

Veraz Ltd

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Infection Preventing & Care
Quality Technology



Veraz Ltd

- Is an SME based in Lancaster and employs 15 mainly technical staff
- Has been developing touch and other innovative technology for 5 years
- Invested c£1.75m over 4 years in the Green Badge project largely through the SBRI
- Successfully completed and published initial clinical trial under the supervision of Professor Peter Wilson, Consultant Microbiologist, UCLH
- Has been shown to raise Hand Hygiene compliance by 200%





Effect of a contact monitoring system with immediate visual feedback on hand hygiene compliance

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SUMMARY

Background: Hand hygiene compliance is traditionally monitored by visual methods that are open to bias and strictly limited in time and place. Automatic monitoring may be more effective for infection control as well as performance management.

Aim: To establish accuracy and acceptability of an automatic contact monitoring system for hand hygiene.

Methods: Monitoring equipment was installed across 55 beds in three wards, and included modified identity badges, bedside furniture, sinks and alcohol gel dispensers. Badges were in near-skin contact (through uniform) and could detect alcohol vapour. All devices were linked by wi-fi. A traffic light system on the badge provided immediate feedback to staff and patients on the hand hygiene status of a member of staff on approach to a patient.

What does the Veraz *Green Badge* technology do?

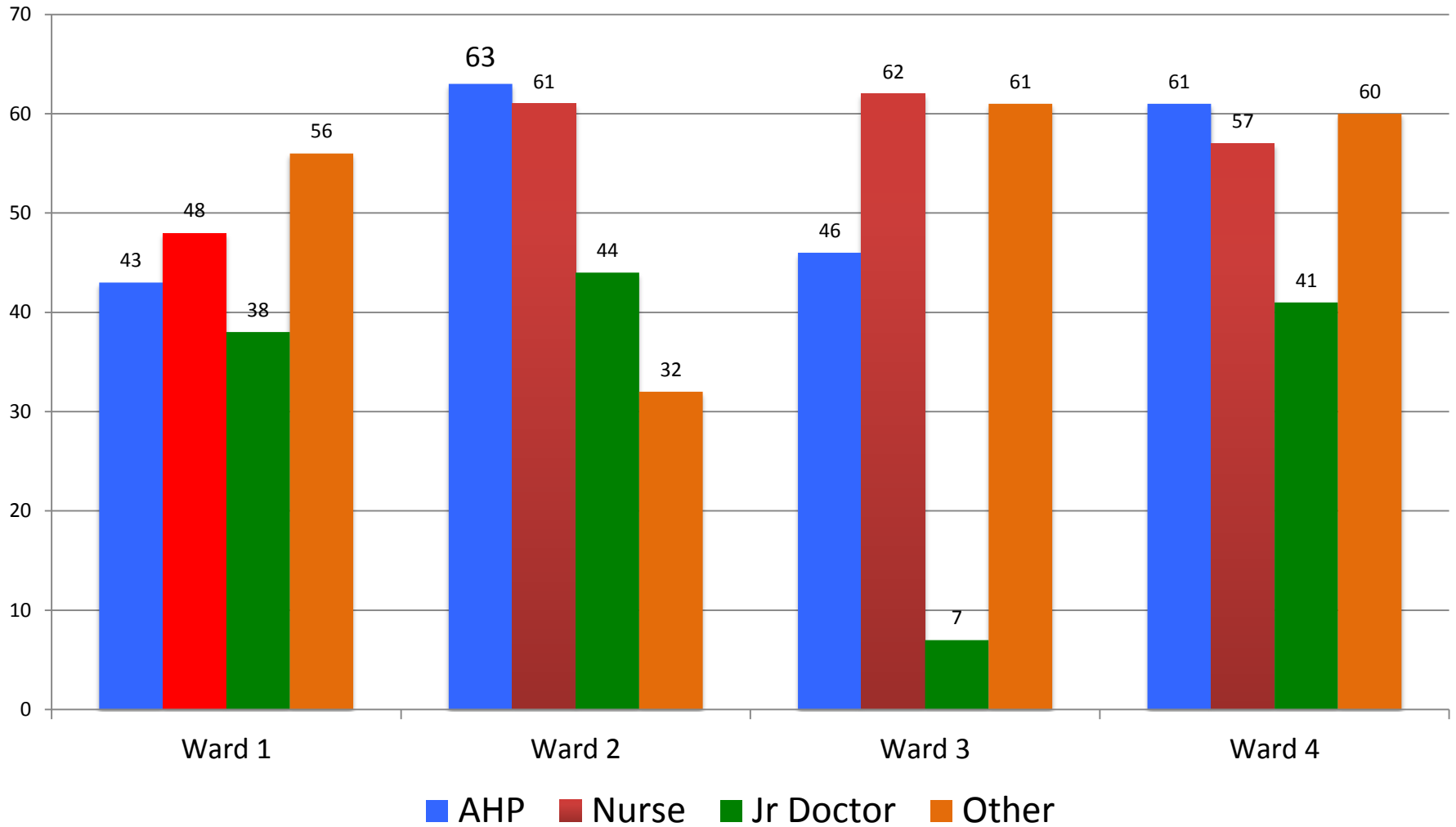
- Tracks person/person contact and person/equipment contact
- Detects use of alcohol-based hand rub and measures for a satisfactory cleanse
- Monitors the frequency, timing and efficacy of sink-based hand wash cleansing
- Alerts non-compliance on a real-time basis 24/7
- Can work where visual observation do not
- Extensive support for Root Cause Analysis
- Provides accurate and timely feedback to staff when training for hand cleansing techniques

Veraz Infection Prevention System

- Captures the majority of near-patient hand hygiene opportunities and automatically determines which are compliant
- Detects satisfactory use of alcohol-based hand rub
- Monitors the frequency, timing and efficacy of sink-based hand wash cleansing
- Alerts non-compliance on a real-time basis 24/7
- Tracks person/person contact and person/equipment contact
- Obviates the need for observational audit
- Provides extensive support for Root Cause Analysis
- Provides precise and consistent feedback to staff when training for hand cleansing techniques



% Compliance by Staff Group and Ward



Badge worn by healthcare worker that communicates with other devices to identify location and touch - also inbuilt in the badge are the LED traffic lights and alcohol detection device

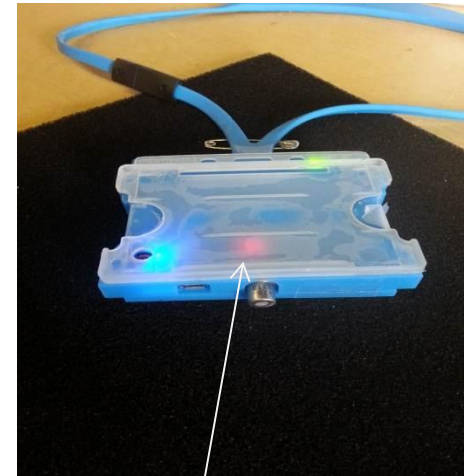


Green LED
Traffic
Light



Personal ID
badge over
Green Badge
device

Sensors in the lanyard lays near/on back of neck and use the body to act at the conduit in communication with devices via the badge



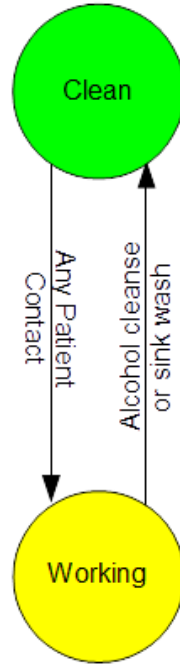
Alcohol
detection
device

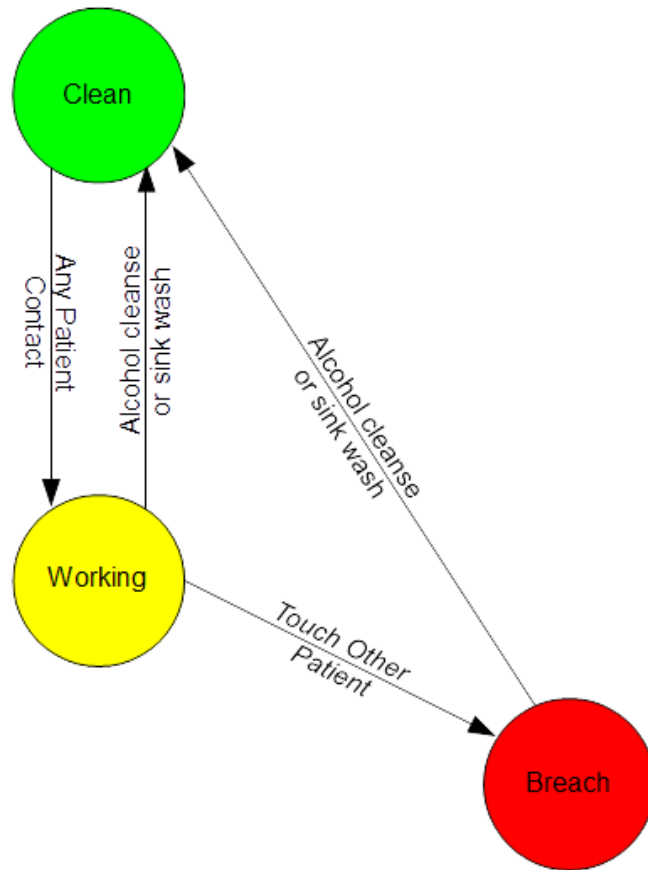
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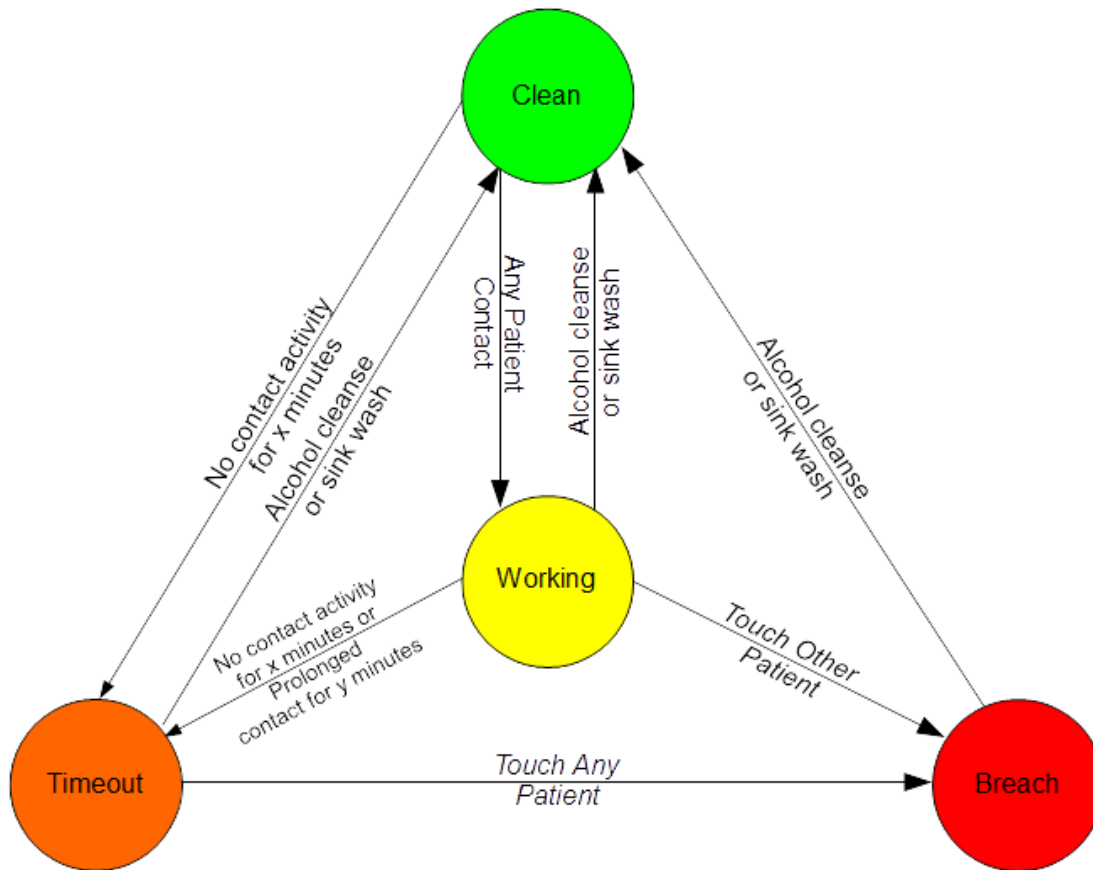


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Cost of HCAI to the NHS

NHS HCAI Cost Data	Estimated Cost per Infection
Clostridium Difficile ^{1,2}	£10,000
MRSA ²	£7000
MSSA ²	£7000
E Coli ²	£7000
GRE ²	£7000
VRE ²	£7000
Norovirus ²	£7000
PVL-SA ²	£7000
CAUTI ³	£1968

NHS hand hygiene policy issues all addressed by this technology

- Questions about the compliance level of hand hygiene
- Insufficient resources devoted to hand hygiene
- Doubts that the results are consistent on an inter-Trust basis
- Formal results are not taken seriously
- C.difficile trajectories being exceeded on a widespread basis thus far this year
- Trusts being fined for exceeding trajectories
- New or emergent HCAI infections being observed
- Little, if anything new, on the technology or vaccine front to help deal with the challenge



Key Patient Benefits

- Increased quality of care
- Reduced risk of infection
- Reduced length of stay in hospital
- Reassurance and visibility of healthcare workers' hand hygiene status
- Increased trust in healthcare providers



Benefits of SBRI

- Funding
- Contacts within industry
- Links with the NHS
- Relations with academia
- Procurement advice
- Always on hand/available
- Wide range of skills
- Not far away

Other Planned Uses

- Catheter management
- Medicines safety
- Patient handling and turning
- Hydration & nutrition
- Asset tracking
- Patient & staff location
- Medical visit oversight
- Non touch screen bed management

Cost References

1. Department of Health (2012) Quality and Outcomes Framework 2011/2012. Impact assessment No. 5014, [accessed 25 April 2012].
2. Quality Improvement Guide - Prevention and control of healthcare-associated infections. Costing Template - Implementing NICE guidance (2011).
3. epic3: National Evidence-Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospitals in England H.P. Loveday: Journal of Hospital Infection 86S1 (2014) S1-S70.

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