

The Vision of Human-Centric Ventilation: from Comfort to Patient Safety

Workshop “Are We Ready for Human-Centric Ventilation in Healthcare Facilities? Bridging Research, Practice, and Implementation”

ROOMVENT 2026, Prague

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Motivation



- Over 4 million patients are estimated to acquire a healthcare-associated infection (HAI) in the EU each year
- Hospital environment is responsible for 20% of all HAI
- The typical cost of one HAI varied from 20,000-60,000 Euros



Why ventilation is needed ?

- **Ventilation in hospitals is critical for patient safety, staff protection and overall care quality**

- Dilutes airborne pathogens
- Removal of hazardous substance
- Odor control
- Pressure control by room type
- Filtration and air cleaning
- Thermal comfort and humidity control



Infections are very expensive



Improved indoor environment of a hospital building can reduce costs associated with airborne illnesses by 9%-20%

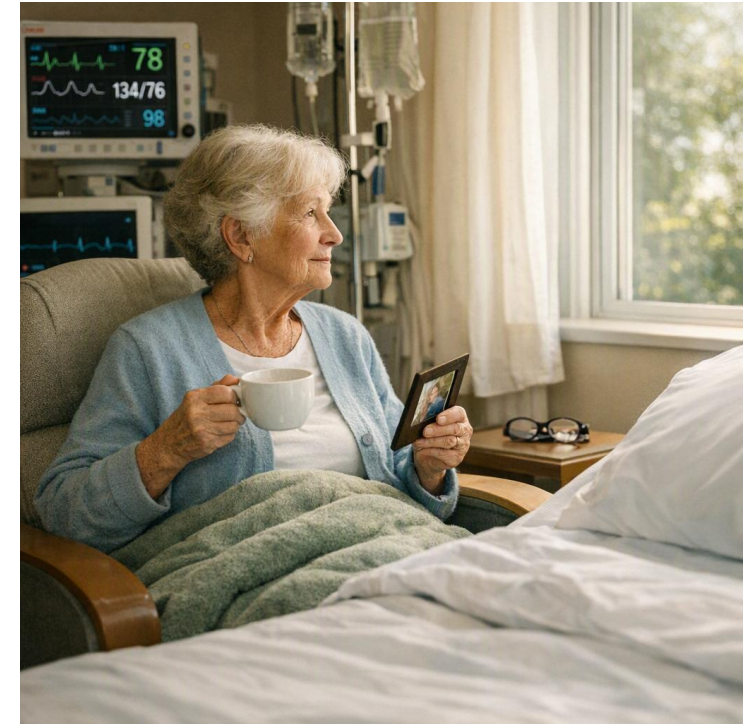


High Performing Ventilation is a solution



There is need for innovate ventilation solutions for

- reducing infection risk,
- enhancing thermal comfort and safety,
- and increasing energy efficiency.



Human-Centric Ventilation in Healthcare Facilities

Localized and personalized ventilation (source control)



- Ventilated headboards and bed canopies: **capture and exhaust exhaled aerosols** at the patient,
- Personalized ventilation for staff: **directed clean-air** at workstations, nurse stations, and check-in counters to create clean breathing zones.
- Buoyancy or momentum flux driven **zoning for partial enclosures** to separate clean and pollutant areas.



Human-Centric Ventilation in Healthcare Facilities



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Thank you!



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