

Digital Solutions for a Better Hand Hygiene

Tamás HAIDEGGER, PhD
Associate professor, Óbuda University
Founder, CEO, HandInScan



200

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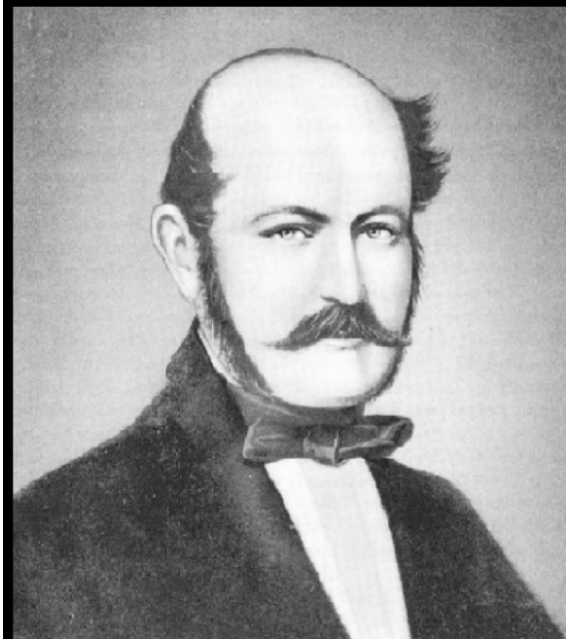
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Innovator and disruptor



2015, 2018

UNESCO

Semmelweis Year



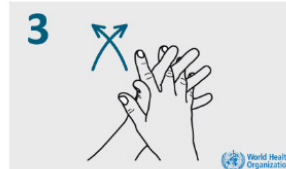
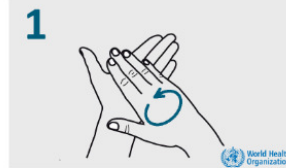
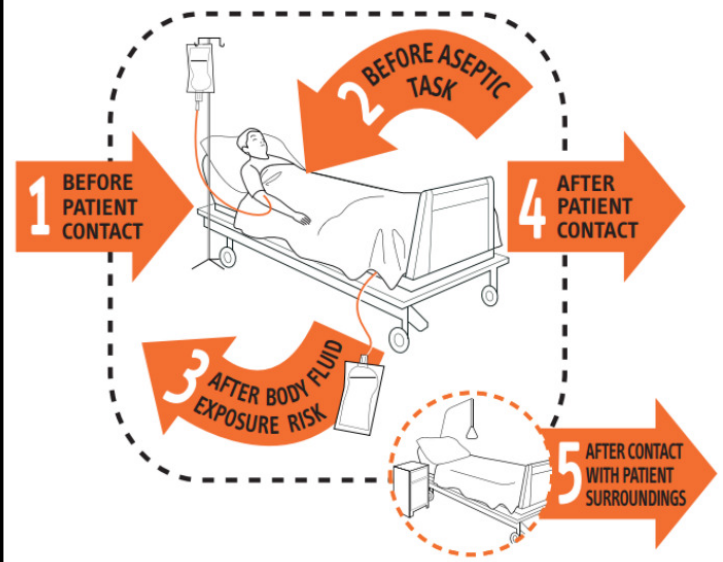
United Nations
Educational, Scientific and
Cultural Organization

Proper hygiene



Compliance & hand rubbing

Your 5 moments for HAND HYGIENE





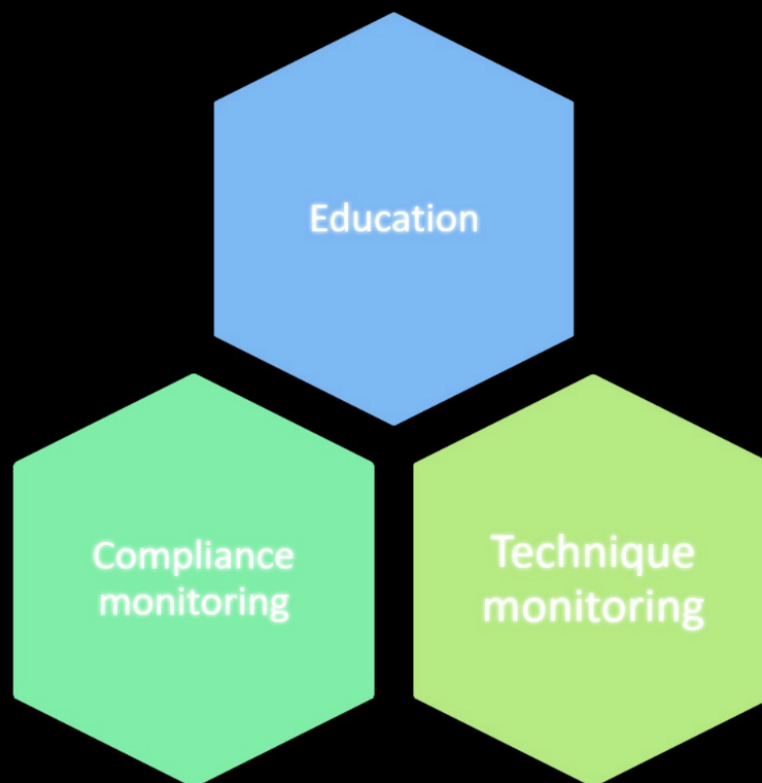
["The impact of Healthcare-Associated Infections (HAI) in Pennsylvania Hospitals" 2012]

The key



Technology-induced behavioral change

Hand hygiene elements



Compliance

Number of **observed** hand hygiene events
Total **recommended** number of hand hygiene events $\times 100$



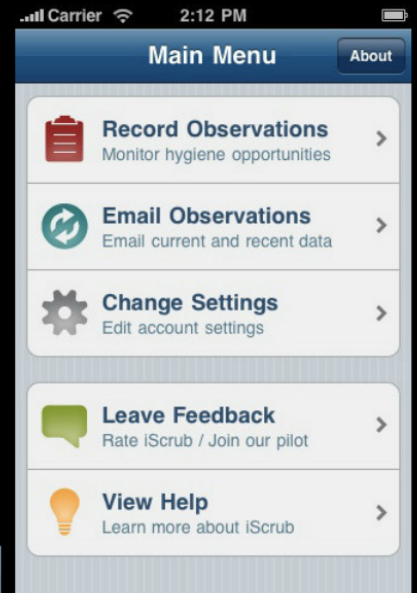
Compliance monitoring

- Direct monitoring (WHO standard)
- Self monitoring
- Observation by the patient
- Consumption monitoring
- Electronic Compliance Monitoring (ECM)



[Fries et al. Monitoring hand hygiene via human observers: how should we be sampling? 2011]

Digital observation tools



Compliance monitoring

Video-based observation



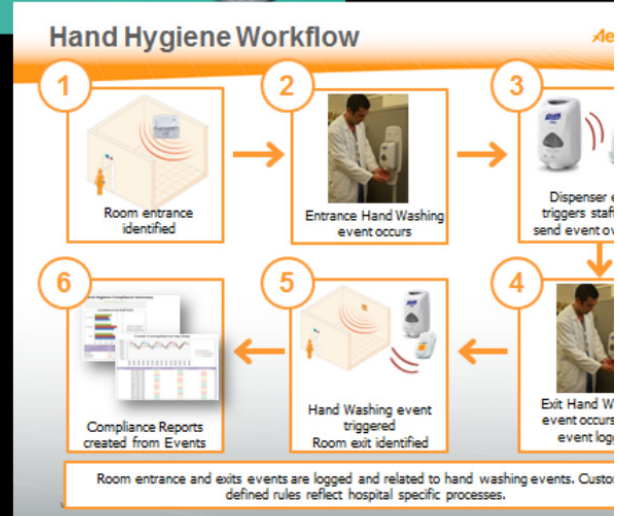
OHCP
CS=94% WR=90% MR=88%

Arrowsight[®]
Vision for Peak Performance. *Every Site, Every Shift.*

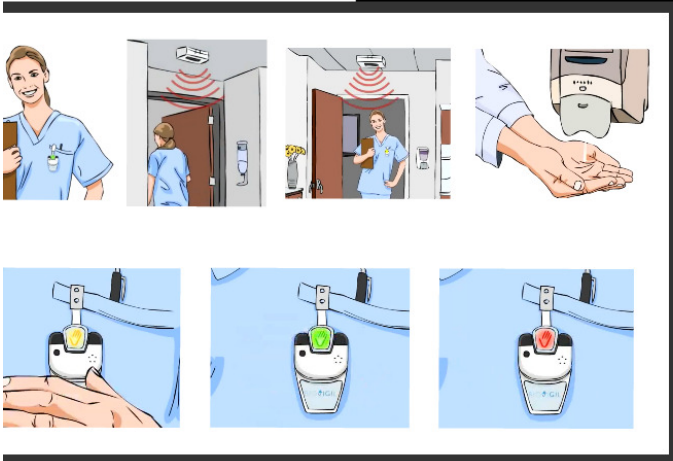
Keeping the human in the loop

Compliance monitoring

Real-time location tracking



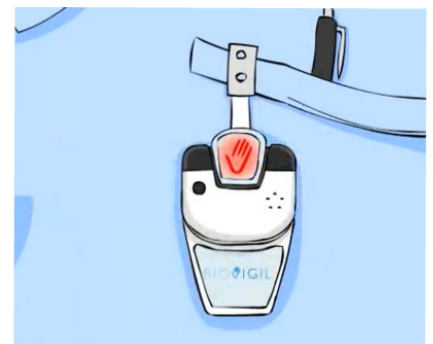
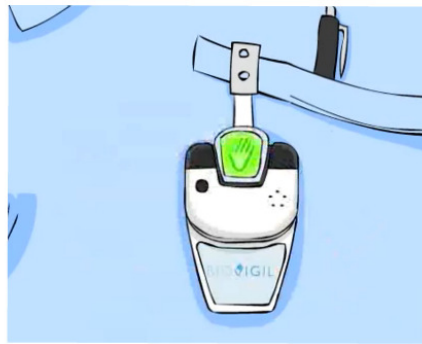
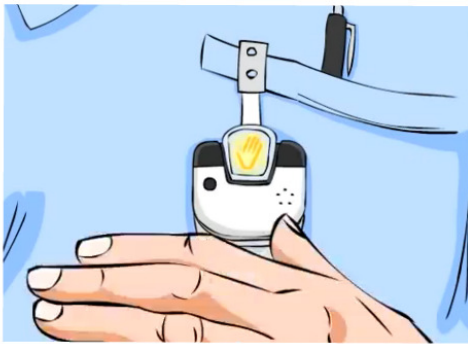
Compliance monitoring



HYGreen



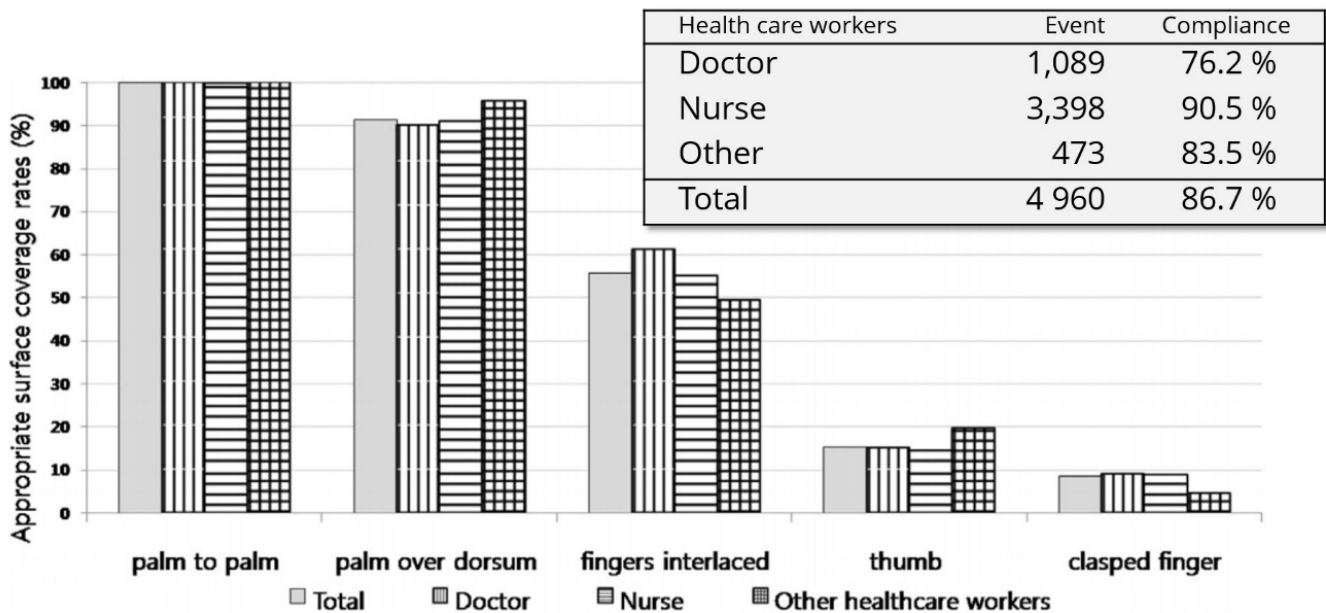
BIOVIGIL





Compliance is not enough

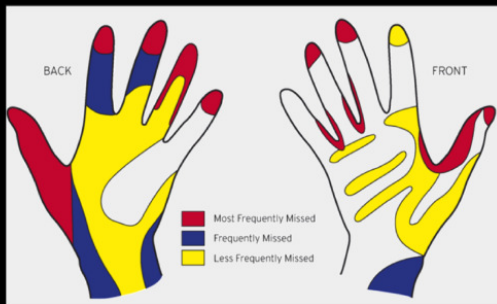
ASAN MEDICAL CENTER, Seoul, Korea (2012 April-June)



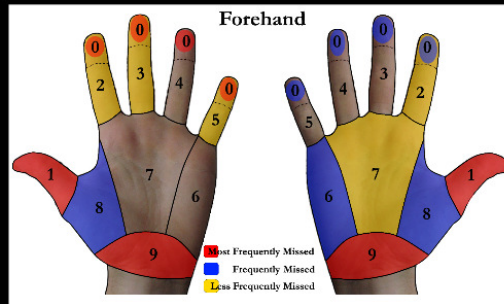
Source: Park: Assessment of the appropriateness of hand surface coverage for health care workers according to World Health Organization hand hygiene guidelines, *American Journal of Infection Control* 42 (2014) 559-566

American Journal of Infection Control 42 (2014) 559-566

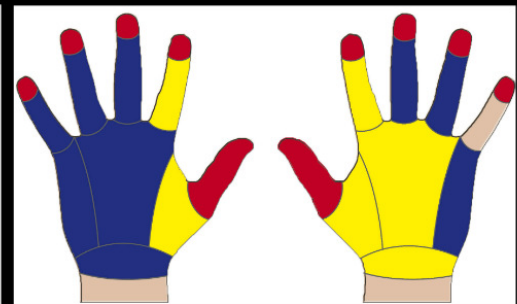
Most often omitted areas



Taylor et al. (1978)



Haidegger et al. (2011)



Haidegger et al. (2014)

25-32% fails to properly rub in

Education of rubbing UV dye and black box



HUG
Hôpitaux Universitaires de Genève

B | BRAUN
SHARING EXPERTISE

Dermalux
● ● ● ●



G L O W T E

Laboratoires
ANIOS
Le professionnel de la désinfection

GERM

 **Prezi**

Education of technique

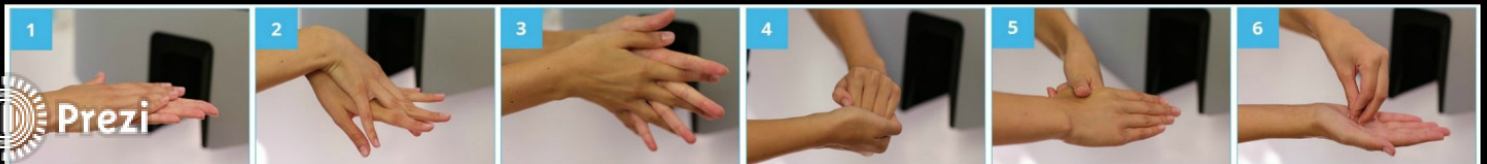
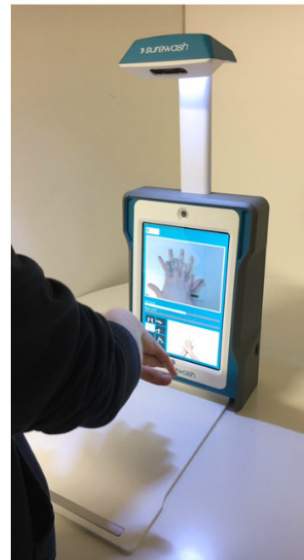
surewash



3D camera

Display for the results

Mobile platform





Simmelweis

Hand Hygiene Scanner



reddot award 2015
winner



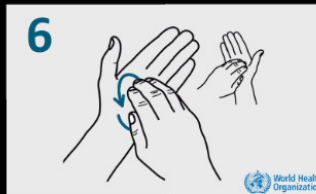
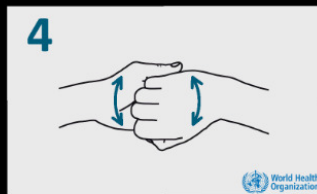
passed



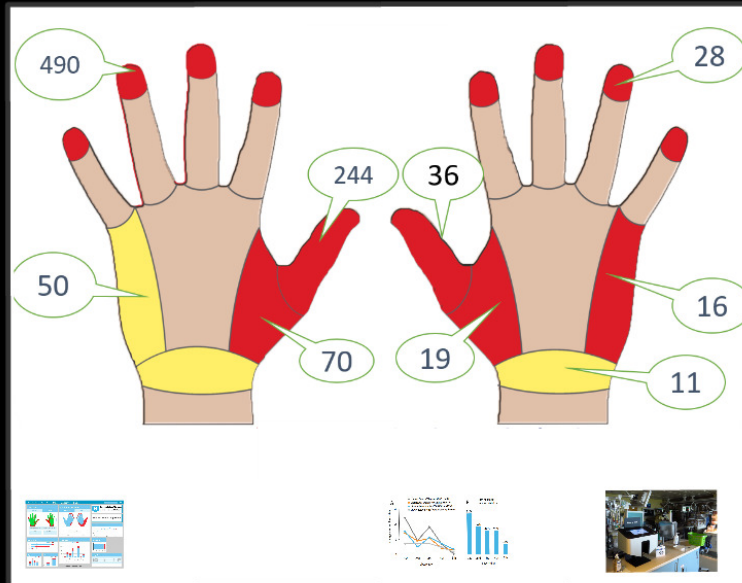
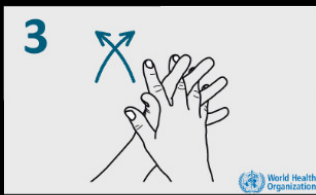
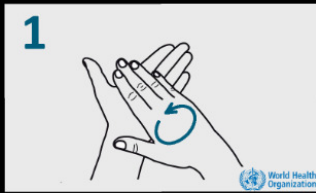
failed

Analyze each step of hand rubbing

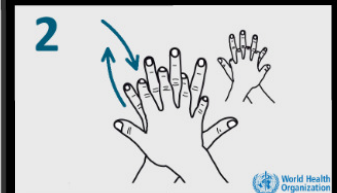
fingers, fingertips



palm, wrist



back, thumb



Recent scans

Backhand

Forehand



Current measurement / Total number of measurements: 8 / 398

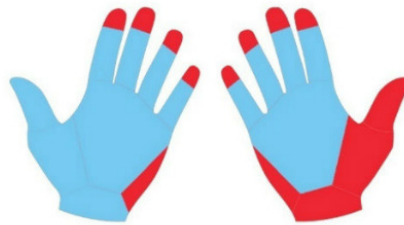
Left coverage: 73%
Right coverage: 68%

CH RFID: #22031
22/07/2016

Most frequently missed areas

Backhand

Forehand



Most frequently missed
Less frequently missed

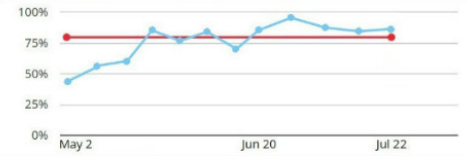
Regions: 0: 17% 8: 5% 0: 28% 1: 22% 5: 11%



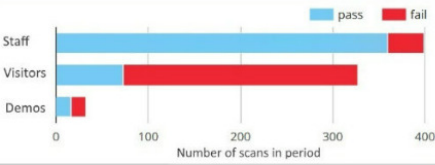
Hand-in-Scan
Hand Hygiene Matters

Your Institution's logo here

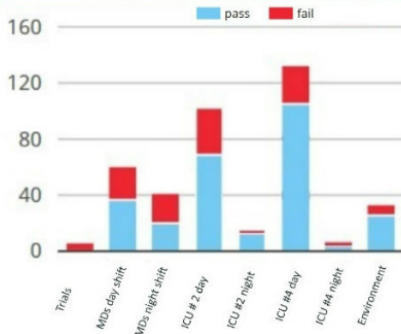
Hand hygiene progress



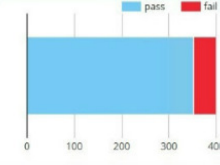
Departments



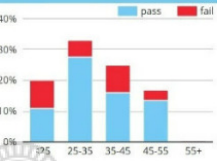
Occupations



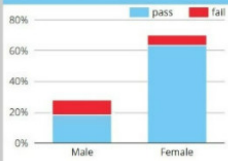
Total scans



Age



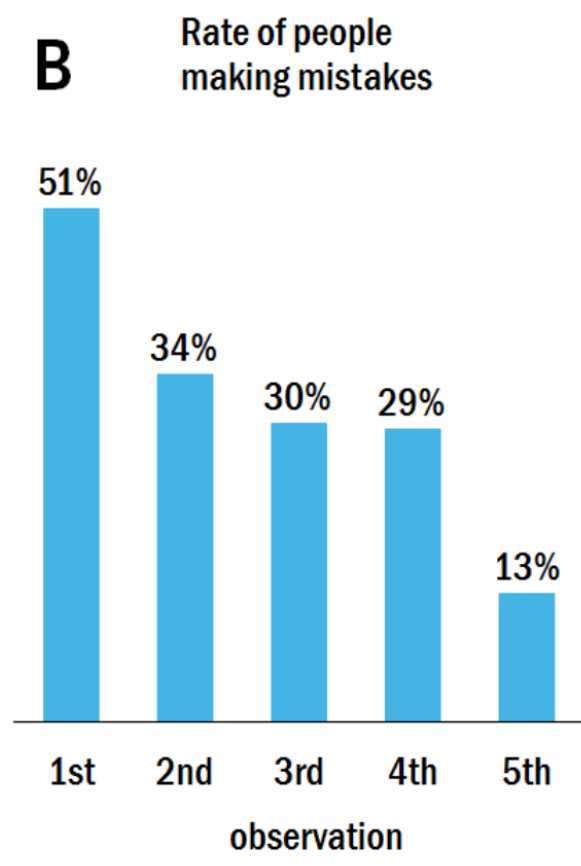
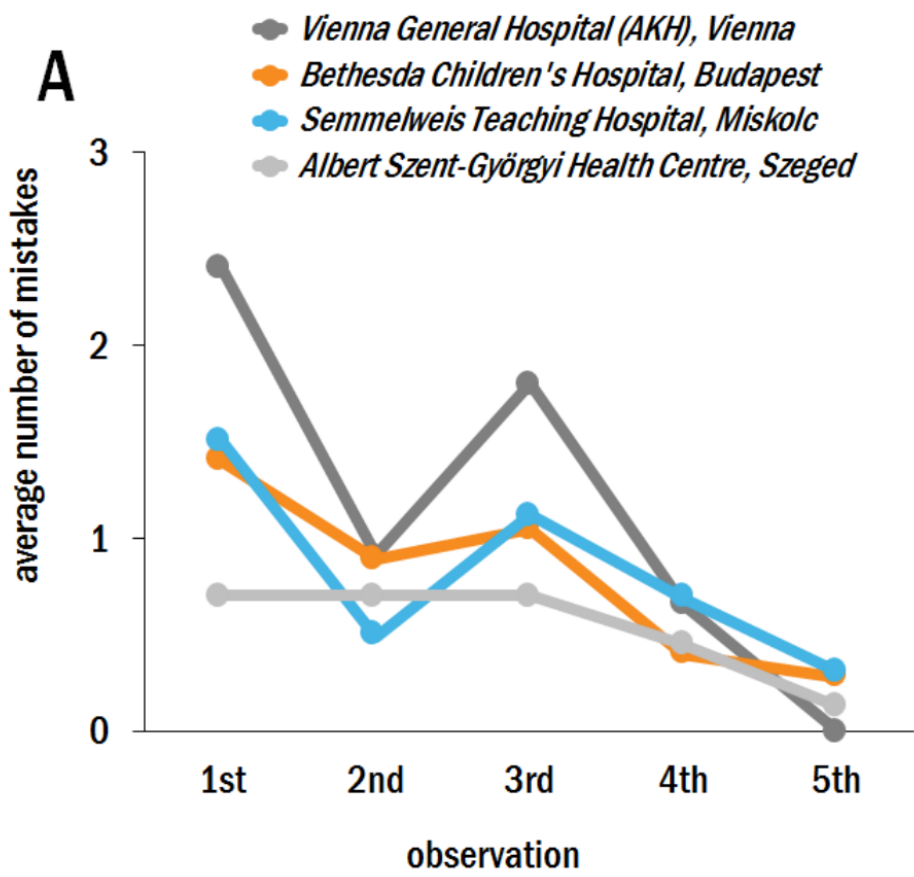
Gender

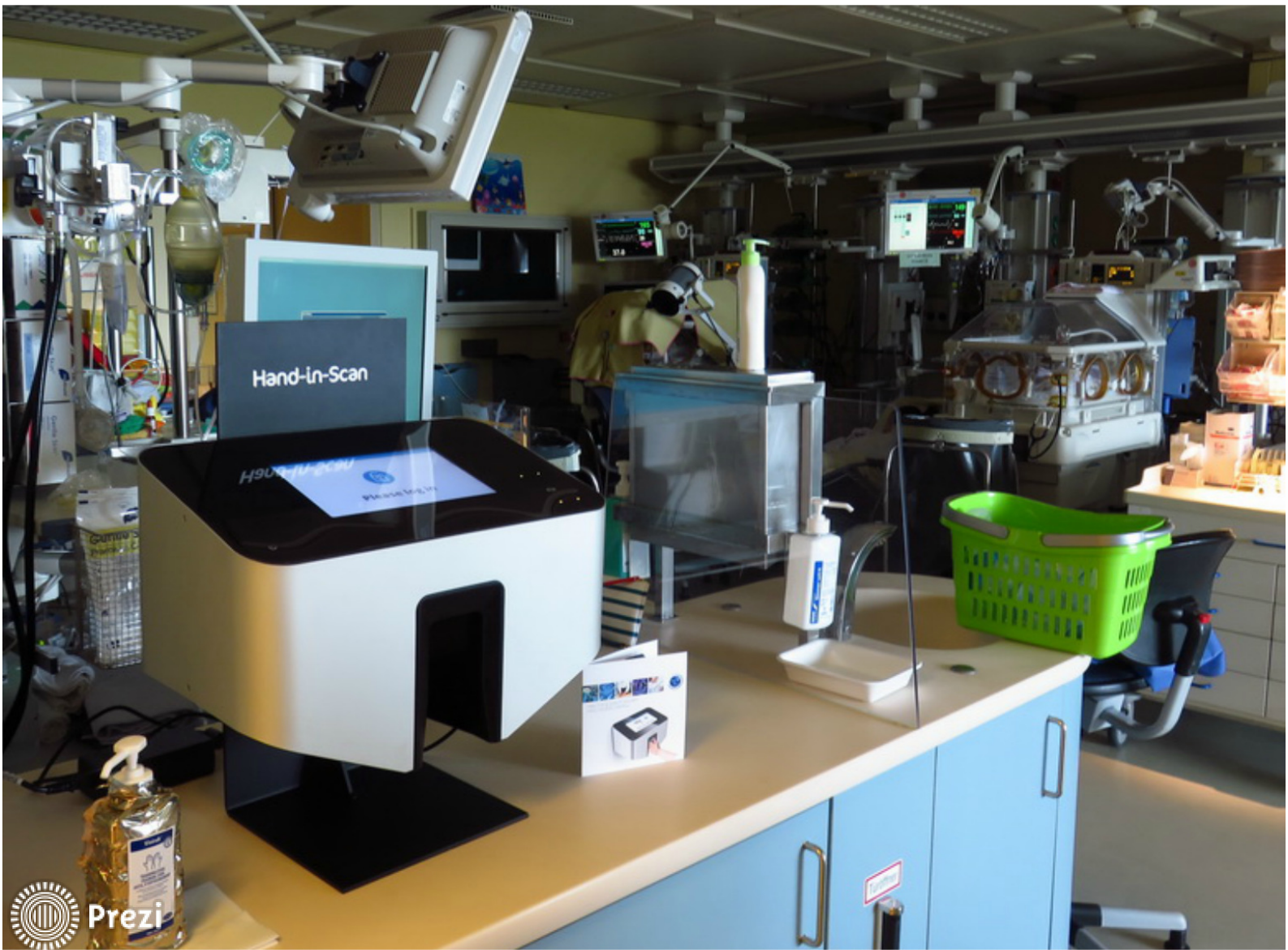


Top performers

RFID	Department	Percentage	Events
RFID #22033	ICU #4	100%	11 events
RFID #21997	ICU #2	96%	44 events
RFID #22038	ICU #4	92%	53 events
RFID #20355	ICU #4	91%	89 events
RFID #19999	Environ.	88%	39 events









"An ounce of prevention is worth a
pound of cure."



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