

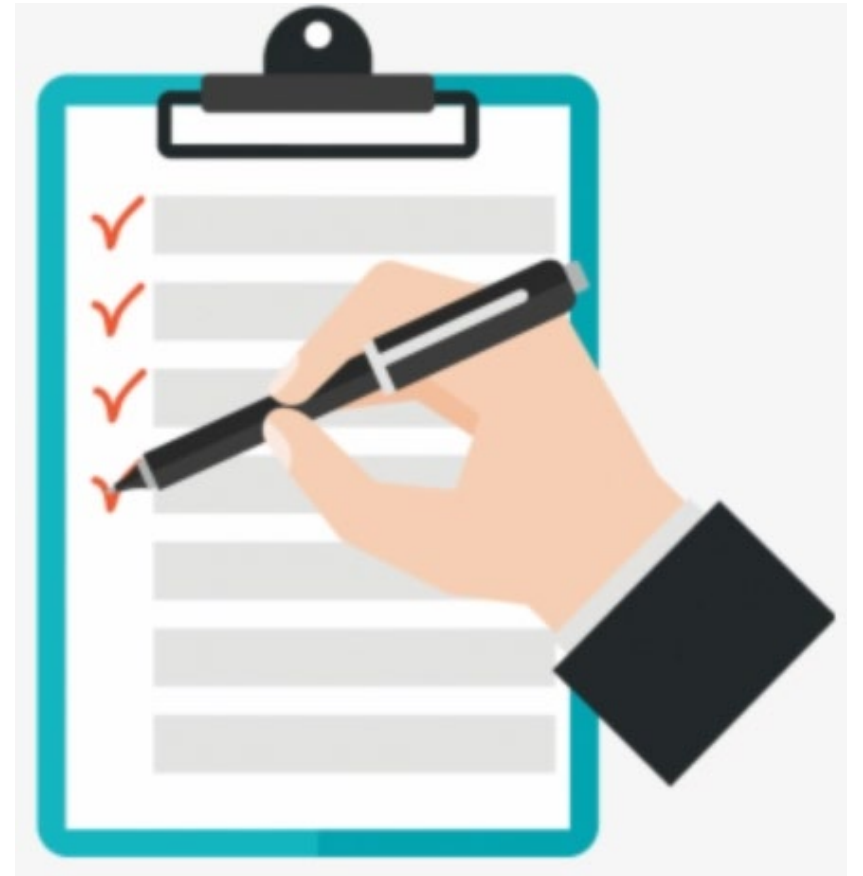


Department of
Health

National CMP Reinvestment Network
OK Senior Smiles Project
September 16, 2020
2:00 pm CST

Today's Agenda

- Purpose Statement
- Oklahoma's Senior Smile Project
- Q & A
- Wrap-Up





Our Purpose

A national network to share experiences, challenges, and successes with the reinvestment of CMP funds to improve care in nursing homes.



September 2020

OK Senior Smiles Project

Shelley Mitchell, M.Ed., RDH
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OKLAHOMA





Dental Health Services Goal

To provide leadership in oral disease prevention, anticipate needs, and mobilize efforts that will help protect and promote good oral health for Oklahoma citizens.



OK Senior Smiles Objectives

- 🦷 Train and educate all Long Term Care Nursing Staff on the importance of residents' daily oral hygiene and its link to overall health.
- 🦷 Demonstrate steps in performing proper oral hygiene.
- 🦷 Show steps in performing a daily oral health assessment and writing an oral care plan.
- 🦷 Teach nursing home staff how to correctly clean dentures.
- 🦷 Show oral lesions and discuss importance in oral cancer screenings.
- 🦷 Show products that can be used for dry mouth.
- 🦷 Review strategies for avoiding resistant care behavior during oral care.
- 🦷 Teach nursing home residents importance of daily oral hygiene and its link to overall health.
- 🦷 Demonstrate steps in daily oral hygiene to nursing home residents.
- 🦷 Perform Basic Screening Surveys (BSS) on nursing home residents to collect data to indicate need of dental treatment in our nursing home population.



Dental hygienist Shelley Mitchell has traveled to 32 nursing homes so far in Oklahoma, teaching health care workers why oral care is so important, including its link to preventing pneumonia, a leading killer of nursing home residents.

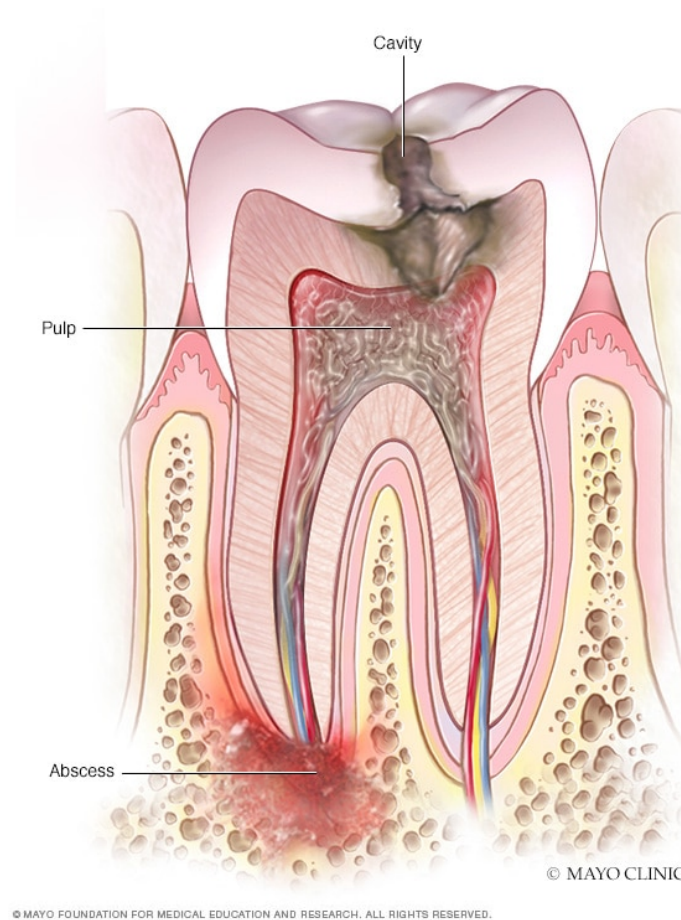
OK Senior Smiles Project

1. Two forty five minute educational trainings.
 - a) Pre- and Post- tests
 - b) Sign-in Sheet
2. Basic Screening Surveys (BSS) on 10 Residents from Each home.
 - a) BSS-Screening tool used by states to assess oral health status
 - b) Oral Health Screening results form for LTC administrator to determine needs for follow up
3. Pre and Post Assessment Survey by Nursing Home Administrator
4. Educational Toolkit
 - a) Oral Care Posters
 - b) Training video, online oral care continuing ed. class & online oral care education for sustainability
 - c) Guide for Free/Reduced cost Dental Clinics in Oklahoma
 - d) Training materials-oral care brochures and online resources for residents and family

Oral Care Champion Certification



The impact of Oral Health on COVID-19



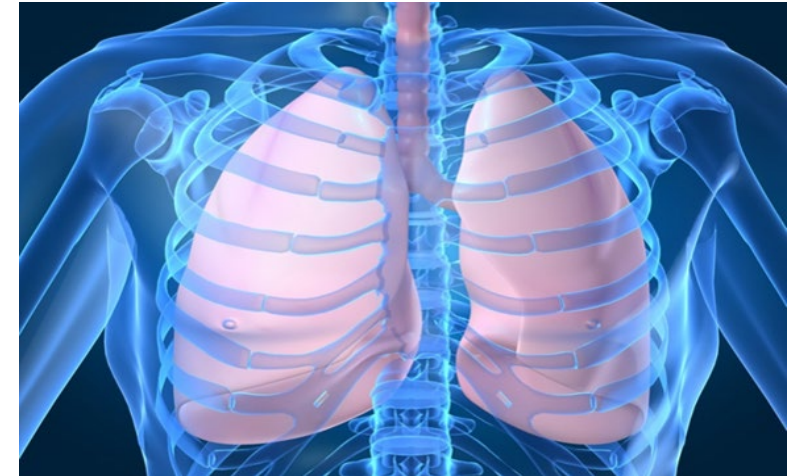
•Three ways OK Senior Smiles can help in the fight of COVID-19:

- As people get older their immune system grows weaker. Harmful bacteria in the mouth from poor oral hygiene or decay can enter the blood stream. This causes inflammation, which weakens immune system even more.
- Poor oral hygiene is a contributing factor in respiratory infections, cardiovascular disease, stroke, and diabetes. These pre-existing conditions are the reason some people are more vulnerable to serious complications from COVID-19.
- Breathing in harmful bacteria is a significant risk factor for aspiration pneumonia. Pneumonia sends many LTC residents to the hospital. It is important to keep LTC residents out of the hospital and to prevent exposure to COVID-19.

Poor oral hygiene can lead to diseases that result in death



Breathing in germs from a dirty mouth is a significant risk factor for pneumonia



Study by Quagliarello V et al. Modifiable risk factors for nursing home acquired pneumonia. *Clin Infect Dis* 2005;40:1-6



2008 Florida nursing home study

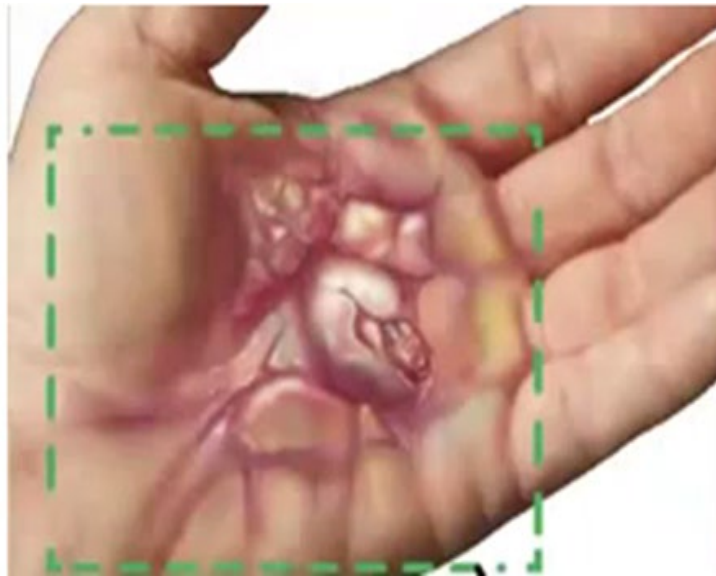
Nursing home residents who had daily mouth care provided by *nursing assistants whose only job was to provide oral care* had **three times** less risk of dying from pneumonia.

Bassam CW, Gibson G, Ward T, Paphides BM, DeNucci DJ.. Modification of Risk of Mortality from Pneumonia with Oral Hygiene Care, J Am Ger Soc, 2008, 56 (9): 1601-1607



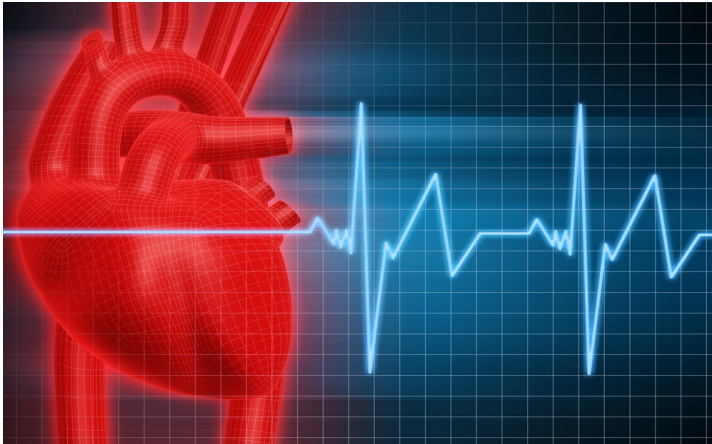


Similar Wound Surface Area





A dirty mouth increases risk of heart disease, stroke, and Diabetes



(Saremi et al. Periodontal disease and mortality in Type 2 Diabetes Care. 2005;28:27-32)



A dirty mouth makes residents sick

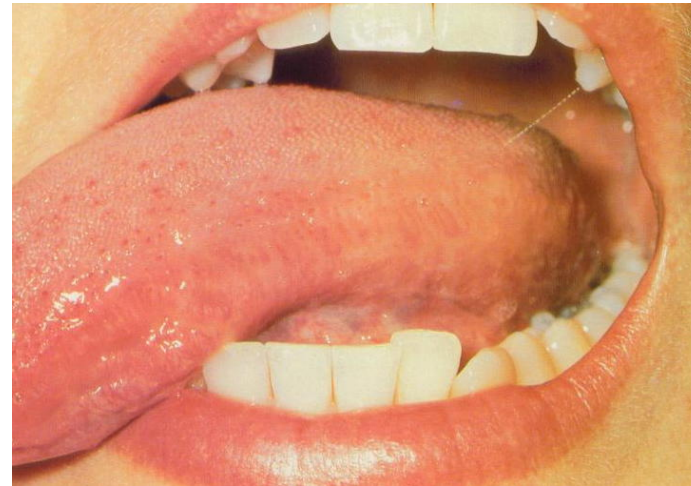
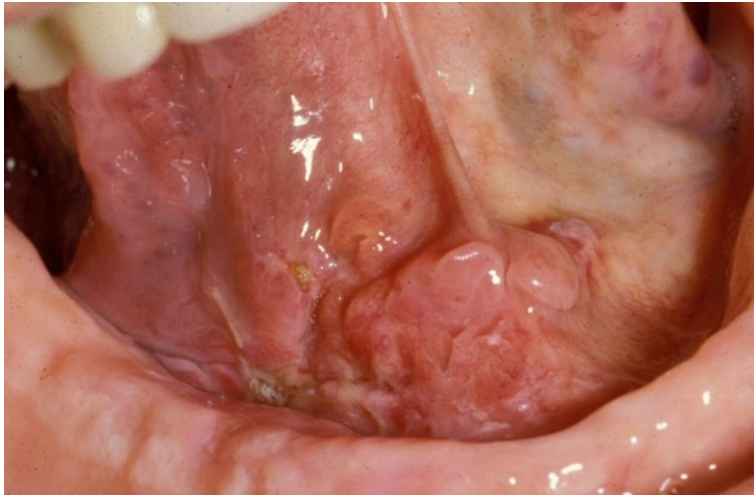


REVIEW

- **Poor oral hygiene is linked to:**
 - Cardiovascular disease
 - Poor glycemic control
 - Pneumonia
 - Stroke
 - Weight loss
 - Pressure ulcers
 - Hospital readmission rates

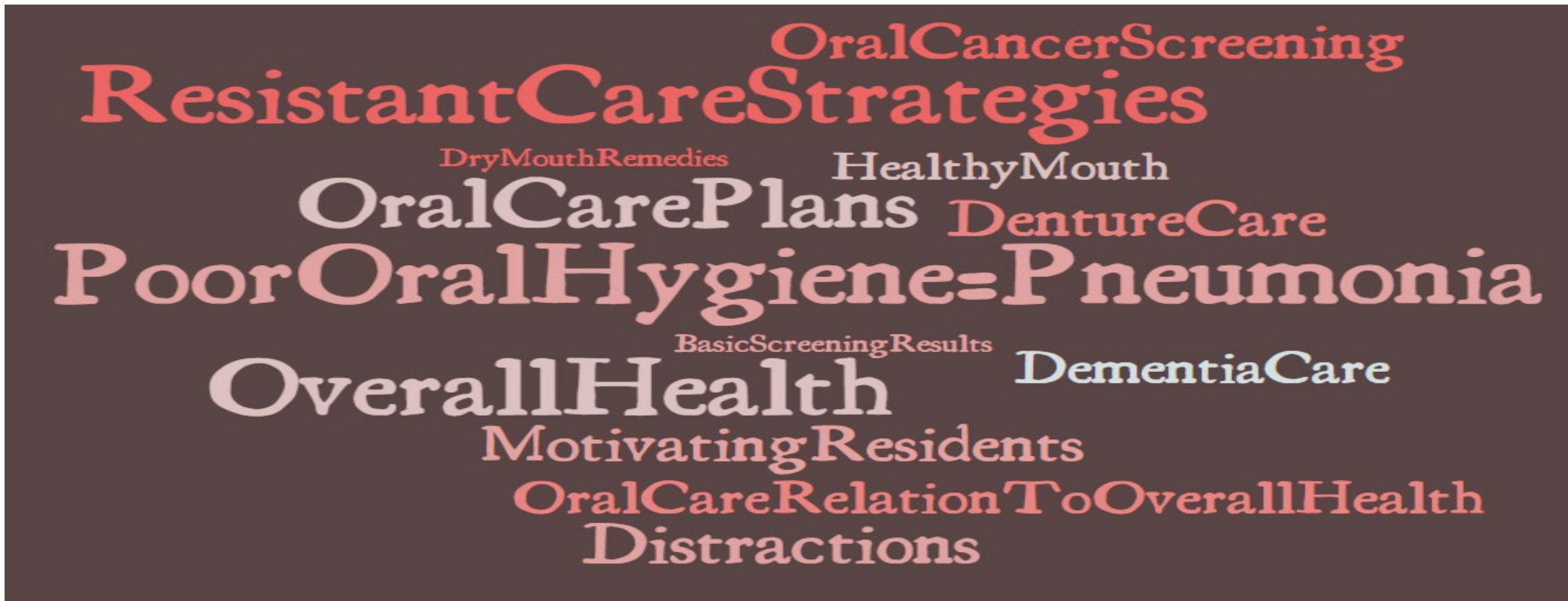
Take 60 seconds each day to do an oral health assessment

- Oral Cancer is **seven times** more likely to be diagnosed in those age 65 and older.
- **When in doubt always refer out!**





Things that staff commented on learning from previous Oral Health Care Project



OK Senior Smiles to Go



September 2020

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Wrap-Up

- A recording of today's webinar and PowerPoint slides will be available on the [TN CMP website](#)
- Save the date for our next webinar:
 - December 16, 2020 at 2:00 pm CST
 - Topic is TBD
- Please send additional questions to:
 - Kristyn.long@tn.gov
 - Shaquallah.shanks@tn.gov
 - CMP@health.ok.gov



Thank you!



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

The role of oral bacteria in COVID-19

We read with interest the Correspondence by Michael J Cox and colleagues,¹ highlighting the relevance of co-infections in the clinical outcomes and mortality of patients with coronavirus disease 2019 (COVID-19). We believe the role of oral bacteria in facilitating co-infections in COVID-19 is pertinent, yet overlooked. We concur with the need for whole-genome metagenomics to capture the data relevant to co-infections, but this should also warrant consideration for the bacterial species comprising the oral microbiome.

Poor oral hygiene is considered to be a major ecological pressure that steers complex microbial communities in the mouth into dysbiosis. Ecological shifts in a dysbiotic ecosystem favour an increased prevalence of pathogenic oral bacteria. Daily activities such as mastication, flossing, and tooth brushing can induce bacteraemia, which facilitate haematogenous dissemination of oral bacteria and inflammatory mediators, inducing systemic inflammation in some patients. Individuals with periodontal disease show micro-ulcerated sulcular epithelia and damaged periodontal tissues, and thus seem more susceptible to bacteraemia. Good oral hygiene is therefore essential for controlling the total bacterial load in the mouth, maintaining or re-establishing the oral symbiotic equilibrium, and preventing the dissemination of oral bacteria to other sites in the body.²

Metagenomic analyses of patients infected with severe acute respiratory syndrome coronavirus 2 have frequently reported high reads of

cariogenic and periodontopathic bacteria,³ endorsing the notion of a connection between the oral microbiome and COVID-19 complications. Evidence suggests that periodontopathic bacteria are involved in the pathogenesis of respiratory diseases, such as those implicated in COVID-19, and are associated with chronic inflammatory systemic diseases including type 2 diabetes, hypertension, and cardiovascular disease. These diseases are frequently reported comorbidities associated with an increased risk of severe complications and death from COVID-19. Suggested mechanisms that might explain the role of oral bacteria in the pathogenesis of respiratory infections are via the aspiration of oral pathogens into respiratory organs, the alteration of the respiratory epithelium by periodontal-associated cytokines, and oral mucosal surfaces rendered to promote the adhesion of respiratory pathogens.⁴ Numerous studies^{5,6} report that oral hygiene interventions in patients with pneumonia have substantially improved clinical outcomes and reduced mortality. One in ten pneumonia-related deaths of older nursing home residents (≥ 65 years) are considered preventable by improving oral hygiene.⁷ Improved oral care has been shown to significantly reduce the incidence of ventilator-associated pneumonia in patients in an intensive care unit.⁸ Further metagenomic studies and clinical trials are required for the characterisation of co-infections in COVID-19 and the potential connection between the role of the oral microbiome and complications arising from the virus.

These data are vital to ascertain whether poor oral hygiene is a

modifiable risk factor for COVID-19 complications and if there is a place for the promotion of good oral hygiene as a preventive public health intervention during the pandemic.

We declare no competing interests.

We thank Dr Thuy Do (University of Leeds) for editing and providing feedback on this Correspondence.

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Oral hygiene risk factor

Sir, I would like to inform readers about the potential connection between high bacterial load in the mouth and complications associated with COVID-19 infection.

Oral hygiene should be improved during a COVID-19 infection in order to reduce the bacterial load in the mouth and the risk of a bacterial superinfection. We recommend that poor oral hygiene be considered a risk to COVID-19 complications, particularly in patients predisposed to altered biofilms due to diabetes, hypertension or cardiovascular disease. Bacteria present in patients with severe COVID-19 are associated with the oral cavity, and improved oral hygiene may reduce the risk of complications. Whilst COVID-19 has a viral origin, it is suspected that in severe forms of the infection, bacteria plays a part, increasing the chance of complications such as pneumonia, acute respiratory distress syndrome, sepsis, septic shock and death.¹

The development and severity of complications following a COVID-19 infection depend on numerous host and viral factors that will affect a patient's immune response. Whilst

80% of patients with COVID-19 infections have mild symptoms, 20% progress to have a severe form of infection associated with higher levels of inflammatory markers (Interleukin 2, 6, 10) and bacteria.^{2,3} They also exhibit a remarkably higher neutrophil count and lower lymphocyte count than in mild patients.⁴ A high neutrophil count is abnormal for a viral infection, but common for a bacterial infection, suggesting that in severe cases of COVID-19, bacterial superinfection is common.

The three main comorbidities associated with an increased risk of complications from COVID-19 are diabetes, hypertension and cardiovascular disease.⁵ These comorbidities are also associated with altered oral biofilms and periodontal disease. Periodontopathic bacteria are implicated in systemic inflammation, bacteraemia, and pneumonia.⁶ Bacteria present in the metagenome of patients severely infected with COVID-19 included high reads for *Prevotella*, *Staphylococcus*, and *Fusobacterium*, all usually commensal organisms of the mouth.⁷ Over 80% of patients in ICU exhibited an exceptionally high bacterial load,³ and treatment has been successful with a dual regime of an antiviral and an antibiotic.⁸ It is

clear that bacterial superinfections are common in patients suffering from a severe case of COVID-19.

V. Sampson, London, UK

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