

How can dental aerosol generating procedures be carried out safely?

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Aim: to review the evidence related to several pre-determined key questions about dental AGPs to inform policy and clinical guidance.

Introduction

During the COVID-19 pandemic, a major concern for dental care has been the potential transmission of SARS-CoV-2 via aerosols created during many routine dental procedures. Other countries' recommendations about aerosol generating procedures (AGPs) varied considerably and were not informed by evidence. To provide greater rigor to decisions about how to conduct dental AGPs safely, SDCEP conducted a rapid review of evidence.

Methods

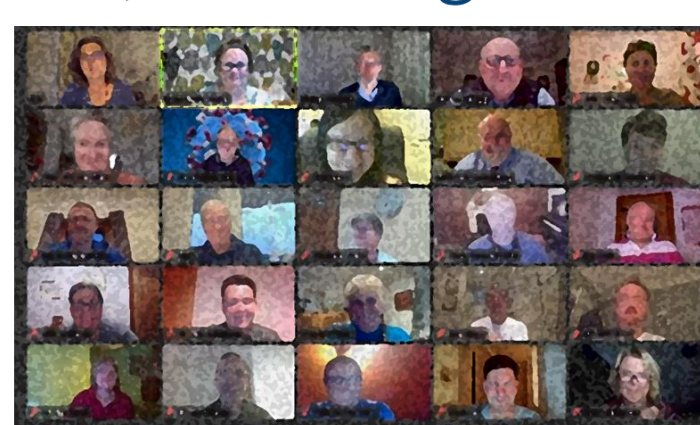
We adapted SDCEP's standard NICE-accredited guidance development methodology to rapidly review evidence and to reach Agreed Positions on several key questions.

Extensive literature searches were conducted by Cochrane Oral Health. A large multidisciplinary Working Group was convened with broad representation from across the UK.

Figure 1: Considered Judgment conducted online to reach Agreed Positions

Evidence, including its certainty

Benefits vs harms



Values & preferences

Applicability

Feasibility

Via numerous online meetings and polls, the Working Group used a considered judgment process informed by the GRADE Evidence-to-Decision framework (Figure 1) to reach agreed positions on several key questions. The Group also considered proposals to support implementation.

Working Group Membership

General Dental Practice
Dental Hygiene Therapy
Public Dental Service
Hospital Dental Service
Dental Public Health
Orthodontics
Oral Surgery
Paediatric Dentistry

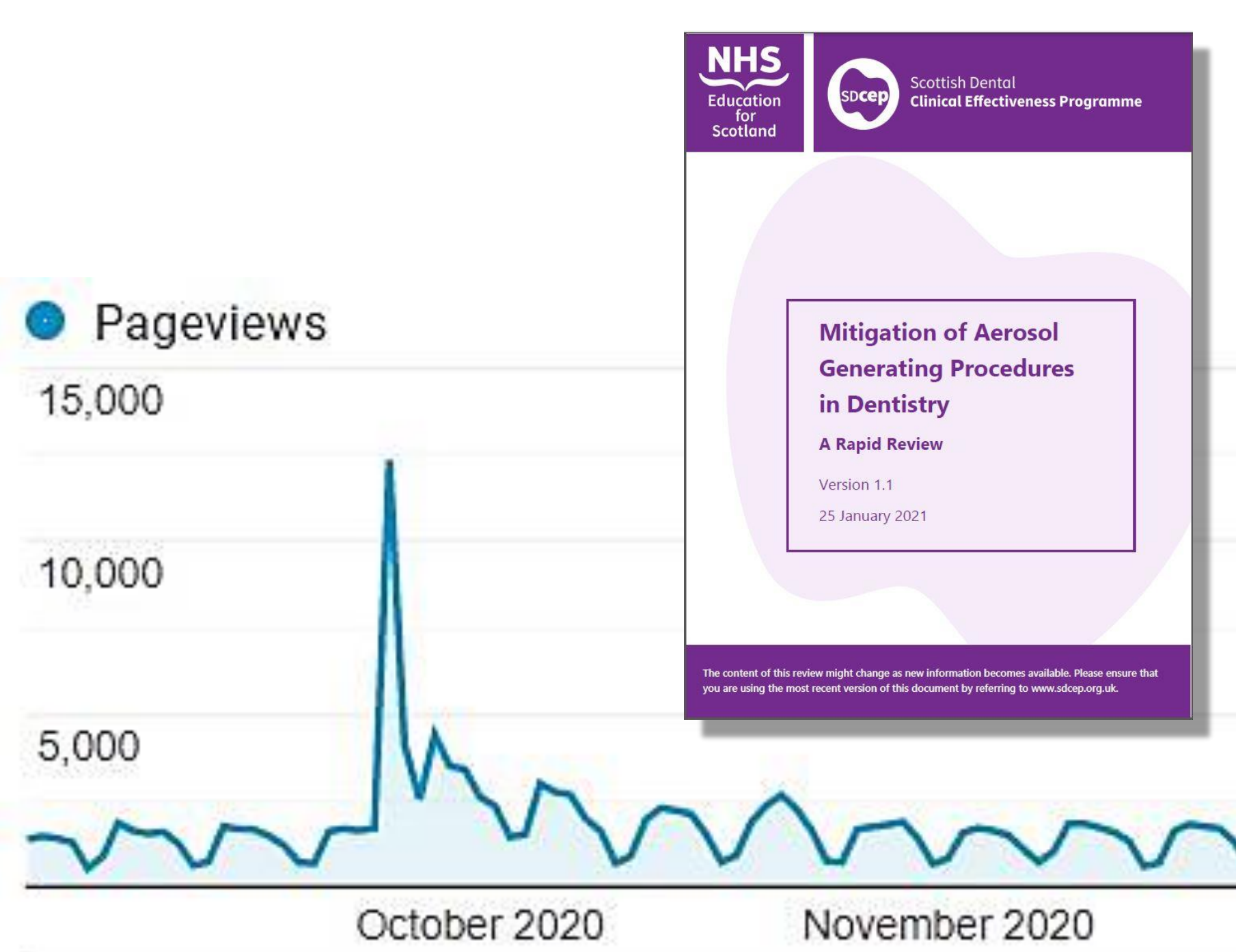
Restorative Dentistry
Cochrane Oral Health
Dental Faculties
Clinical Microbiology
Biosafety
National Physical Laboratory
Virology



Results

The rapid review was completed in 14 weeks, published on the SDCEP website and has been highly accessed (Figure 2). It was stressed that the rapid review is not guidance.

Figure 2: Rapid review publication and SDCEP website activity Sept-Nov 2020



Three groups of dental procedures were proposed based on the characteristics of the instruments used and assumptions regarding aerosol generation (Figure 3).

Based on the available evidence and the other factors considered, the Working Group reached Agreed Positions on each key question (Figure 4).

Figure 3: Categorisation of dental procedures according to aerosol production

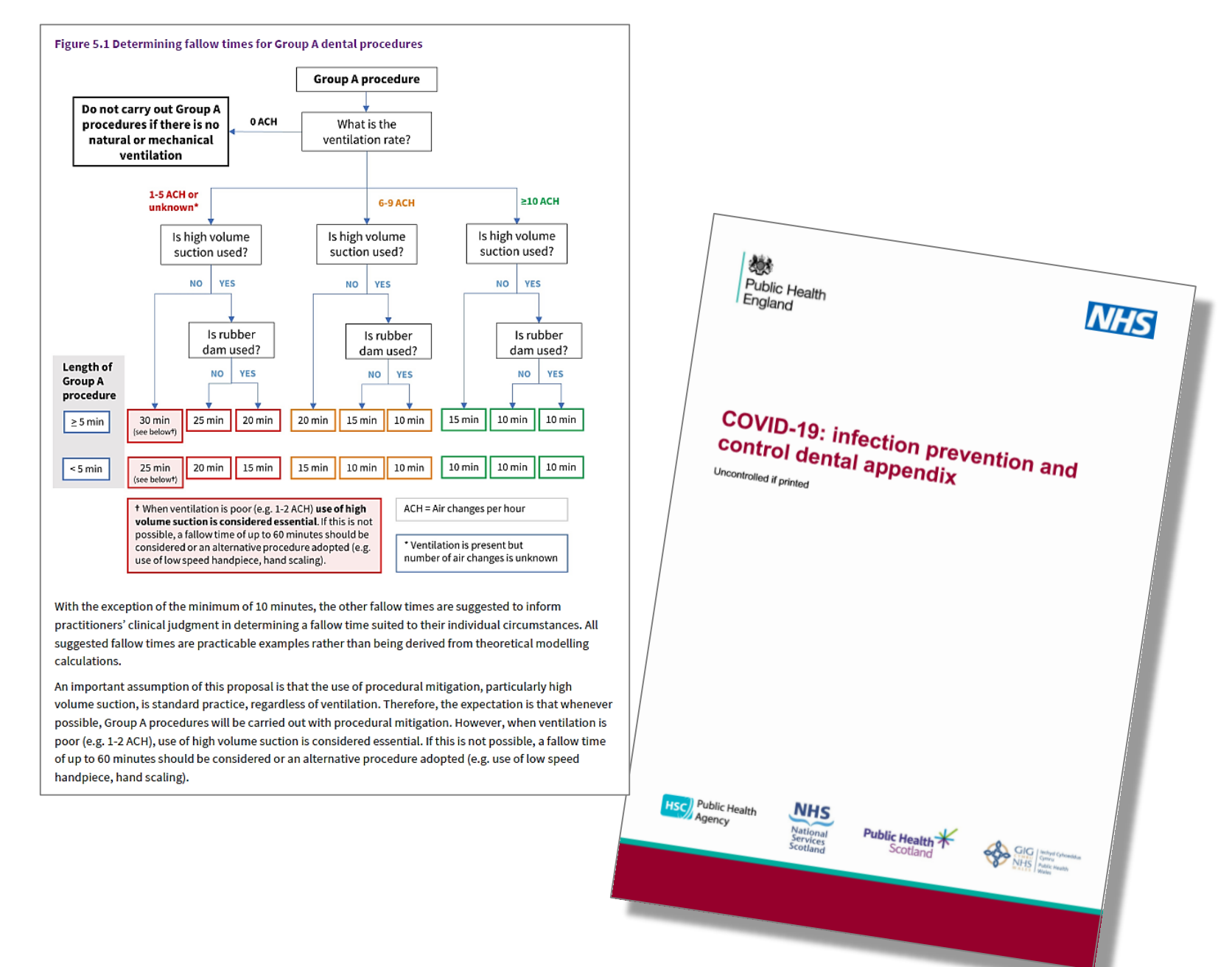
Group A	Group B	Group C
Definition: Dental procedures that produce aerosol particles. High volume suction used.	Definition: Dental procedures that produce aerosol particles. High volume suction used. High velocity instruments used.	Definition: Dental procedures that produce aerosol particles. High volume suction used. High velocity instruments used. No powered instruments used.
Prevalence: High prevalence. High volume suction used.	Prevalence: High prevalence. High volume suction used. High velocity instruments used.	Prevalence: High prevalence. High volume suction used. High velocity instruments used. No powered instruments used.
Key questions: High volume suction used. High velocity instruments used.	Key questions: High volume suction used. High velocity instruments used. High velocity instruments used.	Key questions: High volume suction used. High velocity instruments used. High velocity instruments used. No powered instruments used.
Examples of dental procedures: High volume suction used. High velocity instruments used.	Examples of dental procedures: High volume suction used. High velocity instruments used. High velocity instruments used.	Examples of dental procedures: High volume suction used. High velocity instruments used. High velocity instruments used. No powered instruments used.

Figure 4: Agreed positions within the rapid review

Agreed Positions of the working group were
to recommend: high volume suction, rubber dam, fallow time
to not recommend: pre-procedural antimicrobial mouth rinses, antimicrobial coolants, air cleaners

A pragmatic approach to determining fallow time was proposed and was subsequently incorporated into the UK's national infection prevention and control guidance (Figure 5). The overall reduction in the recommended fallow time should facilitate an increase in the capacity of dental healthcare.

Figure 5: Fallow time determination



Conclusion

By adapting its guidance development methodology, SDCEP has reviewed the evidence regarding dental AGPs and enabled an expert group to rapidly reach agreed positions on an issue of crucial importance for the remobilisation of dental services.

About SDCEP

The Scottish Dental Clinical Effectiveness Programme (SDCEP), within NES's Dental Directorate, provides user-friendly, evidence-based guidance on topics identified as priorities for oral health care.

SDCEP has gained a strong reputation for using a robust methodology to deliver reliable guidance.

In 2016, SDCEP's guidance development process was accredited by the National Institute for Health and Care Excellence (NICE), making SDCEP the only dental organisation with this status.