 5*).

Supporting approaches

Clinical practice

- Raise patient awareness about general health issues such as diabetes, obesity, hypertension and other chronic conditions.
- Become involved in screening for a range of other medical conditions before they manifest as medical problems. Early detection of systemic disorders due to oral manifestations and the use of saliva or other oral tissues as biomarkers are now well established. Establishing closer links with medical colleagues would create a valuable forum for early intervention and significant cost reduction, thus leading to more affordable healthcare.
- Address sedentary lifestyles and obesity, particularly in children and adolescents, by not only advocating sport and exercise, but also by providing access to safer sport and exercise via provision of mouthguards to prevent trauma and concussion in contact sports.
- Provide tobacco cessation support.
- Reinforce primary prevention and ensure that individuals are empowered to take responsibility for their own health, particularly through motivational interviewing (health coaching).

Education and training

- Involve the educational sector through dental/medical/nursing schools and the social sciences at universities across the world. Undergraduate dental curricula should include the integration of oral health in the general health agenda, with reduced emphasis on intervention and a greater focus on social determinants, the CRF approach, primary prevention and patient-centred care at its core. Modern medical and dental curricula should aim to develop skills in inter-professional communication, evidence synthesis, critical thinking and life-long learning.
- Enhance intra- and inter-professional education and practice, using the dental office as a portal into the healthcare system. This would create the opportunity for: medical assessments/health screening in dental offices; opportunistic immunizations; risk assessments for systemic diseases, with referral as appropriate; and guidance on healthy lifestyle choices, including nutrition. It is already part of the remit of dentists to provide dietary advice with respect to prevention of dental caries. This intervention could be expanded to advice on healthy eating choices, tailoring dietary advice to individual risk and circumstances, and according to any dietary restrictions and cultural aspects of diet and nutrition.
- Promote oral health literacy among patients and all healthcare professionals, taking advantage of social media and smart phone technology and other appropriate media.
- Encourage dental students to attend conferences beyond the confines of dentistry, to ensure they are aware of broader health issues and trends.

Research and evaluation

- Evaluate the health economics of integrated care systems to support the revision of oral health remuneration systems that facilitate UHC, and place greater emphasis on prevention rather than intervention. Liaise with providers, industry, and commercial partners, as well as insurance companies to improve access to vulnerable groups.
- Collect data on health parameters, such as glycated haemoglobin (HbA1C), blood pressure, weight, and body mass index in dental clinic settings, including research settings.
- Undertake research into the health economics of primary prevention to test the hypothesis that ‘while dental intervention is expensive, oral health may be cheap’.

Technology and innovation

- Emphasize the value of local, affordable and sustainable technological solutions, particularly in areas such as service redesign where there may be opportunities to innovate and improve both accessibility and affordability.
- Encourage industry partners to provide support for the integration of emerging technologies in geographic areas of need.
- Facilitate the use of integrated practice management software systems and electronic patient records.
- Foster the use of diagnostic codes.

Policy and advocacy

- Enhance and reinforce collaborative structures between FDI, IADR and WHO in dealing with major global health issues so that unity and synergy will help reinforce the key messages.
- Work with other health professionals to design strategies to integrate health and social care at all levels:
 - population-wide policy measures that seek to enhance awareness of risk factors for NCDs including oral health conditions (via legislation, regulation and information);
 - community-based programmes carried out in schools, workplaces and communities to promote oral and general health and overall well-being;
 - person-centred healthcare services using tools such as health coaching; services capable of providing individualized care to people with (often comorbid) oral and general health conditions.
- Seek opportunities to align the dental profession with the UN Sustainable Development Goals (SDGs) via an interdisciplinary and trans-sectoral approach commencing with SDG3 for health and well-being, SDG10 for inequalities and SDG17 to enhance connectivity with other stakeholders. Also consider whether there are ways where oral health may be implicated in a range of other SDGs.
- Integrate strategies to phase down dental amalgam as part of the policy of prevention and control of NCDs.
- Communicate ‘our stories’ outside of dentistry and outside of health, for example with politicians and policymakers in countries all over the world. Strong arguments for integrating oral health with general health merit widespread dissemination to a range of stakeholders (see *below*).
- Adopt a strong action plan to reduce dietary sugar intake and address sugar as a commercial determinant of health.
- Reduce sugar consumption through promotion of effective taxation on sugar-sweetened beverages and other sugary products (WHO best buys).
- Encourage and support tobacco cessation programmes delivered by the oral healthcare team.
- Encourage the development of patient advocacy groups and initiate collaborations with those groups. Identify spokespersons for oral health, such as celebrities.
- Broaden the scope of oral health advocacy by not exclusively addressing only the most common dental and oral diseases, such as dental caries and periodontal disease. By ignoring the less common – but often more devastating – oral conditions (such as oral cancer), an opportunity to demonstrate that within the field of oral health there are serious inequities, particularly surrounding poverty and access to affordable care, is lost. For example, cancrum oris/noma only presents in the most extremely impoverished communities and, in large parts of rural India, China, Indonesia and Sub-Saharan Africa, only a small percentage of infants born with orofacial clefts survive the first few weeks of life.
- Implement UHC. One of the most effective strategies for addressing inequities and reinforcing justice and fairness with respect to healthcare is to achieve UHC with equality of access, standards and affordability. This contributes to achieving of SDG 10 (reducing inequalities), SDG 16 (social justice) and SDG 17 (working in partnerships).

Monitoring and tracking

- Monitor incidence, mortality and morbidity associated with various oral conditions.

Conclusion

Faced with the overwhelming challenge presented by the increase in the burden of NCDs worldwide, it is imperative that there is a major refocusing of global health systems on prevention. This will require effective implementation of integrated strategies that address the shared social and commercial determinants of health. Untreated oral disease accounts for a considerable fraction of the NCD burden and it is imperative that oral healthcare services are integrated into healthcare systems worldwide if a reduction in this burden is to be achieved. In addition, all health professionals

will need to have much greater awareness of the importance of oral health to overall health and well-being and the role that they, as well as oral health professionals, have in achieving this for the populations they serve. Achieving this vision will require much more effective advocacy on the part of oral health professionals for the importance of good oral health and emphasizing the role that health professionals and society at large have for achieving and maintaining this.

Case study 2 Qualis Health/Comagine

Work done by Comagine Health, the National Interdisciplinary Initiative on Oral Health (NIIOH), Delta Dental of Washington and Kaiser Permanente has defined key features of a medical-dental collaborative approach to oral health that is applicable whether the medical and dental practices are fully integrated into the same team, co-located in a common facility, or working independently at separate sites.

Using this approach, primary care teams use the Oral Health Delivery Framework to ask about and look for oral disease, and to assess risk for oral disease. They act to reduce risk by offering anticipatory guidance on diet and oral hygiene, by applying fluoride varnish, making medication changes to protect salivary function, and, when indicated, by making structured referrals or handoffs to the dental team. Dental care teams arrange with their medical colleagues to have access to each patient’s medical information, including a problem list and medication/allergy lists in preparation for a dental visit.

When the patient is in the dental clinic, dental teams use community registries and remote access to the patient’s medical record to identify any preventive or chronic illness care gaps. In addition to addressing the patient’s dental needs, dental teams follow standard protocols established in referral agreements with primary care to close care gaps by giving immunizations, ordering tests and giving advice. Dentists complete referrals by sending consult reports back to referring clinicians. Information exchange options include an array of technologies available to the medical and dental teams. Data from medical and dental practices are merged to produce analytic population health reports documenting the prevalence and severity of oral disease in the shared population, and to measure the impact of integrated interventions designed to improve population oral health.

Primary Care Practice	Information Exchange	Dental Practice
<ol style="list-style-type: none"> Care team uses Ask, Look, Decide, Act framework for routine patient care. Care team provides preventive and behavioural oral health interventions. If indicated, an order is placed for referral or handoff. Patient leaves with scheduled dental appointment. Referral order is processed and sent to dental clinic with referral tracking. If patient doesn’t keep the appointment, primary care is notified and contacts the patient. Consultation report is received in EMR and routed to referring clinician. 	<p>Potential technologies:</p> <ul style="list-style-type: none"> Telephone SMS Remote chart access Shared electronic record State/regional registry HL-7 C-CDA (Health Level Seven International Consolidated Clinical Document Architecture) 	<ol style="list-style-type: none"> Dental practice schedules patient for dental appointment. Dental office obtains essential clinical data set from primary care. When patient arrives at dental clinic primary care is notified for referral tracking. Dental team views preventive/ chronic illness care gaps using multiple data sources. Dental team addresses dental issues and documents disease severity as structured data. Dental team addresses preventive/ chronic illness care gaps by protocol. Dental practice sends consultation report to primary care practice.

Case study 3 Sugar policies in New Zealand: removing sugary drinks from hospitals and schools

Sugary drinks are the leading source of sugar intake for children in New Zealand, and are a major risk factor for tooth decay, obesity and type 2 diabetes. The New Zealand Dental Association has played a key role in harnessing the attention of dental professionals and the public to support action against the sugary drink industry. Awareness of the dangers of sugary drinks has been greatly enhanced by these advocacy efforts.

In 2014, Nelson Hospital was the first hospital in New Zealand (and the world) to instigate a sugar-sweetened beverage (SSB) free policy noting that selling sugary drinks on its premises was inappropriate. Successful advocacy and leadership had a domino effect and within 18 months, all hospitals in New Zealand had a similar policy in place. A significant number of hospitals have also adopted a water-only policy.

Advocates also approached the local mayor and city council of Nelson who also instigated a SSB-free policy. Again, leadership, this time by the mayor, was key for the Nelson city council to be the first to adopt such a policy. Many other city councils across New Zealand followed suit.

Following this “settings” model the principals of local schools initiated a water-only policy.



Again, leadership in one setting provided a positive role model for other schools. The Ministry of Education was encouraged to show leadership, by urging schools throughout New Zealand to adopt a water-only policy.

In line with this successful advocacy approach, one of the major supermarket chains adopted a policy to limit the sale of energy drinks to youth under 16 years of age and to provide sugary-drink-free checkout aisles.

Advocacy works by offering examples of best practice by scaling up actions from the local to the national level. Challenging the status quo is key to success.

Case study 4 Tobacco-cessation programme in India

In India, the Ministry of Health and Family Welfare, in collaboration with the Dental Council of India and WHO, has issued guidelines to all 310 dental colleges across the country to establish tobacco-cessation centres. This programme also includes tobacco-cessation counselling as a compulsory educational module in the undergraduate curriculum. This is a prime example of synergy between the national tobacco control programme, and the national oral health programme in India, which fed into an overall health plan for prevention of NCDs.



Case study 5 Resilience in oral healthcare: Dr Swati Nehete



“I am a senior clinical lecturer in restorative dentistry at Queen Mary University of London, and this is my experience of crisis redeployment during the Mumbai bomb blasts in 1993 and

the COVID-19 pandemic of 2020. Both events made demands on my personal resources and resilience.

In March 1993, clashes between two religious extremist factions in Mumbai, India, resulted in 12 serial bomb explosions across the city. These caused 257 fatalities and 1,400 innocent civilians were injured. I was a dental student at the time, and I responded to the call for volunteers because my undergraduate dental education had equipped me with the transferable skills to undertake suturing of wounds and the provision of first aid for the injured. It is undeniable that this was a harrowing experience, but it left me with an indelible sense of purpose. It impressed upon me the importance of having transferable clinical skills if ever I was to be called on in similar circumstances in the future.

In early 2020, the COVID-19 pandemic stretched the resources of the UK National Health Service to its limits. Non-essential services and elective activities were suspended, so that doctors, nurses and other front-line medical staff could be deployed to provide critical care for COVID patients. In response to a call for volunteers to support this transfer of medical personnel to intensive care wards, I stepped up to offer my services and was redeployed from the dental school to the maternity unit. There, I received the appropriate training to carry out my duties in the Unit, which included phlebotomy and venepuncture, reviewing blood results, ward skills, prescription writing, and assisting during labour. On reflection, my previous experience gained during maxillofacial surgery training posts was invaluable in helping me to become a functioning member of the maternity unit team.

The Mumbai bombings and the COVID-19 pandemic both posed sudden, unexpected and major challenges for the health system and all the individuals affected. However, my experience has taught me that, as oral healthcare professionals, we have a role to play in supporting the response of our health systems. We are uniquely placed to be a force for good in these difficult times, drawing on our resilience and endurance and using the transferable skills provided by our respective educational backgrounds.”

PILLAR 3: Building a resilient oral health workforce for sustainable development



OVERARCHING GOAL

By 2030, oral health professionals will collaborate with a wide range of health workers to deliver sustainable, health-needs-based, and people-centered healthcare.

Inception and Vision 2020

In the Vision 2020 report, the oral health workforce was briefly addressed but no particular strategies to address the challenges were put forth.

“Our Vision is that by 2020, inequities with regard to access to oral healthcare will be substantially reduced and the global need and demand for oral healthcare more largely met thanks to the public’s increased oral health literacy, the development of rational workforce planning, education, training and retention strategies, and an improved collaboration between members of the health workforce on issues pertaining to oral health promotion, disease prevention and treatment.”

Ten years later, epidemiological and demographic transitions, changing macro-economic conditions, as well as rapidly increasing medical-technical innovations continue to impose challenges for planning the future oral health workforce.

Improving oral health literacy in both high- and middle-income countries (HMICs) may be one driver of overall improvements in incidence of dental caries and periodontal diseases. While population ageing gives rise to some changes in oral health morbidity patterns in high-income countries, economic growth and associated changes in consumption patterns (like sugar consumption) give rise to concerns about potentially increasing levels of caries in low- and middle-income countries (LMIC).

In addition, to harvest the full potential of efficiency gains, the development and implementation of new treatment technologies require good alignment with sensible workforce planning strategies.

Since the release of the Vision 2020 report, environmental sustainability has become an increasingly relevant issue for dentistry. The imperative of reducing waste of resources, including

waste of human resources, time, equipment, and dental materials implies substantial challenges that the dental profession will need to address. But this also opens windows of opportunity for the dental profession to demonstrate its commitment, capability, and competence to embrace sustainable development.

Not least, the United Nations Environment Programme’s (UNEP) Minamata Convention on Mercury requires a phase down in the use of amalgam and best practice management of amalgam waste and outlines nine provisions. FDI fully supports the Minamata Convention on Mercury, and countries are encouraged to take more than the two required measures in accordance with Annex A, Part II, of the Convention to phase down the use of dental amalgam.

The Minamata Convention presents a unique opportunity for the profession to highlight the importance of the primary prevention of dental caries as being the optimum strategy to phase down dental amalgam.

Background

The World Health Organization’s (WHO) global strategy on human resources for health includes an objective to align investment in human resources for health with the current and future needs of the population. To date, however, the planning of human resources for oral health has been limited to simplistic target dentist-population ratios or constant services-population ratios and has not been taking thorough account of, the levels of and changes in, population needs.

With 69% of the world’s dentists serving 27% of the global population, there are risks of simultaneous over- and undersupply of oral healthcare; even within similarly prosperous Organisation for Economic Co-operation and Development (OECD) countries,

there are large variations in dentist-to-population ratios. Where resources are scarce, careful choices on resource use are needed to ensure access to quality oral healthcare for everyone. This will include sufficient numbers of healthcare professionals who are competent in delivering oral health interventions, the availability of treatment time, and access to affordable, safe and effective dental materials.

The global migration of health personnel, including dentists, is also a long-standing phenomenon, as health personnel seek better salaries and conditions in other countries. In many cases they are actively recruited by more wealthy nations, and, consequently, the health infrastructures in the migrants’ own countries are liable to be seriously

weakened. Having a well-trained workforce and having 'the right staff in the right place' are therefore key. There is a lack of integrated data on dentist migration and a lack of shared understanding of the interrelatedness of workforce migration, needs and planning, which must be addressed so that appropriate strategies can be developed.

Oral healthcare delivery is shaped by continuing medical-technological innovations, tendencies towards more personalized care processes, and changing disease patterns due to demographic as well as epidemiological transitions. New treatment approaches have increased productivity in healthcare delivery. Therefore, dentists' time can

be partially freed up for activities that could further improve people's health and well-being. On the other hand, high-tech innovations require a lot of new knowledge, and investment, and they might not always contribute to reducing social inequalities in oral health and care within and across countries. In order to harvest best-possible value add to society, resource and workforce planning needs to be responsive and adaptive to technological innovations and individual preferences while also taking into account epidemiological and demographic changes and mobility of both the population and the workforce.

Key challenges

The oral health profession will face a number of key challenges in the coming decades.

Key challenges facing the oral health profession that can already be identified:

- 1. At a macro level**, most countries across the globe have struggled to successfully develop and implement resilient oral healthcare resources and workforce planning models. Challenges include the lack of reliable data on people's oral health needs and, consequently, limited insights into the usefulness of various dental care systems approaches to address those needs. Of those countries that do engage in model-based workforce planning, the majority have adopted supply-based approaches that do not explicitly account for the ever-changing health needs of the population.
- 2. At a practice level**, many new challenges arise. Issues such as working conditions, wages, individual-versus-group practices, working hours, work-life balance, burn-out issues, corporate and commercial determinants of health, and employment rather than practice-ownership, all co-determine if the workforce remains or leaves the profession.
- 3. Emerging technologies** that may enhance patient care by equipping providers with better restorative materials and enhanced treatment options, but which may be prohibitively expensive and therefore not globally accessible to all providers and patients, represent yet another challenge.

To overcome resistance to new models of training and education a strong partnership between clinicians and educators should be developed to shepherd through changes.

In response to these and other yet unforeseen challenges, in 2030 the oral health profession will:

- **Deliver people-centred care** that is tailored to the needs of the people and is provided in partnership with them. This partnership is built on respect, engagement, dignity, and compassion. Regulations within health or insurance systems should facilitate and not limit this partnership. Shared decision-making should be the norm.
- **Be recognized as a valuable member of the healthcare team** as oral health is an essential part of general health and shares the same risk factors. Oral health professionals can add expertise on how to make prevention a success.
- **Participate in intra- and inter-professional collaborations.** Dentists are the front-line medical professionals in the prevention, early detection, and treatment of oral and systemic diseases. They should therefore play a leadership role within the oral health profession and in relation to other health professions to improve oral health and thereby contribute to the improvement of general health and quality of life for all.
- **Be engaged in a continuous learning and improvement path.** This requires expenditure of resources, e.g. intellectual, educational, research, financial and time, and shall result in better and more cost-effective health outcomes for patients and health systems.
- **Be resilient.** At the level of the profession, it is necessary to facilitate the development of new models of workforce planning, quality improvement, training and education through a strong partnership between clinicians and educators to facilitate timely and efficient knowledge transfer for evidence-based practice. At the individual level, dentists face intense demands daily. Their daily patient list may include young children, the elderly on a range of medications with implications for treatment, the anxious, the drug addicted, the disabled, and the financially disadvantaged. Every patient's mouth is a potentially infectious environment and puts the dentist at high risk of infection. The dentist also has many health regulations to adhere to, constant professional reading to keep up with, new technologies to learn, and significant financial obligations (paying student debt and/or setting up and maintaining a practice). The dentist may also be an employer who has to deal with workplace laws. To achieve resilience in this setting the dentist will need to develop a good work-life balance to prevent burn out.
- **Be morally accountable.** Oral healthcare does not happen in a vacuum, and social as well as other changes directly affect oral healthcare practices and practitioners. All oral healthcare professionals must understand their responsibilities to society and must provide moral leadership.
- **Be socially accountable.** Dentists are in many cases stakeholders not only for their patients but also for the health system they are working in. Dentists also have to deliver special care for their most vulnerable patients and patients with special needs.
- **Be equipped to overcome the many challenges he/she may be faced with.** Intellectually, emotionally, but also materially, dentists must be equipped in such a way that they can ensure quality care for their patients during their daily work, including in critical times. This is not only an individual task but must also be backed by national health systems.
- **Participate actively in mentoring schemes.** Mentoring and coaching schemes are more important than ever, given rapidly evolving societal changes (including demography, epidemiology, and technological innovation). A 'positive error' culture, open communication, transparency, and professionalism should be embraced. Continuous professional development through active participation in (self-)reflective learning is essential, including giving and receiving meaningful feedback about personal and professional development to/from colleagues is essential.
- **Advocate for oral health plans for all.** Oral healthcare workers will take every opportunity to advocate for lifelong oral health plans not just for their patients but also for those who are not visiting a dentist regularly. This can be achieved at a political level, a national dental association level, a school and kindergarten level, and through targeted public campaigns.
- **Communicate well with peers and patients.** Clear communication with peers and patients about treatments will ensure expectations are managed, and patient compliance will likely be higher.

Supporting approaches

Clinical practice

- Embrace professionalism: continuous (self-)reflection by the dental profession about quality of oral healthcare and societal responsibilities both within and beyond dentistry and continuous adjustment of actions towards societal responsibilities, e.g. Minamata Convention on Mercury, waste management, use of plastics, universal health coverage, sugar consumption, smoking, inter-professional education etc.
- Promote and implement people-centred, integrated approaches to care.
- Supervise and train: foster flexibility in who does what, including remote supervision.
- Promote the use of best environmental practices to reduce releases of mercury and mercury compounds to water and land (Minamata Convention, Annex A, Part II).
- Include best practices for the profession in reducing disposable items within dental clinics and proper disposal of waste generated from clinical practice.
- Adhere to all ISO standards which are relevant for oral healthcare.

Education and training *(see also: Enabling a responsive and resilient profession: the case for educational reform)*

- Demonstrate a lifelong commitment to excellence in practice through continuous education, evaluating evidence, and contributing to scholarship.
- Provide continuous education and training for existing oral healthcare faculty.
- Deliver better education to colleagues from other professions through inter- and intra-professional education and collaborative practice.

Research and evaluation

- Increase transparency:
 - monitoring of oral health epidemiology;
 - defining quality of oral healthcare and consenting quality measures;
 - continuous updating of the evidence base on the effectiveness and efficiency of various dental care delivery approaches, e.g. “skill mix“, using the Human Resources for Health Action Framework as illustrated in *Figure 4*).

Technology and innovation

- Foster quality improvement through the use of electronic feedback systems such as dashboard systems for Quality Improvement Groups.
- Embed technology into workforce planning, as it may affect productivity.

Policy and advocacy

- Adopt a framework for oral-health-needs-based resource and workforce planning *(see Case study 6)*.
- Incentivize disease prevention and quality dental care through value-based payment elements.
- Planning based on health needs rather than demands.
- Foster people-centred care by optimizing the health workforce and enable health workers from all professions to work to their full scope of practice in the areas for which they are educated, authorized and competent to perform.
- Develop a country-wide emergency plan, with governments to ensure dental supplies are always available to meet population health needs.
- Develop government policy and clear guidance on antibiotic prescribing coupled with effective surveillance and more studies on antibiotic stewardship.

Monitoring and tracking

- Monitor oral health worker density and distribution in relation to epidemiology.
- Monitor migration of populations and oral health providers.
- Monitor the use of dental amalgam in the framework of the Minamata Convention on Mercury.
- Monitor changing population health needs to inform needs-based resource planning.
- Monitor emerging innovations in treatment technology which may provide efficiency improvements and incorporate them in oral health needs-based resource and workforce planning.

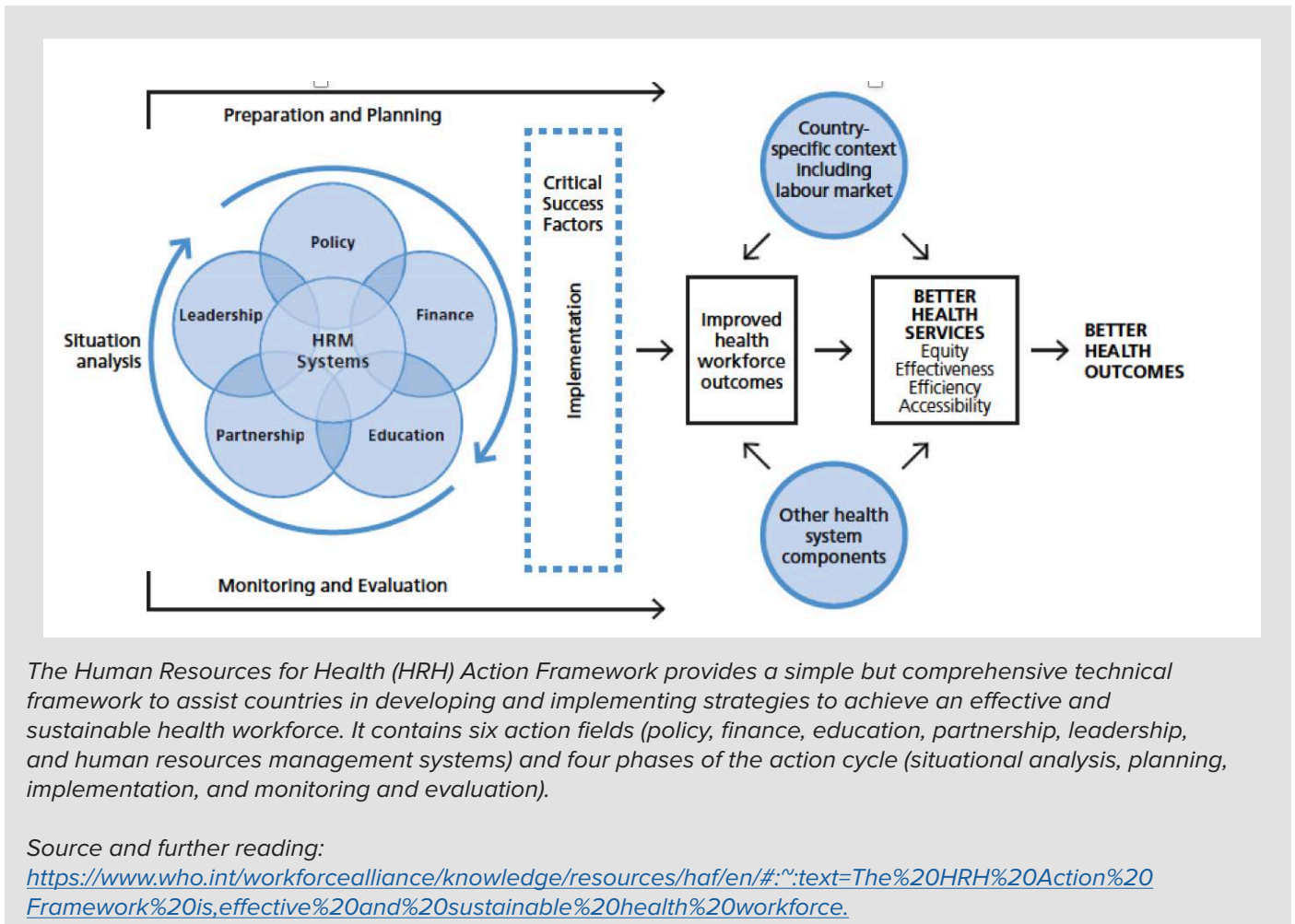


Figure 4: Human Resources for Health Action Framework

Conclusion

Globally, there is a strong recognition that human resources for health are fundamentally important to deliver effective care, accessible to all people. This includes, in particular, a focus on prevention, screening for and monitoring of systemic health conditions, environmentally friendly practices and an appropriate, responsible use of technology that benefits patients. Successful oral health resource

and workforce planning is critical to the sustainability of a healthcare system and should be developed in close cooperation between governments, educators and the oral health profession, as this planning encompasses the delivery of the right care, in the right place, at the right time, by the right number of people, to those most in need.

Case study 6 Needs-based planning

As part of the EU H2020 project ADVOCATE and leaning on WHO recommendations for health workforce planning, a model was recently developed for needs-based planning for the oral health workforce. The model factors in that:

1. the need for oral healthcare is determined by the health, and not simply the size of the population;
2. the requirement for providers is derived from the requirement for services; and
3. neither of these relationships is constant over time.

The model can be used to identify scenarios for which the dental workforce would need to be changed (compared with the status quo). The application of the above framework/model can be particularly powerful if applied iteratively and through collaboration with all relevant stakeholders (“co-production”). For health policymakers such models are particularly useful as they support informed decision-making with respect to:

- scenario analysis: comparison of the pros and cons of various dental care system designs;
- priority setting for education: number/type of study places, curriculum content; and
- priority setting for future research such as data collection for monitoring/forecasting of diseases.



Enabling a responsive and resilient profession: the case for educational reform

Building the foundation for the three pillars



OVERARCHING GOAL

The goal of educating a responsive and resilient profession is to ensure that by 2030 healthcare professionals will have the knowledge, skills and attributes to contribute appropriately to the effective prevention and management of oral diseases and collaborate across health disciplines to improve health and well-being.

Inception and Vision 2020

The principles articulated in Vision 2020 still hold true as we look to the future; but now we set out clear strategies for the attainment of the vision and

propose outcome metrics that will allow progress to be measured.

The Vision 2020 report stated that:

“Our Vision is that by 2020, our young graduates will benefit from responsive, dynamic and modular curricula, whose contents reflect state-of-the art knowledge and technologies that can be used to provide optimal oral healthcare and, in addition, provide learners with extensive critical thinking and analytical skills as a foundation for a career based on life-long learning and continuing professional development. We further envision that a stronger focus on public health and trans-professional education will greatly ease collaboration with medical professionals and hence strengthen the recognition of our profession. Similarly, taking on the responsibility for the oral health education of health workers will promote our profession into a position of natural leadership, which will aptly highlight our relevance.”

Background

The global burden of untreated oral disease remains unacceptably high and is accompanied by marked inequalities both within and between countries. Addressing this challenge will require a stronger focus on population-level prevention, recognition of both social and commercial determinants of health, and adoption of a common risk factor (CRF) approach. It will also call for intersectoral and inter-professional collaboration. These formidable demands will require oral health education to change and adapt, to produce oral healthcare professionals with the knowledge, skills, and competence to meet them. Our graduates of the future will need to possess skills in leadership, teamwork and systems change to ensure that healthcare systems deliver optimal oral health for all with no person left behind.

In the decade ahead there will be, more than ever before, an overwhelming volume of emerging science as well as news and opinions emanating from numerous and often unreliable sources. The emergence of global crises and catastrophic events, such as pandemics, also serves to emphasize the need for professional fortitude. If oral healthcare professionals are to have the necessary resilience to practice safely in the face of this fast changing

and uncertain environment, they will require highly developed critical thinking skills, the ability to analyze and synthesize scientific information, and the ability to make evidence-based decisions.

There is not enough time within dental school curricula to impart to students everything they need to know about oral and general health, or how to integrate oral care with general healthcare. Hence graduation from dental school does not mark the end of their learning experience; rather it is the beginning of the process of lifelong learning.

Major developments in the healthcare debate, such as the Sustainable Development Goals (SDGs), Universal Health Coverage (UHC), social and commercial determinants of health, common risk factors, person-centred care, intra- and inter-professional integration and trans-sectoral collaboration, create major challenges and opportunities for the dental profession. In particular, they present a unique opportunity to offer leadership and evidence for, and subsequent education about, the importance and relevance of oral health to the achievement of overall health and well-being. This will involve the entire healthcare workforce as well as civil society.

Resilience and leadership must be emphasized in all educational endeavours and apply to:

- **individual oral health professionals:** rapidly evolving work conditions, ever-increasing amounts of scientific evidence, and technical innovations require continuous personal and professional development, including life-long learning, cultural competency and maintaining good work-life balance to ensure appropriate quality of safety of oral healthcare, and mitigate professional burn-out;
- **the oral health profession as a whole:** rapidly evolving demographic and epidemiological conditions, changing macro-economic conditions, as well as technical innovations require oral health resources and workforce planning to be fully centred around people's oral health needs and to be rapidly responsive to change; and
- **oral health systems sustainability:** increasing costs of health and oral healthcare increasingly conflict with sustainable development and therefore require the oral health field to continuously demonstrate the value add of oral healthcare to society, to prioritize programmes with high value add and to eliminate programmes that do not satisfy the value expectations of society.

The opportunities and challenges described in pillars 1, 2 and 3 highlight the need to rethink and reform existing educational systems to produce a responsive and resilient profession. This section

of the Vision 2030 report provides the foundation to achieve this and thus ensure oral healthcare professionals are equipped to respond to present and future global and local needs and circumstances.

Key challenges

Our profession is challenged with how to:

1. incorporate scientific information to inform clinical practice, how to convey and share this information with other healthcare professionals, how to use this information to update and educate patients in a healthcare environment with emerging technologies and treatment modalities, and how to use this information to promote oral health and well-being for the benefit of the overall population;
2. cultivate responsible and accountable leaders in oral health;
3. develop healthcare professionals capable of remaining competent throughout their careers;
4. integrate oral health within the curricula and continuing education programmes for all health professionals;
5. participate and contribute to collaborative education and practice; and
6. empower people to take responsibility for their own oral health and well-being throughout their lifespan with a view to achieving health equity.

Strategies to address these challenges need to be developed not only for the healthy population, but also for patients with special needs, for medically complex patients, for an ageing population, for an increasing pool of migrant populations, to ensure we leave no-one behind.

Emerging technologies will enhance patient care by using artificial intelligence (AI), equipping providers with digital equipment and devices to carry out a range of treatment procedures, as well as providing durable and safe alternative restorative materials, which will all enhance the range of treatment options. However, these technological advances must be evaluated for cost benefit and should be affordable for all.

Different and innovative approaches may challenge existing educational and training orthodoxy, which must be considered when attempting change.

Supporting approaches

Meeting the key challenges outlined in the previous section will require a range of different approaches, including:

- Enhancing the focus on pre- and post-doctoral education, and continuing education courses for the oral healthcare professional on evidence-based dentistry (best current scientific evidence, clinical expertise and patient's values and preferences), critical thinking and biostatistics in order to learn how to access, retrieve, analyze and apply new scientific information that will inform dental practice and research.
- Educating and training oral healthcare professionals to learn how to advocate for oral health (see *Case study 7*) and empower patients to take responsibility for their own health and well-being.
- Providing continuous education and training for existing oral healthcare faculty.

- Enhancing cross-discipline collaborative education and practice, using the dental office as a portal into the overall healthcare system through medical assessments and screenings in dental offices, providing opportunistic immunizations, assessing and acting on CRFs for systemic diseases, nutritional counselling.
- Promoting and implementing person-centred approaches to care.
- Promoting oral health literacy among patients and all healthcare professionals (see *Case study 8*).
- Engaging with industry partners to provide support for integration of emerging technologies in the context of UHC.

Stakeholders

The central responsibility for educating oral healthcare professionals of the future will remain with dental and other health educational institutions, organizations, and accrediting bodies. However, the breadth of this education will also involve the participation of a range of other stakeholders, including:

- providers and accrediting organizations responsible for continuing education programmes;
- student associations engaged in biomedical disciplines;
- all healthcare professionals and professional organizations;
- organizations concerned with research and innovation;
- patient advocacy groups;
- people and civil society;
- health economists and policymakers; and
- industry, commerce, and partnerships for public purpose.

Conclusion

Oral health professionals of the future will be much more adaptable, resilient, culturally competent, and agile, with a more holistic approach to health and well-being. Their education and training in public health will enable them to contribute more effectively

The need for key performance indicators

A range of performance indicators will need to be developed, so that the effectiveness of education in delivering optimal oral health for all can be assessed.

The performance indicators will address issues such as:

- social and commercial determinants of health;
- the relationship between oral and general health;
- prevention and management of oral diseases;
- basic, clinical and translational research;
- evidence-based practice and critical thinking;
- the use of appropriate technology;
- professionalism, teamwork and social responsibility; and
- collaborative education and practice.

to the population-level prevention of oral disease. Their education and training will also enable them to play a central role in dealing with future public health emergencies.

Case study 7 Dental Education in Malawi: the MalDentProject

The MalDent Project is a collaboration between the University of Malawi (UoM) College of Medicine and the University of Glasgow Dental School and is funded by the Scottish Government. Its primary aim has been to establish the first Bachelor of Dental Surgery (BDS) degree programme in Malawi, as part of the response to the serious existing shortage of dentists in the country (42 dentists for 18.8 million people).

Collaboration between 2017 and 2019 allowed the creation of a BDS curriculum that would deliver dentists who were 'globally competent and locally relevant', to quote the words of the principal of the UoM College of Medicine. Following approval by the University of Malawi Senate in March 2019, the first ever cohort of BDS students enrolled in the programme in August 2019. The Maldent Project (www.themaldentproject.com) has established a staffing strategy, provides support with delivery of teaching as the programme is developing, and is also funding the design of a building on the Blantyre

campus, which will accommodate dental student clinical instruction.

The curriculum contains a significant oral disease prevention component, which links closely with a second major strand of activity, namely to develop a National Oral Health Policy and implementation strategy. This is being delivered through collaboration between clinical academic staff in Scottish dental schools, the School of Public Health & Family Medicine at the UoM College of Medicine, WHO Africa and the Malawi Government Ministry of Health & Population.

A programme for prevention of dental disease in children, based on Scotland's Childsmile model (www.child-smile.org.uk) will be supported by an underpinning research programme to evaluate models of delivery, with particular emphasis on supervised tooth brushing in schools. Following the appropriate proof of concept work, the prevention programme will be integrated into the oral health policy for Malawi.



Case study 8 World Oral Health Day

Educating healthcare professionals to acquire the skills and attributes to contribute appropriately to the effective prevention and management of oral diseases can only be truly effective if combined with improved health literacy. Health professionals need to work together with the populations they serve to ensure effective communication. It is a two-way relationship where people need to take an active role in health-related decisions and develop strong health information skills and healthcare providers need to utilize effective health communication skills. This is the premise under which World Oral Health Day (WOHD) was born in 2007. Its purpose: to empower people with the tools and knowledge to prevent and control oral diseases. Celebrated on 20 March each year, WOHD unites the world to help reduce the burden of the most prevalent diseases.

WOHD is spearheaded by FDI and is the largest global awareness campaign on oral health, which:

- **empowers** individuals to take personal action;
- **encourages** schools and youth groups to deliver learning activities about oral health;
- **provides** a unified platform for oral health professionals and the wider healthcare community to educate the populations they serve; and

- **urges** governments and policymakers to champion better oral health for all by influencing the decisions they make.

FDI produces a whole range of campaign material and resources, including toolkits, brochures, fact sheets, posters, and social media assets that can be customized at a country level and rolled out as appropriate. The material helps improve health literacy as educational messages on how to prevent and control oral diseases are disseminated broadly through: mass public events including walks, brush-a-thons and fundraisers; educational messages are also shared through events organized in other settings such as dental practices, hospitals, universities, schools and government buildings across the world. Social media has also grown significantly as a medium to extend the reach of these oral health messages.

From its humble beginnings in 2007, in 2020 WOHD was celebrated in 177 countries with an overall campaign reach of over 2 billion. (www.worldoralhealthday.org).



World Oral Health Day
20 March



Photograph courtesy of Cambodian Dental Association

Delivering Optimal Oral Health for All:

A call to action

Major inequalities in oral health exist, both within and between countries, as well as competing health priorities and available resources to address these.

The fundamental purpose of Vision 2030 is to unite the oral healthcare community behind the goal of delivering optimal oral health for all. It will be for individual countries to interpret the recommendations in this report according to their specific circumstances. This report addresses how the challenges can be met and sets out three major goals, through the achievement of which optimal health for all can be delivered. These are that:

- **Essential oral health services will be integrated into healthcare** in every country and appropriate quality oral healthcare will be available, accessible, and affordable for all.
- **Oral and general person-centred healthcare will be integrated**, leading to more effective prevention and management of oral diseases and improved health and well-being.
- **Oral health professionals will collaborate with a wide range of health workers** to deliver sustainable, health-needs-based, and people-centred healthcare.

This report also emphasizes the responsibility of individual oral healthcare professionals to maintain an appropriate level of competency throughout their professional lives, and the necessity to shoulder a leadership role within the healthcare community and society more widely. The recommendations in this report are not prescriptive and should be interpreted and addressed according to particular needs and circumstances.

Achieving these goals and meeting the challenges outlined will not be easy and will call for oral healthcare professionals to exhibit resolve as well as personal and professional resilience. However, the health gains in terms of not only improved oral health, but also of improved general health and well-being are considerable. Vision 2030 is a call to action to the profession, but it also proposes how the goals set out can be achieved.

IT IS NOW TIME FOR THE PROFESSION TO RESPOND.

APPENDICES

Appendix 1 – Vision 2030: Measuring progress towards realization

Pillar 1: Universal coverage for oral health

Overall target	Overall indicators
By 2030, oral health and quality of life are improved, and the prevalence and morbidity of oral diseases are reduced by one-third through promotion, prevention, treatment and rehabilitation	<ul style="list-style-type: none"> • Availability of appropriate community level fluoridation measures • Availability of population-level oral disorder prevention strategies • Availability of policies addressing sugar consumption • Oral Health-Related Quality of Life (OHRQoL) measures are tabulated • Prevalence of dental caries (stratified by age groups) • Prevalence of periodontal diseases • Prevalence of oral cancer • Prevalence of any other oral disease with a significant morbidity
Additional targets	Additional indicators
By 2030, all people, including the most vulnerable, have access to appropriate oral healthcare services	<ul style="list-style-type: none"> • Proportion of primary health centres with embedded oral health services • Proportion of population covered by public and/or private oral healthcare providers • Number of people covered by any oral health insurance or benefit plan per 1,000 population • Percentage of out of pocket (OOP) expenditure on oral healthcare (per capita in proportion to general OOP expenditure)
By 2030, investments in primary oral healthcare have been increased	<ul style="list-style-type: none"> • Density and distribution of dentists working at primary healthcare level • Density and distribution of other oral healthcare workers working at primary healthcare level
By 2030, appropriate legal and regulatory frameworks to deliver fair, equitable and affordable oral healthcare services are executed	<ul style="list-style-type: none"> • The call for accountable regulatory authorities for maintaining standards of care, pricing of services, and developing appropriate oral health technology assessment is recognized and addressed
By 2030, oral health is entrenched as a political priority	<ul style="list-style-type: none"> • Availability of a National Oral Health Policy • Presence of a Chief Dental Officer • Inclusion of oral health in UHC benefit packages
By 2030, meaningful multi-sectoral partnerships beyond the oral health sector have been established with other health and development programmes	<ul style="list-style-type: none"> • Number of health programmes (non-communicable diseases [NCD] and Non-NCD) which incorporate oral health promotion and disease prevention messages • Number of development programmes (nutrition, education, water and sanitation) which incorporate oral health promotion and disease prevention messages

Pillar 2: Integrating oral health into the general health and development agenda

Target	Overall indicators
By 2030, education for the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	<ul style="list-style-type: none"> • Availability of educational programmes which address the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol
By 2030, awareness of the importance of modifiable shared risk factors associated with non-communicable diseases is strengthened among all people	<ul style="list-style-type: none"> • Availability of educational programmes and/or campaigns to increase awareness of the importance of modifiable shared risk factors associated with non-communicable diseases
By 2030, every country has a policy which addresses sugar consumption	<ul style="list-style-type: none"> • Availability of policies addressing sugar consumption in line with WHO guidelines
By 2030, health surveillance systems include oral health indicators	<ul style="list-style-type: none"> • Inclusion of oral health indicators in the national health surveillance system
By 2030, oral health data is integrated into medical data management systems	<ul style="list-style-type: none"> • Inclusion of comprehensive oral health information in all medical data management systems
By 2030, smoking cessation programmes are integrated in dental education, training and practice	<ul style="list-style-type: none"> • Inclusion of smoking cessation programmes in dental education, training, and practice • Prevalence of tobacco use

Pillar 3: Building a resilient oral health workforce for sustainable development

Targets	Overall indicators
By 2030, person-centred care is delivered by health professionals working within their scope of practice in those areas where they are educated, trained, authorized and competent	<ul style="list-style-type: none"> • Availability of formal definitions for the scope of practice of all health professionals • Availability of a formal process of registration for all health professionals • Health and oral health worker density and distribution • Availability of routinely reported quality indicators to monitor the quality of oral healthcare
By 2030, oral healthcare providers are embedded in overall planning for human resources in health	<ul style="list-style-type: none"> • Availability of an oral health needs-based workforce planning strategy as part of routine health services and resource planning
By 2030, the use of dental amalgam has been substantially reduced worldwide	<ul style="list-style-type: none"> • Amalgam has been phased down (y/n) • Availability of affordable, safe, and reliable alternatives • Amount of dental amalgam sold
By 2030, the use of dental materials containing plasticizers has been substantially reduced worldwide	<ul style="list-style-type: none"> • Amount of dental composites sold
By 2030 the prescribing of antibiotics in dentistry will be substantially reduced worldwide. This will limit the potential contribution of dentistry to antimicrobial resistance	<ul style="list-style-type: none"> • Adherence to (international) guidelines for the prescription of antibiotics • Availability of documentary evidence that the adherence to antibiotic prescribing guidelines is routinely and effectively monitored & audited
By 2030, health systems have strategies in place to mitigate the effects of oral health workforce migration and populations migration	<ul style="list-style-type: none"> • Availability of crisis management strategies for oral health (refugees, infectious disease outbreaks, national disasters, etc.)
By 2030, health systems have strategies in place to prevent the negative consequences of the looming shortage in the oral health workforce	<ul style="list-style-type: none"> • Availability of long-term workforce planning • Availability of workforce retention strategies
By 2030, health systems adhere to transparent monitoring of quality of oral healthcare	<ul style="list-style-type: none"> • Systems are in place to ensure adherence to all ISO standards relevant for oral healthcare • Percentage of dental practices per country which use officially accredited audit and feedback systems including patient-reported quality indicators

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Appendix 3 List of acronyms and glossary

List of acronyms

AI	Artificial intelligence
CRFA	Common risk-factor approach
CRFs	Common risk factors
e-health	Electronic health
EMR	Electronic medical record
EU H2020	European Union Horizon 2020
FDI	FDI World Dental Federation
HiAP	Health in All Policies
HMICs	High- and middle-income countries
HL-7 C-CDA	Health Level Seven International Consolidated Clinical Document Architecture
IADR	International Association for Dental Research
ISO	International Organization for Standardization
LMICs	Low- and middle-income countries
NIIOH	National Interdisciplinary Initiative on Oral Health
NCDs	Noncommunicable diseases
NCD Alliance	Noncommunicable Disease Alliance
m-health	Mobile health
OECD	Organisation for Economic Co-operation and Development
OHiAP	Oral Health in All Policies
OHRQoL	Oral Health-Related Quality of Life
OOP expenditure	Out-of-pocket expenditure
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
SDGs	Sustainable Development Goals
SMS	Short message service
SSB	Sugar-sweetened beverage
UN	United Nations
UHC	Universal health coverage
UNEP	United Nations Environment Programme
WHO	World Health Organization
WOHD	World Oral Health Day
Vision 2030	Vision 2030: Delivering Optimal Health for All

Glossary

Term	Definition	Reference source
Availability, accessibility, and affordability	<p>Availability Need to have sufficient quantity of functioning public health and healthcare facilities, goods and services, and programmes.</p> <p>Physical accessibility The availability of good health services within reasonable reach of those who need them and of opening hours, appointment systems and other aspects of service organization and delivery that allow people to obtain the services when they need them. Universal health coverage and universal access, Bulletin of the World Health Organization 2013; 91:546–546A. As defined in the human rights context, “[h]ealth facilities, goods and services must be within safe physical reach for all sections of the population, especially vulnerable or marginalized groups, such as ethnic minorities and indigenous populations, women, children, adolescents, older persons, persons with disabilities and persons with HIV/AIDS, including in rural areas”.</p> <p>Economic accessibility, or affordability is a measure of people’s ability to pay for services without financial hardship. It takes into account not only the price of the health services but also indirect and opportunity costs (e.g., the costs of transportation to and from facilities and of taking time away from work). Affordability is influenced by the wider health financing system and by household income.</p>	<p>World Health Organization. <i>Availability, Accessibility, Acceptability</i>. Available from: https://www.who.int/gender-equity-rights/knowledge/AAAQ.pdf?ua=1 [Accessed 15 July 2020].</p> <p>World Health Organization. <i>Gender, equity and human rights</i>. Available from: https://www.who.int/gender-equity-rights/understanding/accessibility-definition/en/ [Accessed 15 July 2020].</p>
Basic package of oral care	<p>A basic package of oral care includes Oral Urgent Treatment (OUT) which has three fundamental elements (relief of oral pain, first aid for oral infections and dento-alveolar trauma, referral of complicated cases), Affordable Fluoride Toothpaste (AFT) and Atraumatic Restorative Treatment (ART).</p>	<p>FDI World Dental Federation. <i>The Challenge of Oral Disease – A call for global action</i>. The Oral Health Atlas. 2nd ed. Geneva: FDI World Dental Federation; 2015 Available from: https://www.fdiworlddental.org/sites/default/files/media/documents/complete_oh_atlas.pdf [Accessed 15 July 2020].</p>
Behaviour change communication tools	<p>It is the strategic use of communication approaches to promote changes in knowledge, attitudes, norms, beliefs and behaviours. The term refers to the coordination of messages and activities across a variety of channels to reach multiple levels of society, including the individual, the community, services and policy.</p>	

<p>Collaborative practice</p>	<p>Collaborative practice in healthcare occurs when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, carers and communities to deliver the highest quality of care across settings.</p>	<p>World Health Organization. <i>Framework for Action on Interprofessional Education & Collaborative Practice</i>. Available from: https://apps.who.int/iris/bitstream/handle/10665/70185/WHO_HRH_HPN_10.3_eng.pdf;jsessionid=23A79F87D7558248D7CFC786D80B8FAD?sequence=1 [Accessed 15 July 2020].</p>
<p>Commercial determinants of health</p>	<p>The commercial determinants of health are strategies and approaches used by the private sector to promote products and choices that are detrimental to health.</p>	<p>Kickbusch I, Allen L, Franz Ch. <i>The commercial determinants of health</i>. <i>The Lancet</i>. 2016;4(12): E895-E896. doi.org/10.1016/S2214-109X(16)30217-0.</p>
<p>Common risk-factor approach (CRFA)</p>	<p>The common risk factor approach is a guiding principle for developing evidence-based, population-wide interventions that address social determinants of health to reduce disease burden.</p>	<p>FDI World Dental Federation. Noncommunicable Diseases. Available from: https://www.fdiworlddental.org/resources/policy-statements-and-resolutions/noncommunicable-diseases [Accessed 15 July 2020].</p>
<p>Essential health package</p>	<p>Detailed lists of interventions/services (preventive, promotive, curative, rehabilitative and palliative) across different levels of care, endorsed by the government at the national level, or agreed to by a substantial group of actors when services are to be provided in areas outside of government control. These interventions should be available to all, safe, people centred, and of assured quality to be effective.</p>	<p>World Health Organization. <i>Working Paper on the Use of Essential Packages of Health Services in Protected Emergencies</i>. Available from: https://www.who.int/health-cluster/about/work/task-teams/EPHS-working-paper.pdf [Accessed 15 July 2020].</p>
<p>Free sugars</p>	<p>Free sugars are those that are added to foods and drinks by the manufacturer, cook, or consumer, and sugars naturally present in honey, syrups, fruit juice and fruit juice concentrates. It does not refer to sugar that is naturally present in fruits, vegetables, and milk.</p>	<p>World Health Organization. <i>Sugars intake for adults and children</i>. Geneva: World Health Organization; 2015 Available from: https://apps.who.int/iris/bitstream/handle/10665/149782/9789241549028_eng.pdf?sequence=1 [Accessed 14 July 2020].</p>
<p>Health in All Policies (HiAP)</p>	<p>HiAP is an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies, and avoids harmful health impacts in order to improve population health and health equity. As a concept, it reflects the principles of: legitimacy, accountability, transparency and access to information, participation, sustainability, and collaboration across sectors and levels of government.</p>	<p>World Health Organization. <i>Health in All Policies (HiAP) Framework for Country Action</i>, January 2014. Available from: https://www.who.int/healthpromotion/frameworkforcountryaction/en/ [Accessed 15 July 2020].</p>

<p>Health literacy</p>	<p>The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Ratzan and Parker, 2000).</p> <p>Full source: Ratzan SC, Parker RM. 2000. Introduction In: National Library of Medicine Current Bibliographies in Medicine: Health Literacy. Selden CR, editor; , Zorn M, editor; , Ratzan SC, editor; , Parker RM, editor. , Editors. NLM Pub. No. CBM 2000-1. Bethesda, MD: National Institutes of Health, U.S. Department of Health and Human Services.</p>	<p>Institute of Medicine (US) Committee on Health Literacy; Nielsen-Bohlman L, Panzer AM, Kindig DA, (eds). <i>What Is Health Literacy? in Health Literacy: A Prescription to End Confusion</i>. Washington (DC): National Academies Press (US); 2004 Available from: https://www.ncbi.nlm.nih.gov/books/NBK216035 [Accessed 14 July 2020].</p>
<p>Intra-professional and inter-professional education</p>	<p>Intra-professional education means that all students of the dental profession e.g. dentists, dental therapists, dental assistants are trained together. Conversely, inter-professional education means that students of different health professions (e.g. dentists, physicians, nurses) have a joint educational curriculum.</p>	<p>FDI World Dental Federation. <i>Optimal Oral Health through Inter-Professional Education and Collaborative Practice</i>. Available from: https://www.fdiworlddental.org/sites/default/files/media/news/collaborative-practice-digital.pdf [Accessed 15 July 2020].</p>
<p>Minamata Convention on Mercury</p>	<p>A global treaty to protect human health and the environment from the adverse effects of mercury.</p>	<p>FDI World Dental Federation. <i>Dental Amalgam Phase Down</i>. Available from: https://www.fdiworlddental.org/resources/policy-statements/dental-amalgam-phase-down [Accessed 15 July 2020].</p>
<p>Oral disorders</p>	<p>These are the disease conditions that affect oral health, which is multi-faceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow and convey a range of emotions through facial expressions with confidence and without pain, discomfort and disease of the craniofacial complex.</p>	<p>FDI World Dental Federation. FDI's definition of oral health. Available from: https://www.fdiworlddental.org/oral-health/fdi-definition-of-oral-health [Accessed 15 July 2020].</p>
<p>Oral Health in All Policies (OHAP)</p>	<p>Similar to Heal in All Policies (HiAP), OHAP is an approach to public policies across sectors that systematically takes into account the oral health implications of decisions, seeks synergies, and avoids harmful oral health impacts in order to improve population health and health equity.</p>	<p>World Health Organization. <i>Health in All Policies (HiAP) Framework for Country Action</i>, January 2014. Available from: https://www.who.int/healthpromotion/hiapframework.pdf [Accessed 15 July 2020].</p>
<p>Oral health literacy</p>	<p>American Dental Association policy defines oral health literacy as the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate oral health decisions.</p>	<p>American Dental Association. <i>Health Literacy in Dentistry</i>. Available from: https://www.ada.org/en/public-programs/health-literacy-in-dentistry [Accessed 15 July 2020].</p>

Oral Health-Related Quality of Life (OHRQoL)	<p>OHRQoL is defined as ‘a multidimensional construct that reflects (among other things) people’s comfort when eating, sleeping and engaging in social interaction; their self esteem; and their satisfaction with respect to their oral health’ (US Department of Health and Human Services).</p> <p>Popular OHRQoL instruments include OHIP, GOHAI, and OIDP.</p>	<p>FDI World Dental Federation. <i>Oral Health and Quality of Life</i>. Available from: https://www.fdiworlddental.org/resources/policy-statements-and-resolutions/oral-health-and-quality-of-life [Accessed 15 July 2020].</p>
Out-of-pocket (OOP) expenditure	<p>Out-of-pocket expenditure is defined as direct payments made by individuals to healthcare providers at the time of service use.</p>	<p>World Health Organization. <i>Health financing. Out-of-pocket payments, user fees and catastrophic expenditure</i>. Available from: https://www.who.int/health_financing/topics/financial-protection/out-of-pocket-payments/en/ [Accessed 15 July 2020].</p>
People-centred care	<p>People-centred care is focused and organized around the health needs and expectations of people and communities rather than on diseases. People-centred care extends the concept of patient-centred care to individuals, families, communities and society. Whereas patient-centred care is commonly understood as focusing on the individual seeking care—the patient—people-centred care encompasses these clinical encounters and also includes attention to the health of people in their communities and their crucial role in shaping health policy and health services.</p>	<p>World Health Organization. <i>Health Systems Strengthening Glossary</i>. Available from: https://www.who.int/healthsystems/hss-glossary/en/index8.html [Accessed 15 July 2020].</p>
Phase down of dental amalgam	<p>In 2013, the Minamata Convention on Mercury was agreed. It was ratified in 2017. The phase down of dental amalgam is a task to reduce the use of dental amalgam through increased prevention, health promotion, and research on advanced restorative materials and techniques – maintaining or improving adequate clinical performance. Emphasis is also given to strengthening dental students’ curricula towards prevention and teaching alternative restorative materials and techniques, including the minimum intervention approach, where appropriate.</p>	<p>FDI World Dental Federation. <i>Dental Amalgam Phase Down</i>. Available from: https://www.fdiworlddental.org/resources/policy-statements/dental-amalgam-phase-down [Accessed 15 July 2020].</p>
Primary healthcare	<p>Primary healthcare is a whole-of-society approach to health and well-being centred on the needs and preferences of individuals, families, and communities. It addresses the broader determinants of health and focuses on the comprehensive and interrelated aspects of physical, mental, and social health and well-being.</p> <p>It provides whole-person care for health needs throughout the lifespan, not just for a set of specific diseases. Primary healthcare ensures people receive comprehensive care – ranging from promotion and prevention to treatment, rehabilitation and palliative care – as close as feasible to people’s everyday environment.</p>	<p>World Health Organization. <i>Primary health care</i>. Available from: https://www.who.int/news-room/fact-sheets/detail/primary-health-care [Accessed 15 July 2020].</p>

<p>Quality (of care)</p>	<p>Quality of care includes six dimensions. It implies a care that is: effective, delivering healthcare that is adherent to an evidence base and results in improved health outcomes for individuals and communities, based on need;</p> <p>efficient, delivering healthcare in a manner which maximizes resource use and avoids waste;</p> <p>accessible, delivering healthcare that is timely, geographically reasonable, and provided in a setting where skills and resources are appropriate to medical need;</p> <p>acceptable/patient-centred, delivering healthcare which takes into account the preferences and aspirations of individual service users and the cultures of their communities;</p> <p>equitable, delivering healthcare which does not vary in quality because of personal characteristics such as gender, race, ethnicity, geographical location, or socioeconomic status;</p> <p>safe, delivering healthcare which minimizes risks and harm to service users.</p> <p>In dentistry, FDI defines quality as an iterative process involving dental professionals, patients and other stakeholders to develop and maintain goals and measures to achieve optimal health outcomes.</p>	<p>World Health Organization. <i>Quality of Care: A process for making strategic choices in health systems</i>. France: World Health Organization; 2006 Available from: https://www.who.int/management/quality/assurance/QualityCare_B.Def.pdf [Accessed 15 July 2020].</p> <p>FDI World Dental Federation. <i>Quality in Dentistry</i>. Available from: https://www.fdiworlddental.org/resources/policy-statements-and-resolutions/quality-in-dentistry [Accessed 15 July 2020]</p>
<p>Social determinants of health</p>	<p>The social determinants of health are the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities — the unfair and avoidable differences in health status seen within and between countries.</p>	<p>World Health Organization. <i>Social determinants of health</i>. Available from: https://www.who.int/social_determinants/sdh_definition/en/ [Accessed 15 July 2020].</p>
<p>Universal health coverage (UHC)</p>	<p>Universal health coverage (UHC) means that all people and communities can use the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship. This definition of UHC embodies three related objectives:</p> <ol style="list-style-type: none"> 1. Equity in access to health services - everyone who needs services should get them, not only those who can pay for them; 2. The quality of health services should be good enough to improve the health of those receiving services; and 3. People should be protected against financial-risk, ensuring that the cost of using services does not put people at risk of financial harm. <p>UHC is firmly based on the WHO constitution of 1948 declaring health a fundamental human right and on the Health for All agenda set by the Alma Ata Declaration in 1978. UHC cuts across all of the health-related Sustainable Development Goals (SDGs) and brings hope of better health and protection for the world's poorest.</p>	<p>World Health Organization. <i>Health financing for universal coverage</i>. Available from: https://www.who.int/health_financing/universal_coverage_definition/en/ [Accessed 15 July 2020].</p>

<p>Value-based payments (or performance-based payments)</p>	<p>Payment or funding conditional upon taking a measurable action or achieving a predetermined performance target. May refer to transfer of funds by donors to recipient countries, or to payment of providers or provider organizations for reaching service targets.</p>	<p>WHO, derived from Eichler R. Can “Pay-for-Performance” increase utilization by the poor and improve the quality of health services. Washington, D.C., Center for Global Development, 2006. Available at: www.researchgate.net/publication/250779834_Can_Pay_for_Performance_Increase_Utilization_by_the_Poor_and_Improve_the_Quality_of_Health_Services</p> <p>World Health Organization. <i>Health Systems Strengthening Glossary</i>. Available from: https://www.who.int/healthsystems/hss_glossary/en/index8.html [Accessed 15 July 2020].</p>
<p>Workforce planning</p>	<p>The purpose of workforce planning is to rationalize policy options based on a financially feasible picture of the future in which the expected supply of human resources for health (HRH) matches the requirements for staff within the overall health service plans. The formulation of national HRH policies and strategies requires an evidence-based planning to rationalize decisions. A range of tools and resources exist to assist countries in developing a national HRH strategic plan.</p>	<p>World Health Organization. <i>Models and tools for health workforce planning and projections</i>. Switzerland: World Health Organization; 2010 Available from: https://www.who.int/workforcealliance/knowledge/resources/models_hrh_planning/en/ [Accessed 15 July 2020].</p>

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The Vision 2030 Working Group members and workshop participants alone are responsible for the views expressed in this report and they do not necessarily represent the views, decisions, or policies of the institutions with which they are affiliated.

Case studies

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