



IADR

International Association
for Dental Research

September 10, 2021

Benoit Varenne, DDS, MPH, PhD.

Dental Officer, Oral Health Program Noncommunicable Diseases Dept,
Division of UHC/Communicable and Noncommunicable Diseases,
World Health Organization
20, Avenue Appia, CH-1211
Geneva 27

Re: Draft Global Strategy on Tackling Oral Diseases.

via email: varenneb@who.int

The International Association for Dental Research (IADR), which represents over 10,000 researchers around the world with a mission to drive dental, oral and craniofacial research for health and well-being worldwide, appreciates the opportunity to share our thoughts on the Draft Global Strategy on Tackling Oral Diseases being developed by the World Health Organization (WHO). IADR applauds the WHO on both the approval of the Oral Health Resolution during the World Health Assembly 74 (WHA74) as well as the development of this draft global strategy on tackling oral diseases. We also support the development of the global strategy to inform the development of a framework for tracking progress with clear measurable targets. To respond to this request for comments, IADR engaged its Science Information Committee and its Board of Directors.

Paragraph 9 of the Commercial Determinants and Risk Factors of Oral Health section of the draft report, addresses human papilloma virus as a risk factor for oropharyngeal cancers. This is true, as studies have shown that the incidence of HPV-related oropharyngeal cancers is rapidly increasing and currently exceeds (United States¹) or is predicted to exceed that of HPV-related cervical cancer¹². Unfortunately, there is no further mention of preventing HPV-related oropharyngeal cancers in the document. Strategic Objective 2: Oral Health Promotion and Oral Disease Prevention, Paragraph 28 should include national HPV vaccination programs for girls and boys to reduce oropharyngeal cancers as well as screening programs to mitigate outcomes.

A public health approach to disease prevention and health promotion has emerged as the dominant strategy for combating noncommunicable diseases worldwide¹ and therefore is also applicable to oral diseases. The WHO Global Oral Health Programme has adopted this approach as the best means of promoting oral health and reducing inequalities within and between countries². In paragraph 12 of the Oral Health Promotion and Oral Disease Prevention section of the draft report it is called to attention that essential prevention methods, such as community-based methods, topical fluoride applications or the use of fluoridated toothpaste, frequently are not available or affordable for people. In an effort to set measurable targets for Member States, IADR would support the explicit definition of the community-based methods that are most effective for the prevention of oral diseases as well as the most economical mechanisms. Community water fluoridation is a safe and effective, evidence-based intervention for the prevention of dental caries. Studies have shown that community water fluoridation

+1.703.548.0066
+1.703.548.1883
1619 Duke Street
Alexandria, VA 22314-3406, USA
www.iadr.org



is the simplest way to maintain a constant low dose of fluoride in the oral cavity, through drinking fluoridated water or ingesting meals prepared with fluoridated water^{3,4}. Additionally, a systematic review by the US Community Preventive Services Task Force (CPSTF) found that water fluoridation is cost saving and is a safe and effective way to prevent and control dental caries⁵. Additionally, the United Kingdom's National Institute for Health Research, Cochrane Oral Health Group, and the National Health and Medical Research Council, Australia have all conducted scientific reviews by expert panels and concluded that community water fluoridation is a safe and effective way to promote good oral health and prevent decay¹³⁻¹⁵. The WHO has previously recommended a concentration of 0.5 to 1.5 mg/L of to achieve caries prevention while minimizing the risk of dental fluorosis¹⁶. Countries have decided on the concentration of water fluoride appropriate for their context. Therefore, IADR supports the inclusion of community water fluoridation within the draft strategy as a recommendation of a measurable target for the prevention of oral diseases.

The Minamata Convention on Mercury is a multilateral, legally-binding, environmental agreement that addresses specific human activities which are contributing to widespread mercury pollution. This agreement includes an approach to phase down the use of dental amalgam for the treatment of dental caries. With 133 Parties to the Minamata Convention, including middle- and lower-income countries (LMICs), it is imperative that the draft resolution contain a specific paragraph within the Strategic Objectives section that specifically addresses the use of dental amalgam. IADR supports the inclusion of language that is supportive of the phase down of dental amalgam within Strategic Objective 3. This language should call for further research into dental amalgam alternatives and include guidance to setting national objectives and a timeline that is targeted at caries prevention and health promotion. Additionally, in resource limited settings, a premature phase out approach in lieu of a country specific and nationally contextual phase down approach may serve to widen oral health inequalities⁶.

In Guiding Principles 2 and 3, the global strategy addresses the need for the integration of oral health in primary health care and a new oral health workforce model that is responsive to population needs. It is important to note, that in several countries, for instance Mexico, primary health care is mainly provided by nurses^{8,9}. However, during basic training in nursing schools, educational preparation to address oral health needs is limited across nursing career curricula¹⁰. Consequently, it will be challenging for those countries to successfully incorporate oral health into primary health care practices. Therefore, the main activities of primary care that may be mainly aimed at the mother-child binomial, will continue to lack oral health promotion and education, which is essential during child development. IADR supports inclusion within the global strategy, a call for the integration of oral health prevention and the basic description of oral health problems during the life course within the nursing career curriculum.

As part of the Strategic Objectives, the draft report outlines the oral health research agenda. It identifies the need to create a research agenda that is oriented towards public health programs, population-based interventions, learning health systems, workforce models, digital technologies, the public health aspects of oral diseases and conditions, and economic analyses to identify cost-effective interventions. However, paragraph 32 in Strategic Objective 5 incorrectly states that "the historical oral health research agenda [that] has focused heavily on dental technology and problem description, rather than problem-solving." This is simply not true and belies the very definition of research. Our current preventive approaches have been built on decades of research into the basic biologic mechanisms of oral diseases. Rather than discard any current research agenda, IADR supports a clear call for the *enhancement* of the research agenda with an emphasis on the expansion of the current research interest in dental technologies to include a more public health lens. There is the capacity to continue to investigate appropriate dental technologies for treatment and prevention whilst addressing all the other components and foundational

biologic aspects of oral disease. As others have said, our research agenda must span from the molecular to the societal. With emerging technologies such as artificial intelligence, augmented reality, regenerative dentistry, and CRISPR, added to the lessons learned from the COVID-19 pandemic that inspired the increased need for teledentistry, we would be remiss to neglect this important aspect of the oral health research agenda.

Noma (Cancrum oris) is highlighted in several sections of the draft global strategy including references in the Oral Disease Burden, Commercial Determinants and Risk Factors of Oral Health as well as outlined as one of the roles of the WHO to consider the classification of noma within the road map for neglected tropical diseases 2021–2030. IADR applauds the WHO for their acknowledgement of the impacts of noma as well as the identification of noma as a marker of extreme poverty exacerbated by socioeconomic disparities. IADR supports the inclusion of noma in the oral disease research agenda as it continues to be poorly understood^{17,18} and would therefore benefit exponentially from a research agenda that is inclusive of studies ranging from the foundational biologic aspects of the disease to population-based research.

Orofacial cleft (OFC) is one of the most common congenital malformations and includes 3 subgroups: cleft lip (CL), cleft palate (CP), and cleft lip and palate (CLP). The causes of OFC are complex, including genetic predisposition and environmental risk factors. The average prevalence of cleft lip with or without cleft palate was 7.75 per 10,000 live births in the United States and 7.94 per 10,000 live births internationally⁷. It is most prevalent in Asian regions with 19.05 per 10,000 live births in Japan being the highest rate globally⁷. It is therefore important the special emphasis be placed on research associated with the fundamental aspects of OFC. IADR supports the inclusion of OFC in Strategic Objective 5 with a clear call for the incorporation of OFC in the research agenda and specific measurable targets for Member States to assess their progress towards this objective.

IADR appreciates the opportunity to provide comments on the Global Strategy on Oral Health being developed by the WHO. IADR stands ready to work with the WHO and the Division of UHC/Communicable and Noncommunicable Diseases to further define the global strategy. If you have any further questions, please contact Dr. Makyba Charles-Ayinde, Director of Science Policy, at mcayinde@iadr.org.

Sincerely,



Christopher H. Fox, DMD, DMSc
Chief Executive Officer



Eric C. Reynolds, AO, FICD, FTSE, FRACDS
President, IADR

¹Global strategy for the prevention and control of noncommunicable diseases. Geneva: World Health Organization; 2000.

²Petersen PE. (2003). The World Oral Health Report 2003. Continuous improvement of oral health in the 21st century the approach of the WHO Global Oral Health Programme. *Community Dentistry and Oral Epidemiology* 31 Suppl 1:3-24.

- ³Cury JA, Tenuta LM. (2008). How to Maintain a Cariostatic Fluoride Concentration in the Oral Environment. *Adv Dent Res.* **20**(1): p. 13-6.
- ⁴Lima CV, Tenuta LMA, Cury JA. (2019). Fluoride Increase in Saliva and Dental Biofilm due to a Meal Prepared with Fluoridated Water or Salt: A Crossover Clinical Study. *Caries Res.* **53**(1): p. 41-48.
- ⁵Ran T, Chattopadhyay SK. (2016). Economic Evaluation of Community Water Fluoridation: A Community Guide Systematic Review. *Am J Prev Med.* **50**(6): p. 790-6.
- ⁶Aggarwal, V.R., Pavitt, S., Wu, J. et al. (2019). Assessing the perceived impact of post Minamata amalgam phase down on oral health inequalities: a mixed-methods investigation. *BMC Health Serv Res* **19**, 985. <https://doi.org/10.1186/s12913-019-4835-1>.
- ⁷Tanaka SA, Mahabir RC, Jupiter DC, Menezes JM. (2012). Updating the epidemiology of cleft lip with or without cleft palate. *Plast Reconstr Surg.* **129**(3):511e-518e. doi: 10.1097/PRS.0b013e3182402dd1. PMID: 22374000.
- ⁸DesRoches CM, Clarke S, Perloff J, O'Reilly-Jacob M, Buerhaus P. (2017). The quality of primary care provided by nurse practitioners to vulnerable Medicare beneficiaries. *Nurs Outlook.* 2017 Nov-Dec;65(6):679-688. doi: 10.1016/j.outlook.2017.06.007. Epub PMID: 28803624.
- ⁹Smolowitz J, Speakman E, Wojnar D, Whelan EM, Ulrich S, Hayes C, Wood L. (2014). Role of the registered nurse in primary health care: meeting health care needs in the 21st century. *Nurs Outlook.* 2015 Mar-Apr;63(2):130-6. doi: 10.1016/j.outlook.2014.08.004. Epub PMID: 25261382.
- ¹⁰Bhagat V, Hoang H, Crocombe LA, Goldberg LR. (2020). Incorporating oral health care education in undergraduate nursing curricula - a systematic review. *BMC Nurs.* **14**;19:66. doi: 10.1186/s12912-020-00454-6. PMID: 32684840; PMCID: PMC7359291.
- ¹¹Van Dyne EA, Henley SJ, Saraiya M, Thomas CC, Markowitz LE, Benard VB. (2018). Trends in Human Papillomavirus-Associated Cancers — United States, 1999–2015. *MMWR Morb Mortal Wkly Rep.* **67**:918–924. DOI: <http://dx.doi.org/10.15585/mmwr.mm6733a2>
- ¹²Gougousis S, Mouchtaropoulou E, Besli I, Vrochidis P, Skoumpas I, Constantinidis I. (2021). HPV-Related Oropharyngeal Cancer and Biomarkers Based on Epigenetics and Microbiome Profile. *Frontiers in Cell and Developmental Biology.* **8**: 1677. DOI=10.3389/fcell.2020.625330.
- ¹³McDonagh MS, Whiting PF, Bradley M, et al. (2000). A Systematic Review of Public Water Fluoridation. University of York, York: NHS Centre for Reviews and Dissemination; <https://www.nhs.uk/Conditions/Fluoride/Documents/crdreport18.pdf>. [Accessed : September 3, 2021]
- ¹⁴Iheozor-Ejiofor Z, Worthington HV, Walsh T, O'Malley L, Clarkson JE, Macey R, Alam R, Tugwell P, Welch V, Glenny A-M. (2015). Water fluoridation for the prevention of dental caries. *Cochrane Database of Systematic Reviews Issue 6.*
- ¹⁵Australian Research Centre for Population Oral Health. (2006). The use of fluorides in Australia: Guidelines. *Aust Dent J.* **51**:195-199. DOI: [10.1111/j.1834-7819.2006.tb00427.x](https://doi.org/10.1111/j.1834-7819.2006.tb00427.x).
- ¹⁶World Health Organization. (2004). Fluoride in Drinking Water: Background Document for Development of WHO Guidelines for Drinking Water Quality. https://www.who.int/water_sanitation_health/dwq/chemicals/fluoride.pdf. [Accessed: September 3, 2021].
- ¹⁷Farley E, Ariti C, Amirtharajah M, Kamu C, Oluyide B, Shoaib M, Isah S, Adetunji AS, Saleh F, Ihekweazu C, Pereboom M and Sherlock M. (2021). Noma, a neglected disease: A viewpoint article. *PLoS Negl Trop Dis* **15**(6):e0009437. <https://doi.org/10.1371/journal.pntd.0009437>.
- ¹⁸Burki T. (2016). Facing Noma. *The Lancet Infectious Diseases.* **16**(11):P1231. [https://doi.org/10.1016/S1473-3099\(16\)30420-0](https://doi.org/10.1016/S1473-3099(16)30420-0)