

Media Release

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ESCMID Global 2026

## **Improving oral care more than halves hospital-acquired pneumonia risk, major trial finds**

**(Monday, 20 April 2026, Munich, Germany) A landmark trial presented today at ESCMID Global 2026 shows that improving oral hygiene for hospital patients can reduce the risk of non-ventilator-associated hospital-acquired pneumonia (NV-HAP) by 60%.<sup>1</sup>**

The study, involving over 8,000 patients, is the only multi-centre randomised controlled trial (RCT) in a hospital setting to evaluate this approach and the largest RCT in this setting to date.

NV-HAP is a form of pneumonia that develops at least 48 hours after hospital admission in patients who are not receiving mechanical ventilation.<sup>2</sup> It is a common healthcare-associated infection linked to longer hospital stays, higher healthcare costs and increased mortality.<sup>2</sup> Despite occurring more frequently and being equally as dangerous as ventilator-associated pneumonia (VAP), it has historically received far less research attention.<sup>2,3</sup>

To address this gap, researchers conducted the Hospital Acquired Pneumonia Prevention (HAPPEN) Study, a multi-centre, stepped-wedge cluster RCT across nine wards in three Australian hospitals over a 12-month period, concluding in August 2025. Each ward introduced the intervention every three months. In total, 8,870 patients were included in the study, of whom 4,347 were in wards during the intervention period.

In the intervention phase, patients were provided on admission with a toothbrush, toothpaste, educational materials and access to additional online resources. Healthcare staff received onsite training, access to online resources and practical support to improve the delivery of oral care. Control was usual practice.

The programme led to a substantial improvement in oral hygiene practices among hospital patients. The proportion of patients receiving oral care increased from 15.9% in the control to 61.5% in the intervention, with audits showing oral care was undertaken an average of 1.5 times per day.

Importantly, exposure to the intervention was associated with a statistically significant reduction in NV-HAP risk. Incidence fell from 1.00 to 0.41 cases per 100 admission days at-risk – representing an approximately 60% reduction.

“One of the most encouraging findings from this study was the scale of improvement we were able to achieve,” commented lead study author Professor Brett Mitchell, Avondale University, Australia. “Through earlier work, we identified several barriers in hospitals, including limited access to suitable products, low awareness of the link with pneumonia and competing clinical priorities. By addressing these through education, practical resources and conversations with patients on admission, we were able to substantially increase oral care in hospital wards.”

Explaining why improved oral hygiene can reduce pneumonia risk, Professor Mitchell said, “Typically, NV-HAP is the result of fluids from the mouth or throat entering the lungs, with hospital-associated respiratory pathogens more frequently detected in patients who are unable to clear oral secretions. These infections are thought to arise largely from a patient’s own microbiota rather than person-to-person transmission. Improving oral hygiene helps reduce these pathogens in the mouth, potentially lowering the risk of subsequent infection.”

Looking ahead, Professor Mitchell commented, “Guidelines already recognise the role of oral care in preventing NV-HAP, but the evidence supporting these recommendations has been limited. Our study now provides robust evidence from a hospital setting. The next step is to better understand how structured programmes can be effectively implemented and sustained across hospital wards.”

## **ENDS**

### **Notes to editors:**

A reference to ESCMID Global must be included in all coverage and/or articles associated with this study.

For more information or to arrange an expert interview, please contact the ESCMID Press Office at: [communication@escmid.org](mailto:communication@escmid.org)

### **About the study author:**

Professor Mitchell is an internationally renowned clinician-researcher in the field of infection prevention and control. He has a particular interest in providing high-quality evidence to inform infection control practice, leading many clinical trials in this area. Based in Australia, he has received several prestigious awards, including an Order of Australia.

### **About the European Society of Clinical Microbiology and Infectious Diseases:**

The European Society of Clinical Microbiology and Infectious Diseases (ESCMID) is the leading society for clinical microbiology and infectious diseases in Europe. ESCMID is proud to unite over 13,500 members as well as 45,000 affiliated members through 77

national and international affiliated societies. ESCMID's mission is to champion medical progress in infection for a healthier tomorrow and plays an important role in emerging infectious diseases and antimicrobial resistance education and research.

Website: [www.escmid.org/](http://www.escmid.org/)

#### **References:**

1. Mitchell, B., White, N., Russo, P., et al. (2026). The hospital acquired pneumonia prevention (HAPPEN) study: a multi-centre randomised controlled trial. Oral presentation. *ESCMID Global 2026*.
2. Pittaway, H., Grudzinska, F., Livesey, A., et al. (2024). Management of non-ventilated hospital acquired pneumonia. *Clinical Infection in Practice*, 21, 100350.
3. Mitchell, B. G., Russo, P. L., Cheng, A. C., et al. (2019). Strategies to reduce non-ventilator-associated hospital-acquired pneumonia: A systematic review. *Infection, Disease & Health*, 24(4), 229–239.