

*Interactive educational sessions to  
improve adherence to hand hygiene  
technique: a multicenter  
improvement project*

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## *The situation in Italy*

- Healthcare Associated Infections (HAIs) incidence rate of 5–10% and a death rate of up to 20–30%
- Hand hygiene compliance rates ranging from 20% to 84%
- Interactive educational sessions can improve adherence





# *Aim of the project*

To evaluate the feasibility and the effectiveness of a hand hygiene educational intervention, together with the use of an AI-driven scanner, in terms of:

➤ compliance to the technique



➤ knowledge and perceptions





# *Materials and Methods*

- Multicenter quality improvement project
  - Galliera hospital – Genova
  - San Martino hospital - Genova
  - University hospital of Padova
- Nurses and healthcare assistant of three areas:
  - Medical wards
  - Surgical wards
  - Intensive Care Units



# *Educational intervention*

## Contents (ANIPIO)

- Part 1 - Definition and impact of HAIs
- Part 2 - Main modes of germ transmission in healthcare facilities with a focus on transmission through the hands
- Part 3 - Hand hygiene and prevention of HAIs
- Part 4 - How, when and why to perform hand hygiene

Interactive part with Hand-In-Scan™  
Simmelweis Scanner™



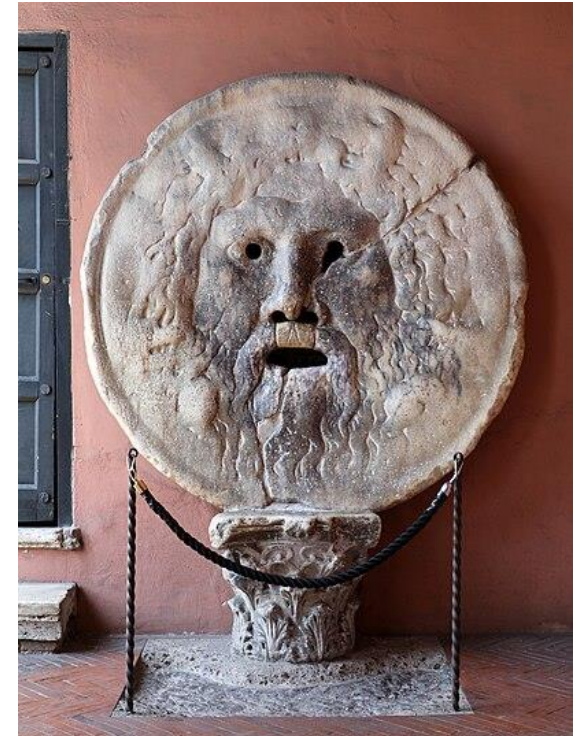
# Scanner

## Procedure

- After applying training gel, the user places each hand into the scanner
- Areas of the hands are recognized and captured by the scanner at the pixel level
- AI analysis detects anomalies in the scan (e.g. rings)
- A 3D overlay of clean and dirty areas is displayed on the user's hands through Augmented Reality
- The total score is displayed with a Pass/Fail judgement, referring to the set standards

## Data

- Percentage of coverage and test passed (y/n) divided by:
  - Left palm
  - Right palm
  - Left dorsum
  - Right dorsum
- Ring detected (y/n)
- Hand size (mm<sup>2</sup>)



# *Other measurements and timeline*



- Questionnaires
- Scanner

- Scanner (Unit)

- Scanner (Unit)

- Questionnaires
- Scanner

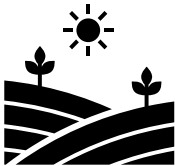
- Hand Hygiene Knowledge Questionnaire for Health-Care Workers - *WHO*
- Perception Survey for Health-Care Workers - *WHO*



# *Expected results*



Feasibility and effectiveness of this type of educational intervention



Differences between settings



Compliance «trends» in a knowledge retention perspective

# *Take home messages*

- Compliance to hand hygiene technique is still lacking
- New interventions are needed
- How often?





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