# A dedicated program to enhance practice in the setting of a CPE outbreak

## Shared Patient Equipment Cleaning and PPE Application and Removal

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# Disclosure

No conflict of Interest
Nil affiliations for any authors

# The Alfred Hospital - Melbourne

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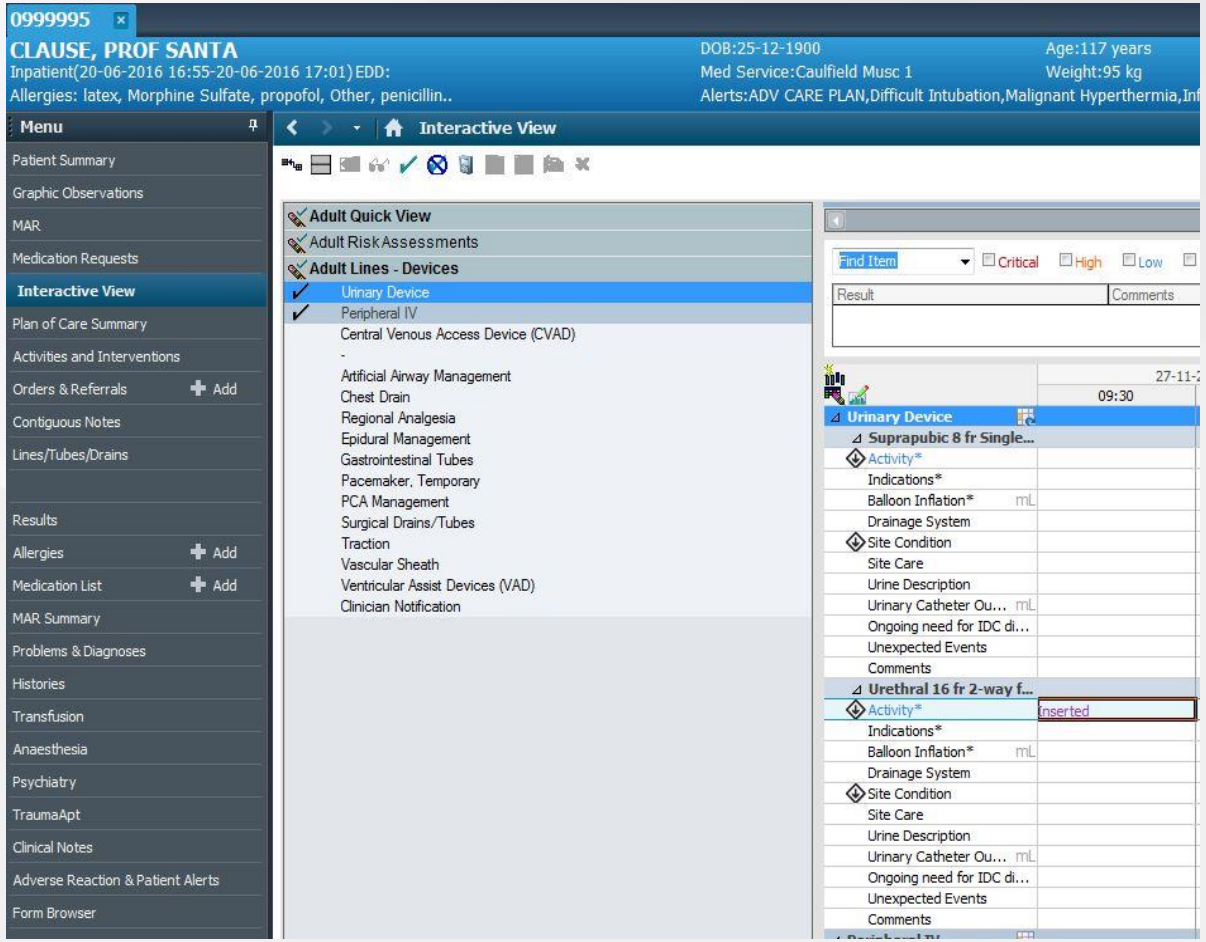
# Introduction of Electronic Medical Record (EMR) and Bedside Mobile Workstations (BMW)

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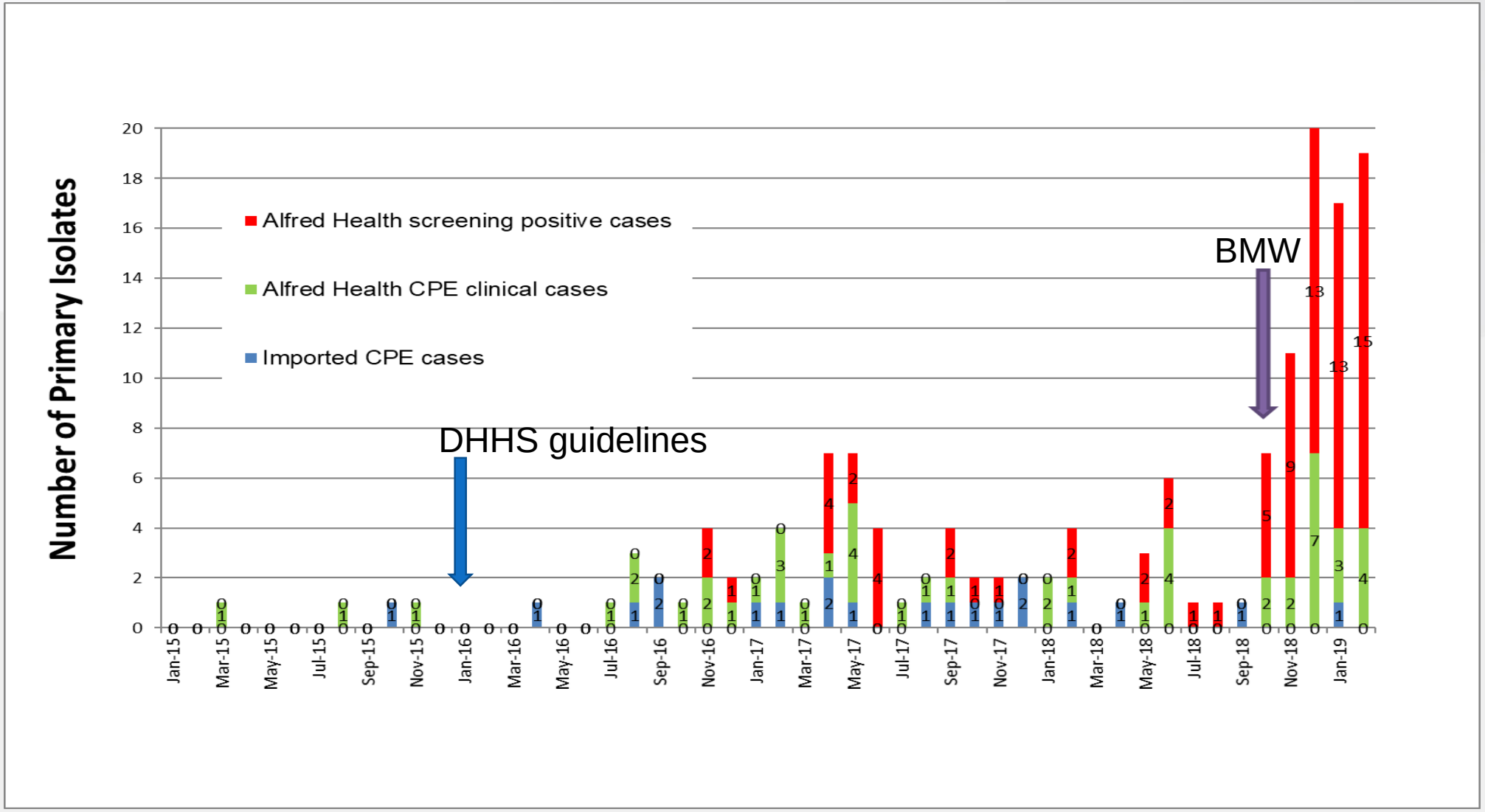
# Carbapenemase-producing Enterobacteriaceae (CPE) at Alfred Health

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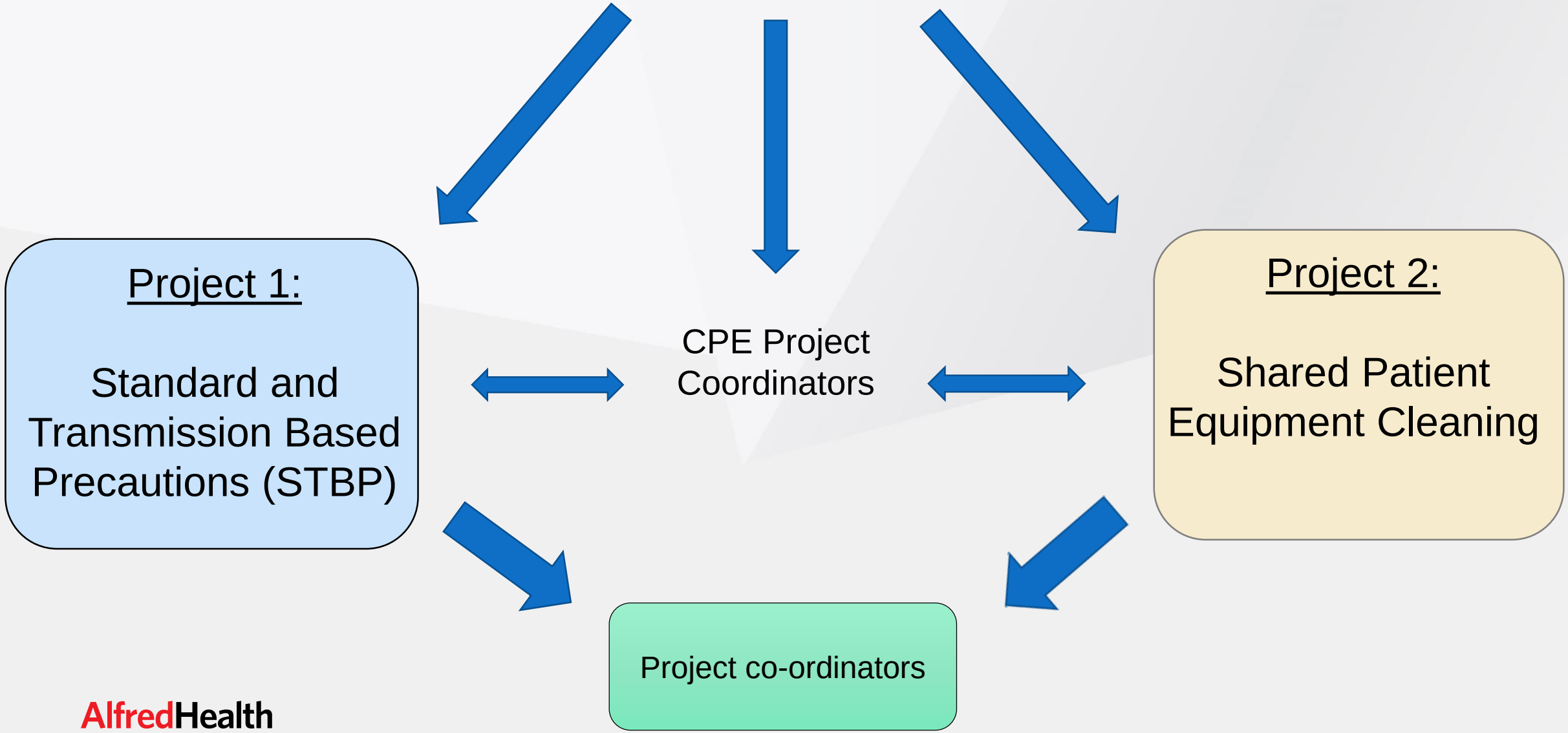
# Alfred Health CPE outbreak: IP team

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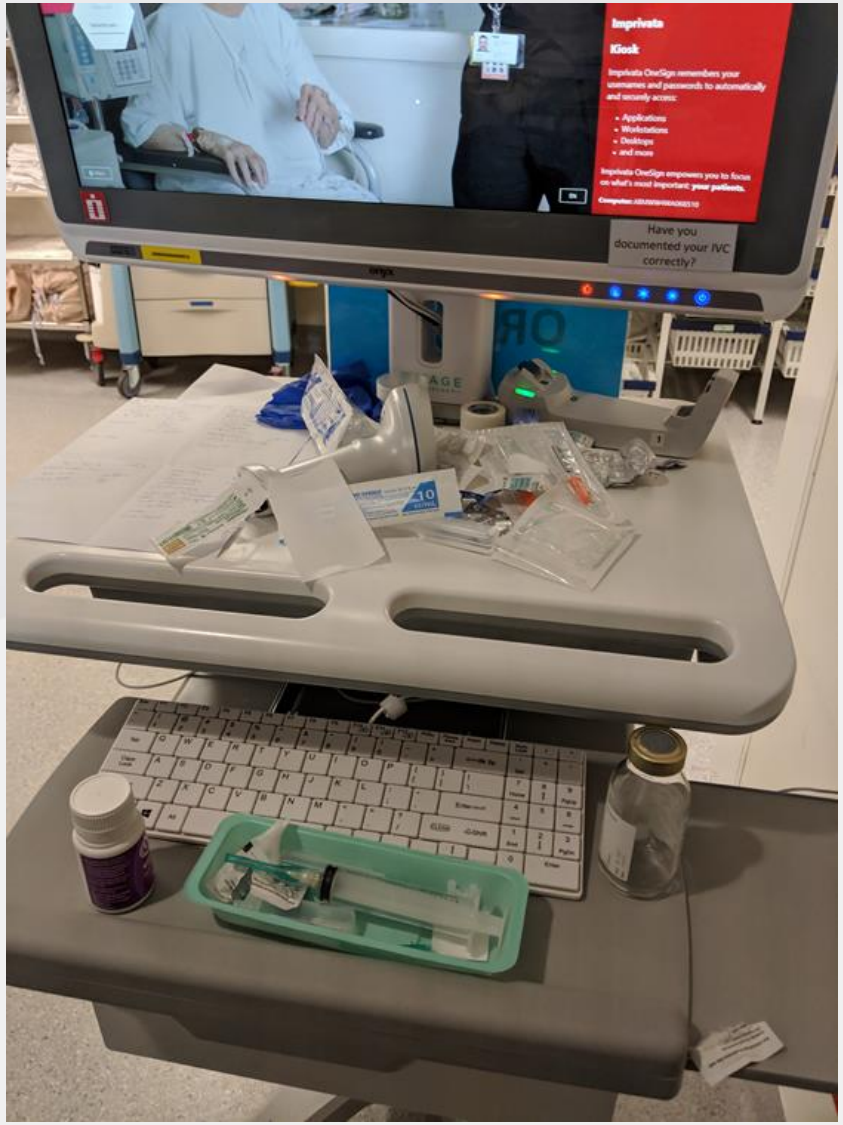
# Initial Observations and Actions

Issues

- Clutter on BMW's
- Poor compliance with PPE
  - Self contamination
- Inadequate equipment cleaning
  - Environmental contamination

Actions

- Timely feedback
- Addressing the clutter
- Targeted education for wards with CPE

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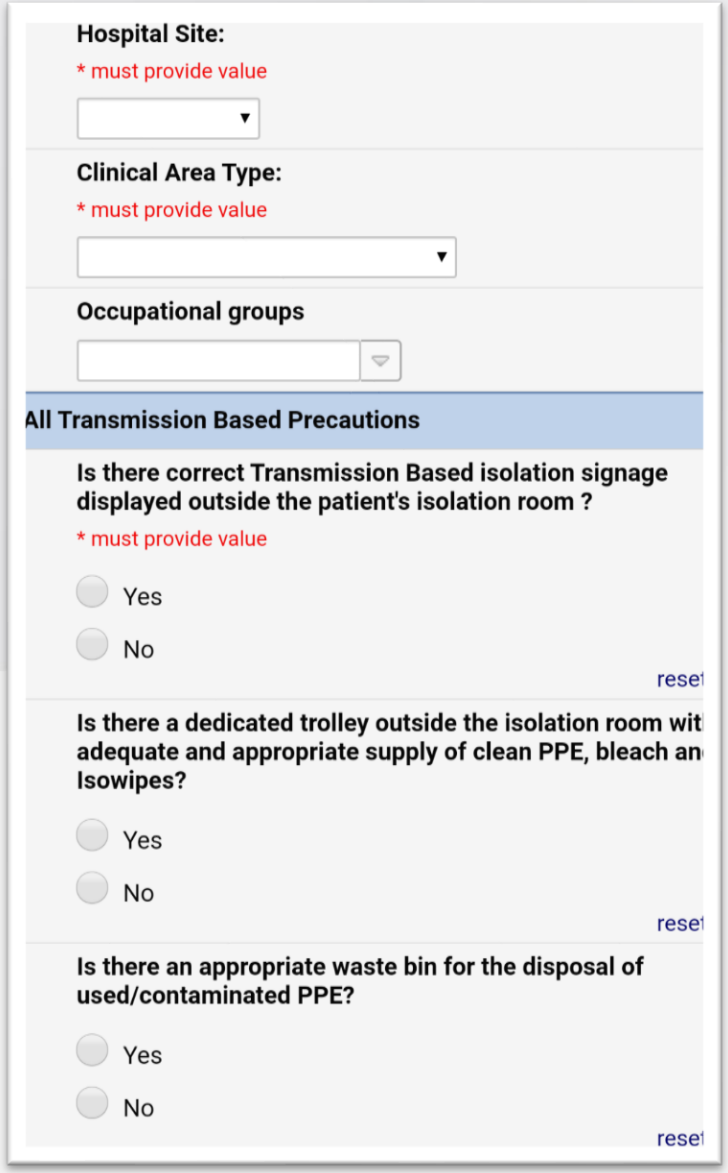
# Project Development

- **Risk Matrices & Action Plans**
  - High risk wards prioritised in consultation with CPE project coordinator
  - Benchmarking with each other ensuring robust data
- **Baseline auditing**

**Project 1:**

- Electronic auditing of STBP


Hospital Site:
* must provide value

Clinical Area Type:
* must provide value

Occupational groups

All Transmission Based Precautions

Is there correct Transmission Based isolation signage displayed outside the patient's isolation room ?
* must provide value
Yes
No
reset

Is there a dedicated trolley outside the isolation room wit adequate and appropriate supply of clean PPE, bleach an Isowipes?
Yes
No
reset

Is there an appropriate waste bin for the disposal of used/contaminated PPE?
Yes
No
reset

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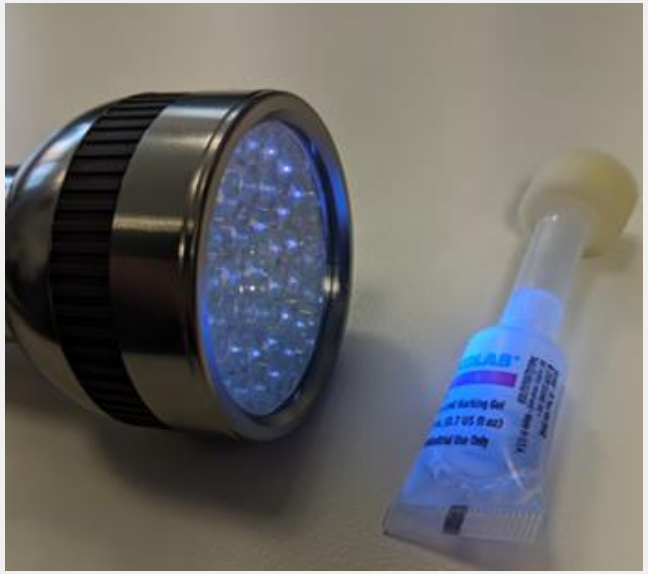
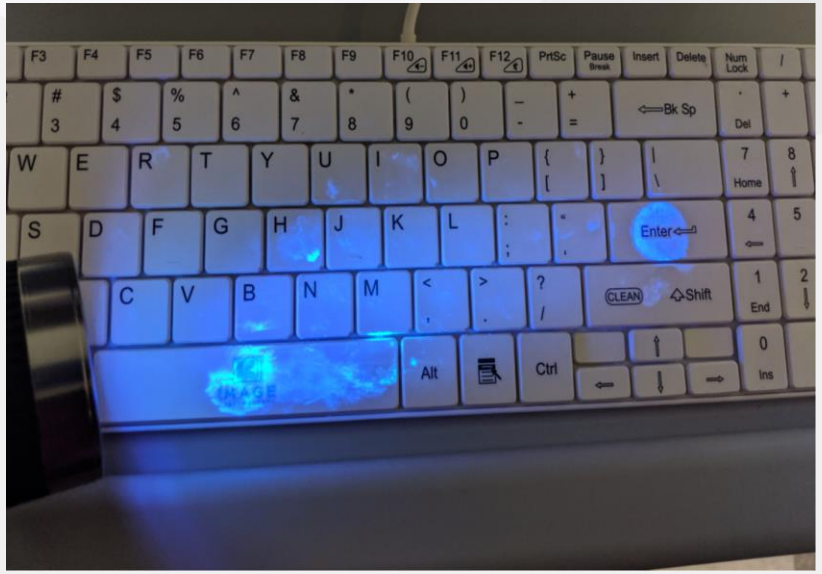
# Shared Patient Equipment Cleaning Audits

**Baseline auditing**

**Project 2:**

- Fluorescent gel marking on shared patient equipment





| Equipment | Feb-19 |
|---|---|
| Blood Pressure Machine 1 | fail |
| Blood Pressure Machine 2 | |
| Blood Pressure Machine 3 | |
| BMW 1 | fail |
| BMW 2 | fail |
| BMW 3 | fail |
| BMW 4 | |
| BMW 5 | |
| BMW6 | |
| Temporal artery Thermometer 1 | fail |
| Temporal artery Thermometer 2 | fail |
| Temporal artery Thermometer 3 | |
| ECG | fail |
| Bladder Scanner | fail |
| Weigh chair | |
| Dressing Trolley 1 | fail |
| Dressing Trolley 2 | |
| PIVC Trolley 1 | pass |
| PIVC Trolley 2 | |
| Commode 1 | |
| **% Compliance with Cleaning** | **10%** |

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# Clean Between

## B4 & AFTER

ARE YOU CLEANING YOUR DEVICES?

## Before and after:

Wipe thoroughly at the **start** and **end** of your shift

Wipe thoroughly **between** use with patients

**Use alcohol wipes and maintain hand hygiene**

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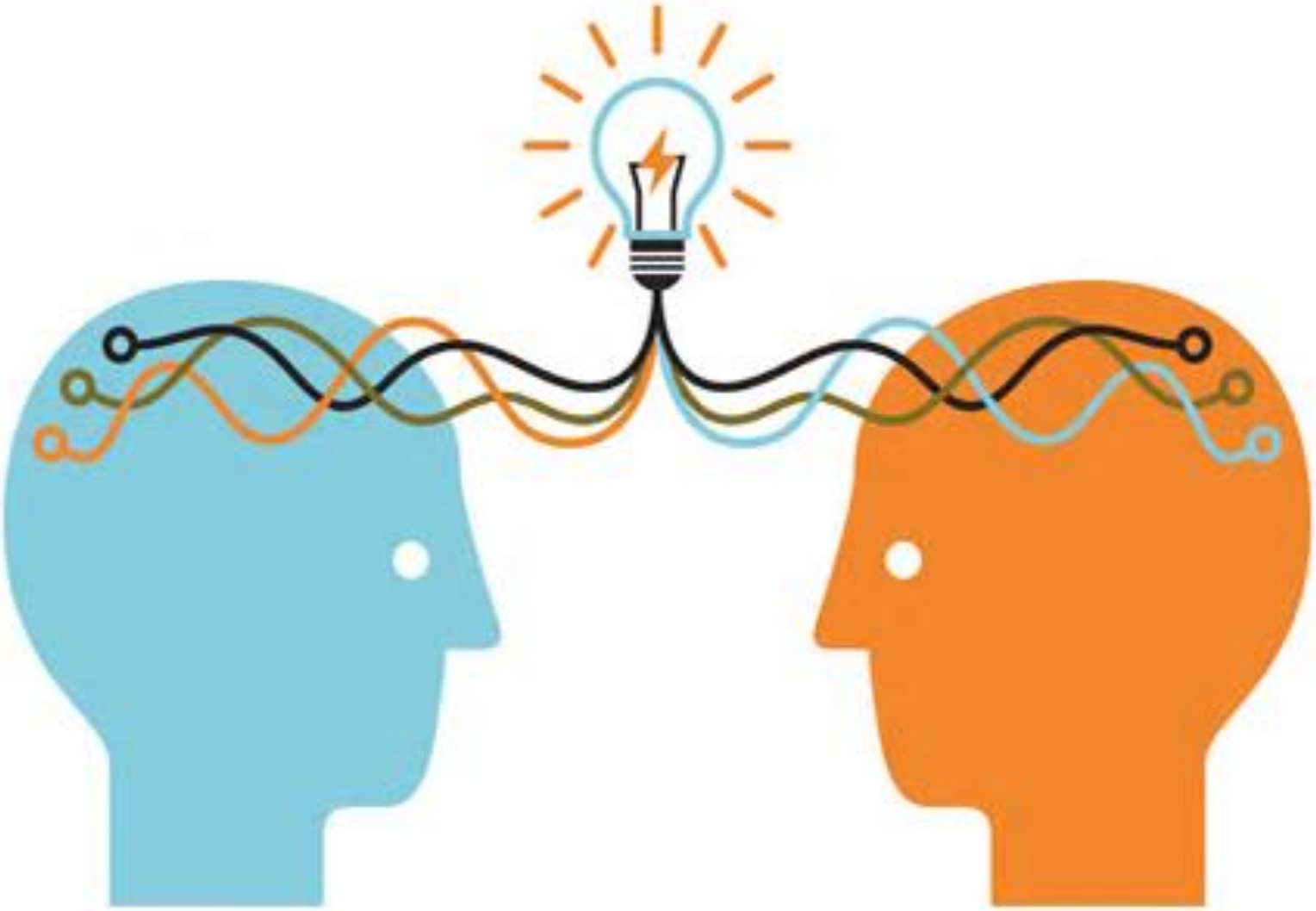
# Positive Approach

- Daily ward visits resulted in developing relationships
- Engagement with Nurse Managers, Senior Medical Staff, Allied Health team leaders and Non Clinical Support Staff
  - Encouraged local ownership
- This flowed in to our education, involving clinical staff:
  - Practical demonstrations of donning and doffing
  - Informal
  - Feedback sessions for staff in a safe space

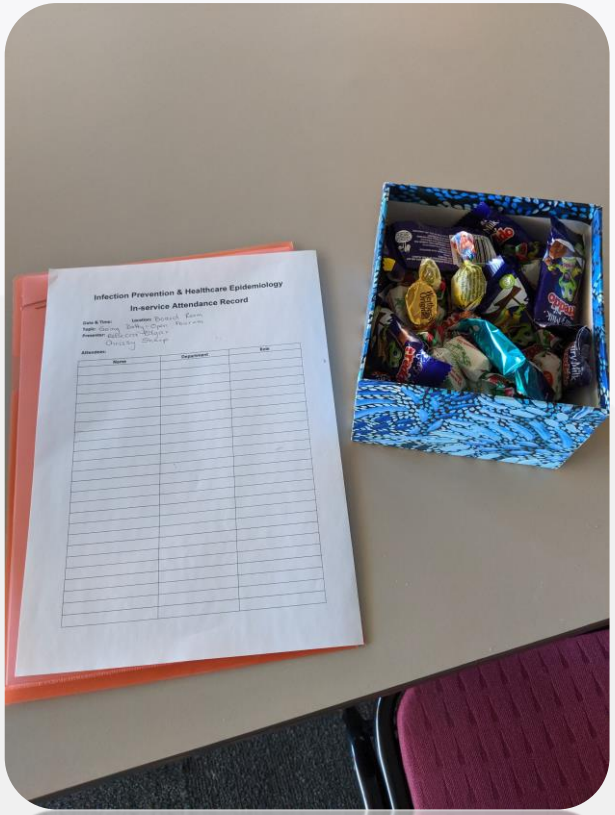
# Still not hitting the mark

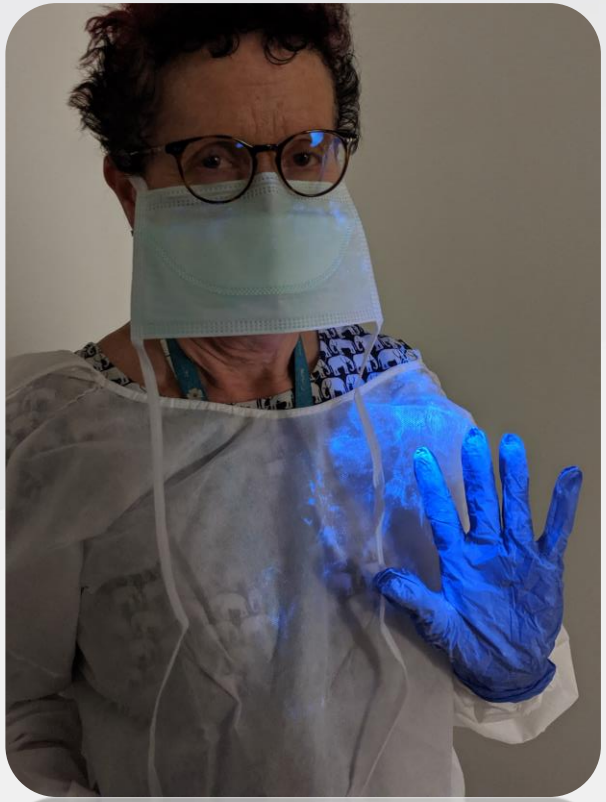
We continued to observe the following:

- Inconsistent practice of:
  - Donning and doffing
  - Self contamination
- ***<u>Knowledge ≠ Compliance</u>***
- Needed to regroup



# Impact





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# Cleaning: Back to Basics

- Who
- What
- When
- Product
- Process

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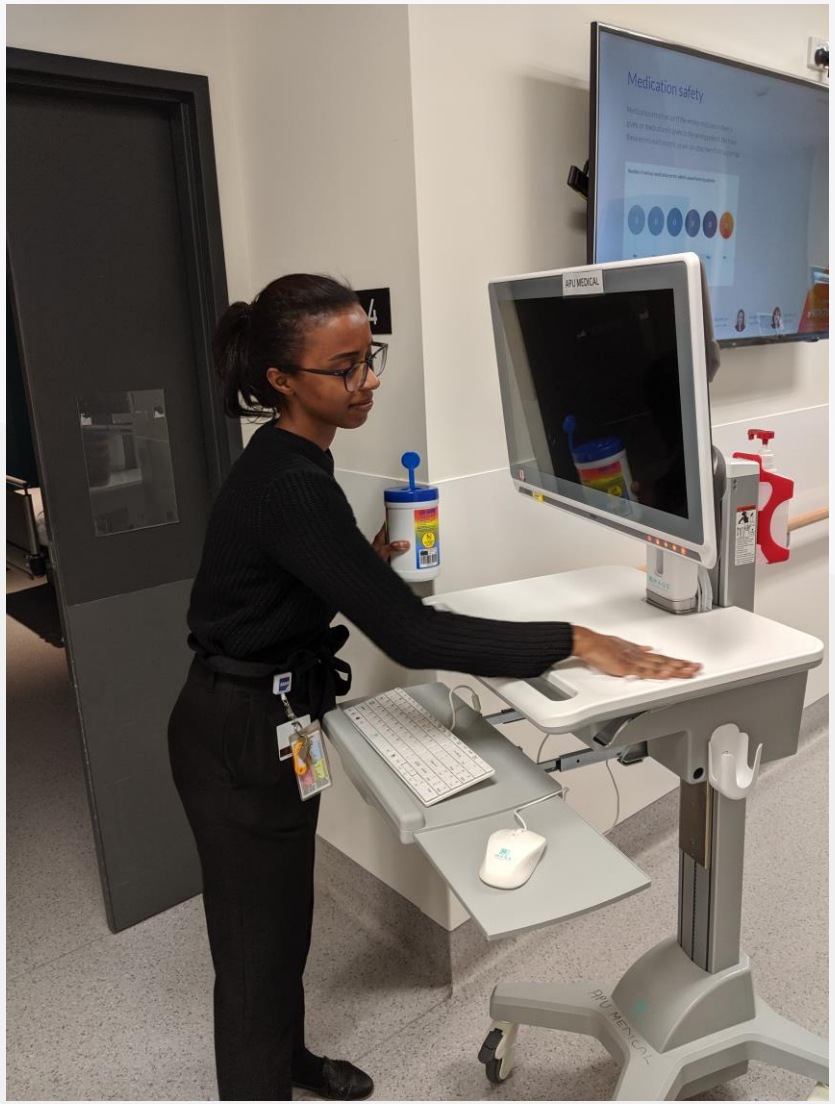
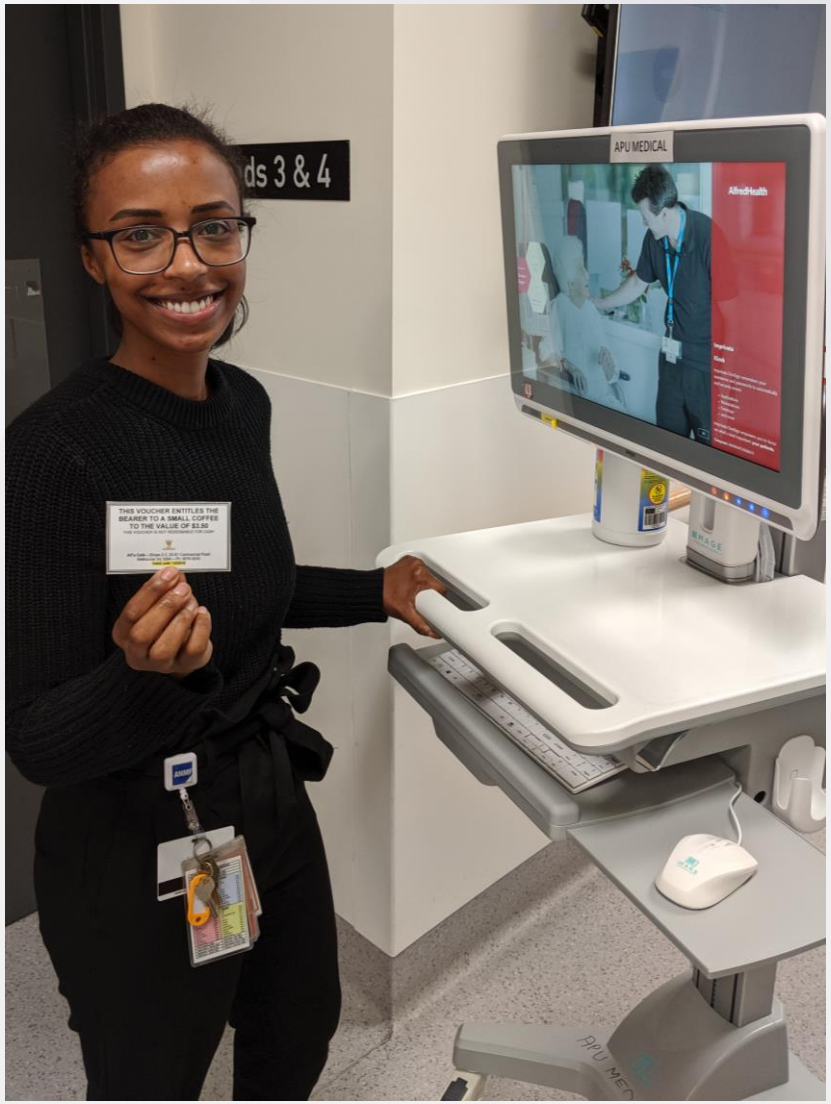
# Incentives

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# Shared Patient Equipment Cleaning

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# Standard & Transmission Based Precautions

Addressing STBP compliance:

- Standardisation / expected behaviours
- Accountability
- Unconscious self contamination
- Self risk assessment
- Access to PPE
- Comfort

| Standard Precautions Audits by Quarter | FY 2018/19 | | FY 2019/20 | |
|---|---|---|---|---|
| | QTR3 | QTR4 | QTR1 | QTR2 |
| 1. BBFE card attached to ID card | 85% | 67% | 91% | 90% |
| 2. Hand hygiene prior to putting on gloves | 84% | 82% | 79% | 93% |
| 3. Linen skip at point of care | 25% | 100% | 94% | 93% |
| 4. Sharps safety device feature activated | 97% | 88% | 67% | 83% |
| 5. Clinical waste (blood) disposed into yellow | 95% | 79% | 90% | 100% |
| 6. Shared patient equipment cleaned correctly | 75% | 58% | 73% | 69% |
| 7. Hand hygiene after removing gloves | 84% | 79% | 84% | 90% |
| 8. Number of Audits | 71 | 90 | 51 | 84 |

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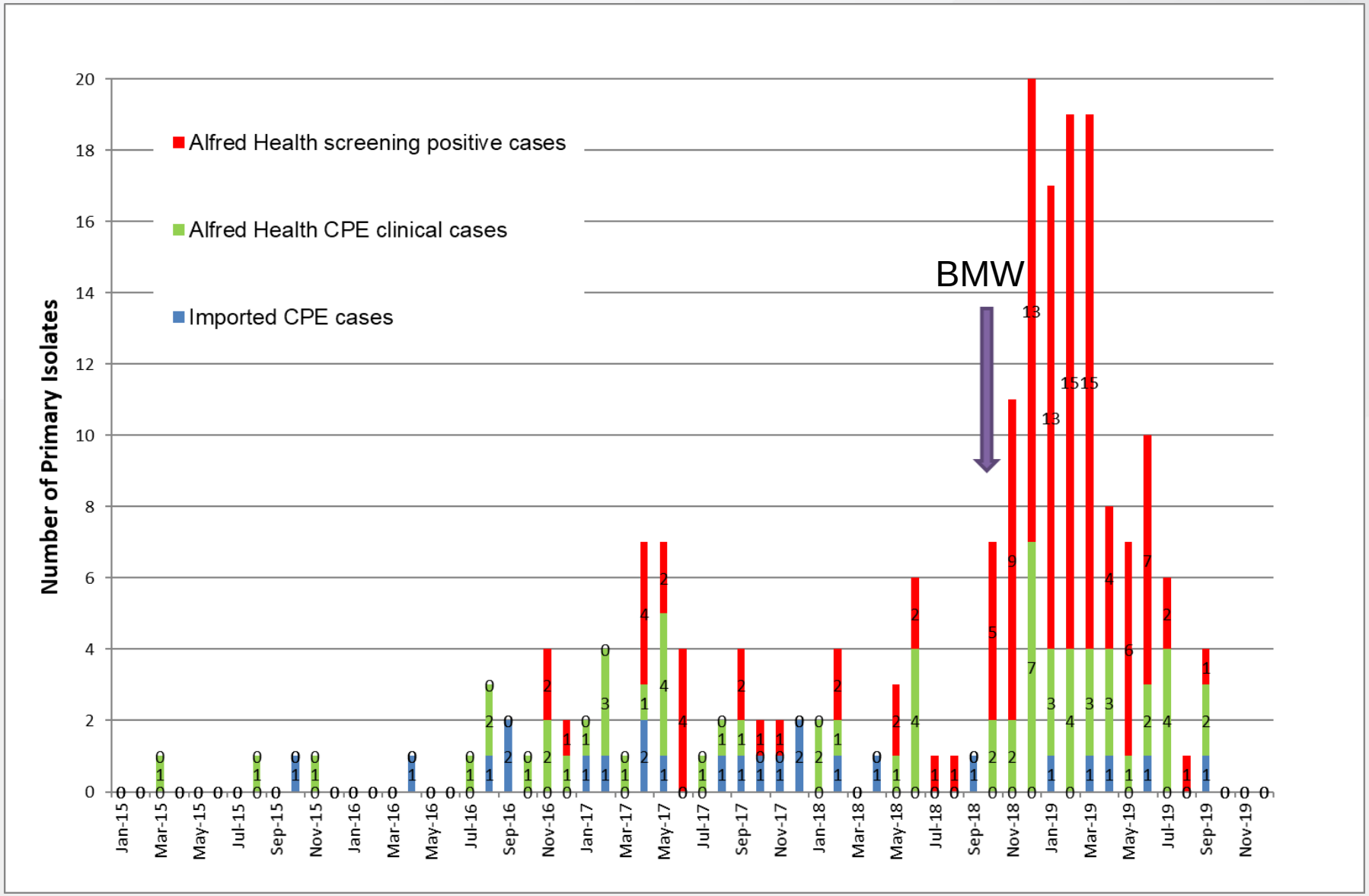
## Transmission Precautions Audits by Quarter

| | | | FY 2018/19 | | FY 2019/20 | |
|---|---|---|---|---|---|---|
| | | | QTR3 | QTR4 | QTR1 | QTR2 |
| | | Correct signage outside room | 96% | 91% | 91% | 93% |
| | | Trolley with supplies outside | 83% | 69% | 93% | 86% |
| | | Waste bin for PPE disposal | 96% | 93% | 98% | 96% |
| Contact precautions | Application | 1. Performs hand hygiene | 54% | 63% | 76% | 88% |
| | | 2. Appropriate disposable | 84% | 81% | 92% | 81% |
| | | 3. Applies protective eyewear | 67% | 0% | 50% | 80% |
| | | 4. Performs hand hygiene | 54% | 50% | 67% | 69% |
| | | 6. Nonsterile gloves, gown | 83% | 80% | 85% | 85% |
| | Removal | 1. Removes Gloves | 68% | 67% | 88% | 85% |
| | | 2. Performs hand hygiene | 49% | 51% | 74% | 82% |
| | | 3. Removes, disposes of | 63% | 74% | 88% | 91% |
| | | 4. Hand hygiene post gown | 71% | 71% | 89% | 90% |
| | | 5. Protective eyewear removal | 67% | | 80% | 40% |
| | | 5a. Wipes protective eyewear | 100% | | 0% | |
| | | 6. Performs hand hygiene | 94% | 96% | 95% | 96% |
| Droplet precautions | Application | 1. Performs hand hygiene | 30% | 45% | 63% | 60% |
| | | 2. Appropriate disposable | 60% | 66% | 63% | 83% |
| | | 3. Surgical or N95 mask | 40% | 56% | 18% | 33% |
| | | 4. Applies protective eyewear | 40% | 23% | 46% | 17% |
| | | 5. Hand hygiene pre gloves | 40% | 45% | 50% | 80% |
| | | 6. Nonsterile gloves, gown | 70% | 80% | 75% | 100% |
| | Removal | 1. Removes Gloves | 56% | 68% | 67% | 100% |
| | | 2. Hand hygiene post gloves | 67% | 46% | 48% | 86% |
| | | 3. Removes, disposes of | 75% | 50% | 67% | 100% |
| | | 4. Hand hygiene post gown | 56% | 30% | 52% | 80% |
| | | 5. Protective eyewear removal | 100% | 50% | 75% | |
| | | 5a. Wipes protective eyewear | | 100% | | |
| | | 6. Removes mask correctly | 33% | 39% | 33% | 71% |
| | | 7. Performs hand hygiene | 89% | 79% | 90% | 100% |
| Enteric precautions | Application | 1. Performs hand hygiene | 73% | 50% | 50% | 76% |
| | | 2. Appropriate impervious | 73% | 50% | 83% | 81% |
| | | 3. Surgical mask selected | 100% | 0% | | 100% |
| | | 4. Goggles/face shield | 100% | | 0% | 67% |
| | | 5. Hand hygiene pre gloves | 65% | 63% | 17% | 62% |
| | | 6. Nonsterile gloves, gown | 91% | 75% | 100% | 90% |
| | Removal | 1. Removes Gloves | 76% | 63% | 83% | 70% |
| | | 2. Hand hygiene post gloves | 60% | 38% | 58% | 80% |
| | | 3. Removes gown correctly | 57% | 63% | 83% | 100% |
| | | 4. Hand hygiene post gown | [illegible] | [illegible] | 69% | 90% |
| | | 5. Protective [illegible] removal | 100% | | | |
| | | 5a. Wi[illegible] protective eyewear | 75% | | | |
| | | 6. [illegible]nd hygiene post eyewear | 100% | 100% | 100% | 100% |
| Total | Total | [illegible]umber of audits | 112 | 93 | 96 | 74 |
| Airborne precautions | Applicat[illegible] | 1. Performs hand hygiene | | 50% | 100% | 100% |
| | | 2. Appropriate disposable | | 100% | 100% | 100% |
| | | 3. N95 mask and performs fit | | 100% | 100% | 100% |
| | | 4. Applies protective eyewear | | | | |
| | | 5. Performs hand hygiene | | 50% | 100% | 100% |
| | | 6. Nonsterile gloves, gown | | 100% | 100% | 100% |
| | R[illegible]oval | 1. Removes Gloves | | 100% | 100% | 100% |
| | | 2. Performs hand hygiene | | 50% | 100% | 100% |
| | | 3. Removes, disposes of | | 100% | 100% | 100% |
| | | 4. Hand hygiene post gown | | 100% | 100% | 67% |
| | | 5. Protective eyewear removal | | | | |
| | | [illegible]. Wipes protective eyewear | | | | |
| | | 6. [illegible]oves N95 mask | | 100% | 100% | 67% |
| | | 7. Hand [illegible]ne post mask | | 100% | 100% | [illegible] |

# Summary of Project 1 & 2

- Over 80 dedicated education sessions
- Compliance with equipment cleaning 13% to 82% in ICU
- Compliance with STBP is ongoing
- Ward Based Champion Team, 13 and growing!
- Looking forward to developing AH and Medical Champions.

# Carbapenemase-Producing Enterobacteriaceae

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# What Worked Well?

- Demonstrated cleaning technique
- Rewards and positive reinforcement
- Standardised auditing
- Developing relationships

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# Moving forward

- Utilise data to better explain behaviours and trends
- Expanding our projects
- Continually revise our auditing tools and processes
- Online learning package
- Staying up to date with best practices and latest research in the field
- Continuing relationships with staff
- Figuring out how to sustain our progress!

# Thank you to Alfred Health Infection Prevention Team

For more information on our BMW's please see poster 43

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