Implementation of Phosphoric Acid to Decontaminate Clinical Hand Basins in an Intensive Care Unit

Megan Gritt, Infection Prevention Nurse Consultant
Alfred Health Infection Prevention & Healthcare Epidemiology Department
Oct 2025

theAlfred

Part of AlfredHealth

What's covered:

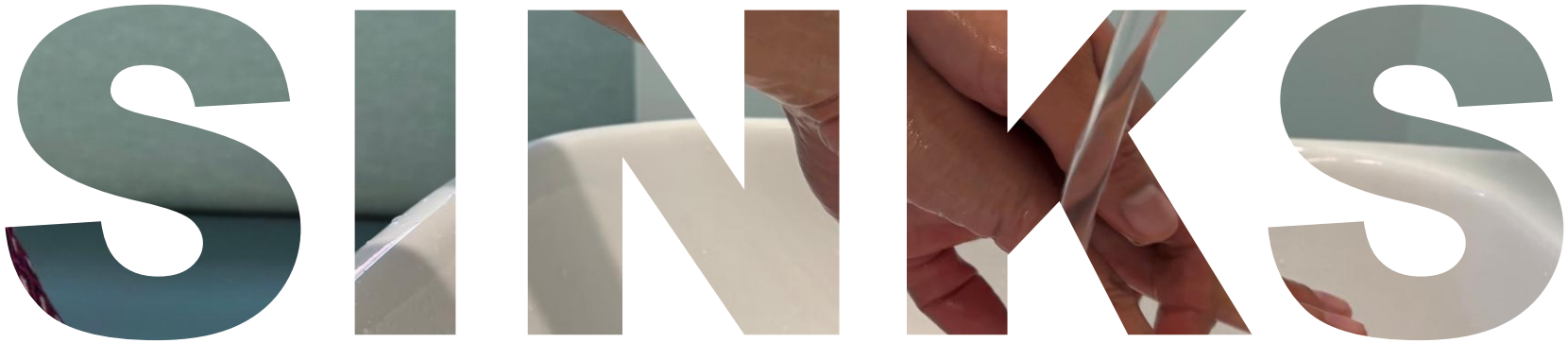
The Why

The Where

The How

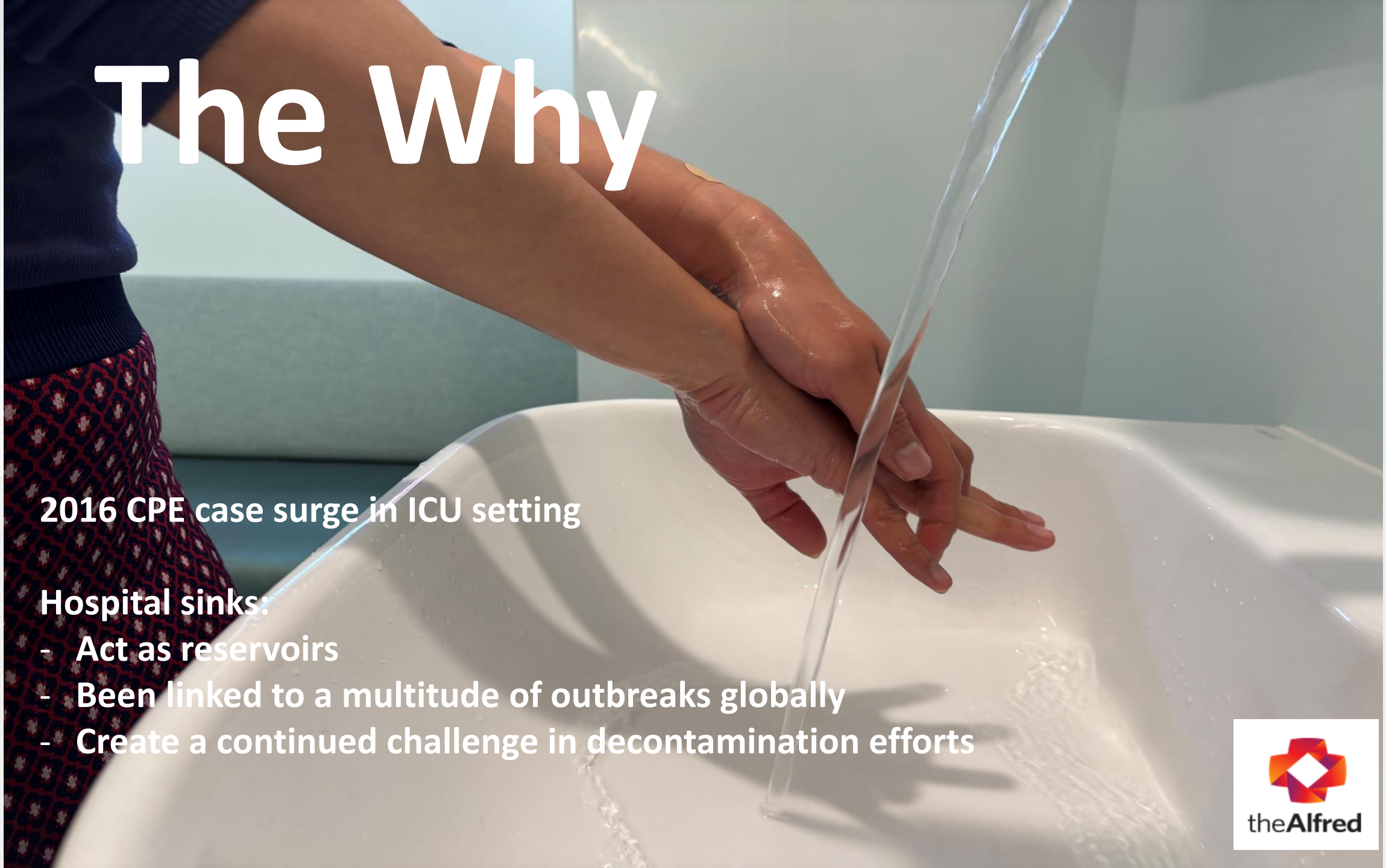
The Results

theAlfred



theAlfred

The Why



2016 CPE case surge in ICU setting

Hospital sinks:

- Act as reservoirs
- Been linked to a multitude of outbreaks globally
- Create a continued challenge in decontamination efforts

theAlfred

The Where

The How: Screening

theAlfred

The How: Culturing

78% (40/51) sinks CPE positive at baseline screening

The How: Sink Hygiene Initiative

Sink Hygiene Initiative:

1. Promoting appropriate sink use
2. Decluttering sink surfaces
3. Auditing/replacing faulty faucets or components
4. Regular chemical decontamination

theAlfred

The How: Treatment

theAlfred

Culturing results

- 1005 swabs collected (over screening period 2017-2025)
- 158/1005 (15.7%) of swabs positive for CPO
- 154/158 (96.2%) of positive isolates were *S. marcescens*
- 155/158 (96.9%) $bla_{\text{IMP-4}}$

theAlfred

But are we trending?

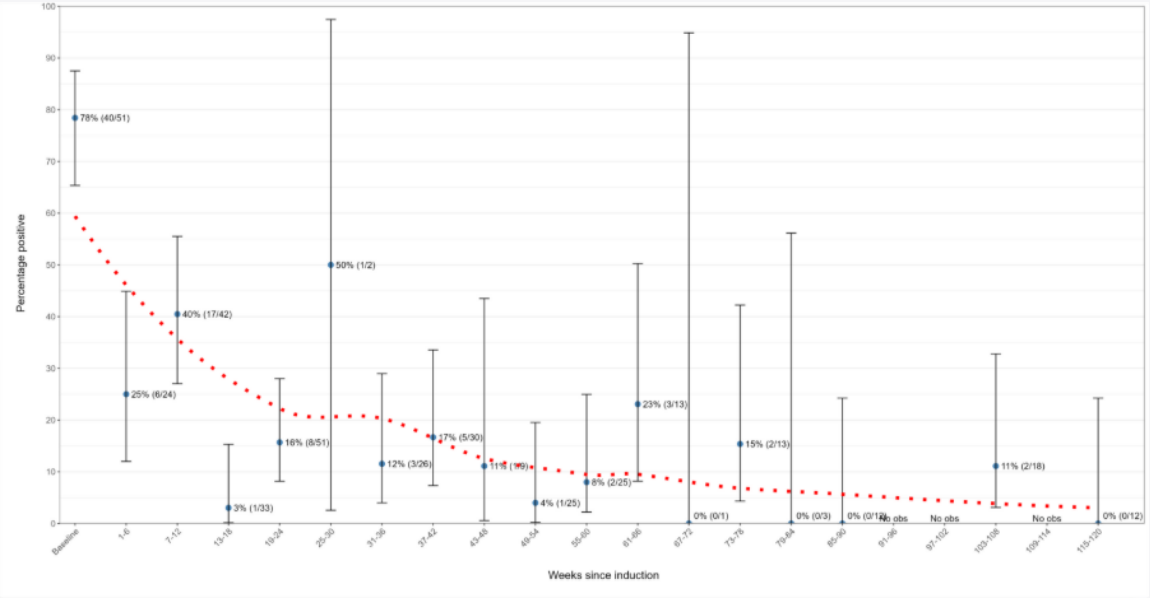


Figure 1. Study period 1, February 2017 – March 2020

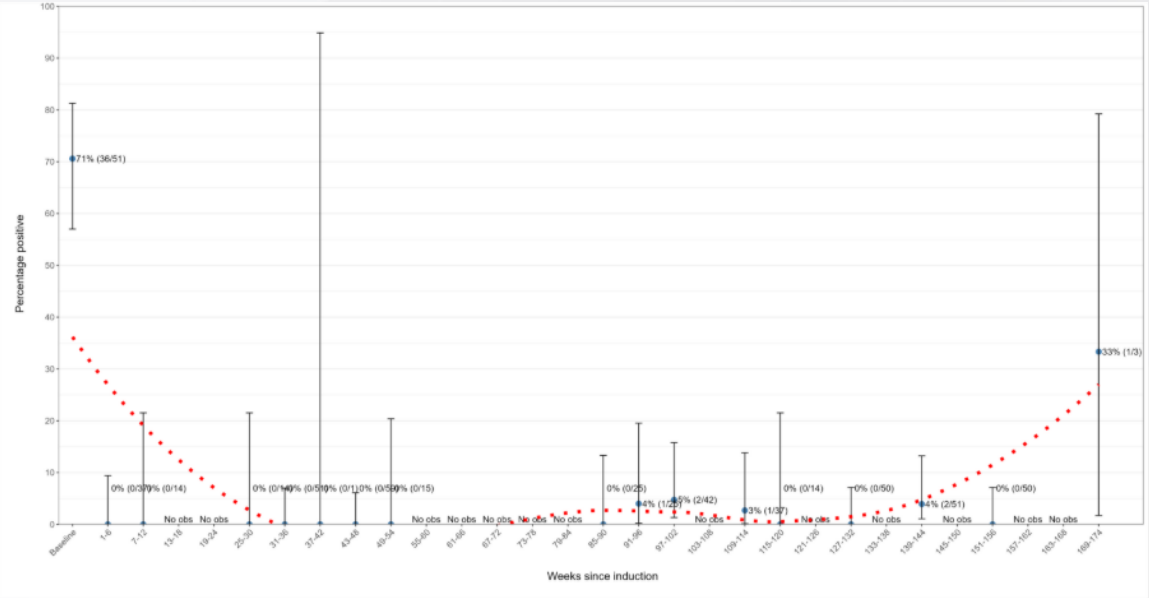


Figure 2. Study period 2, May 2021 – June 2025

Barriers and Limitations

- Operational nature, not randomized controlled trial
- We were on a break – pause due to COVID-19
- Sampling focused on superficial plumbing only
- Variability in sampling intervals (4 – 12-week range)
- Single-site study limits generalizability
- Cost, resource and labour considerations

Final Thoughts and Considerations

Phosphoric acid cleaning is an effective intervention to suppress CPO in superficial plumbing of ICU handbasins, however, maintenance treatment is essential for sustained suppression

Considerations:

- Screening - Once you know, are you obligated to treat?
- Treatment - Once you start, can you ever stop?

Thank You and Please Meet Our Team!











References:

1. Carling PC. Wastewater drains: epidemiology and interventions in 23 carbapenem-resistant organism outbreaks. Infect Control Hosp Epidemiol. 2018;39(8):972-979. doi:10.1017/ice.2018.138

2. Sherry NL, Lane CR, Kwong JC, et al. Genomics for Molecular Epidemiology and Detecting Transmission of Carbapenemase-Producing Enterobacterales in Victoria, Australia, 2012 to 2016. *Journal of Clinical Microbiology*. 2019;57(9). doi:10.1128/jcm.00573-19