

The Perfect Storm: A Hardy and Lethal Pathogen and a Unit Filled with Immunocompromised Patients with Large Open Wounds – Troubles with *Candida auris* in a Burn Intensive Care Unit



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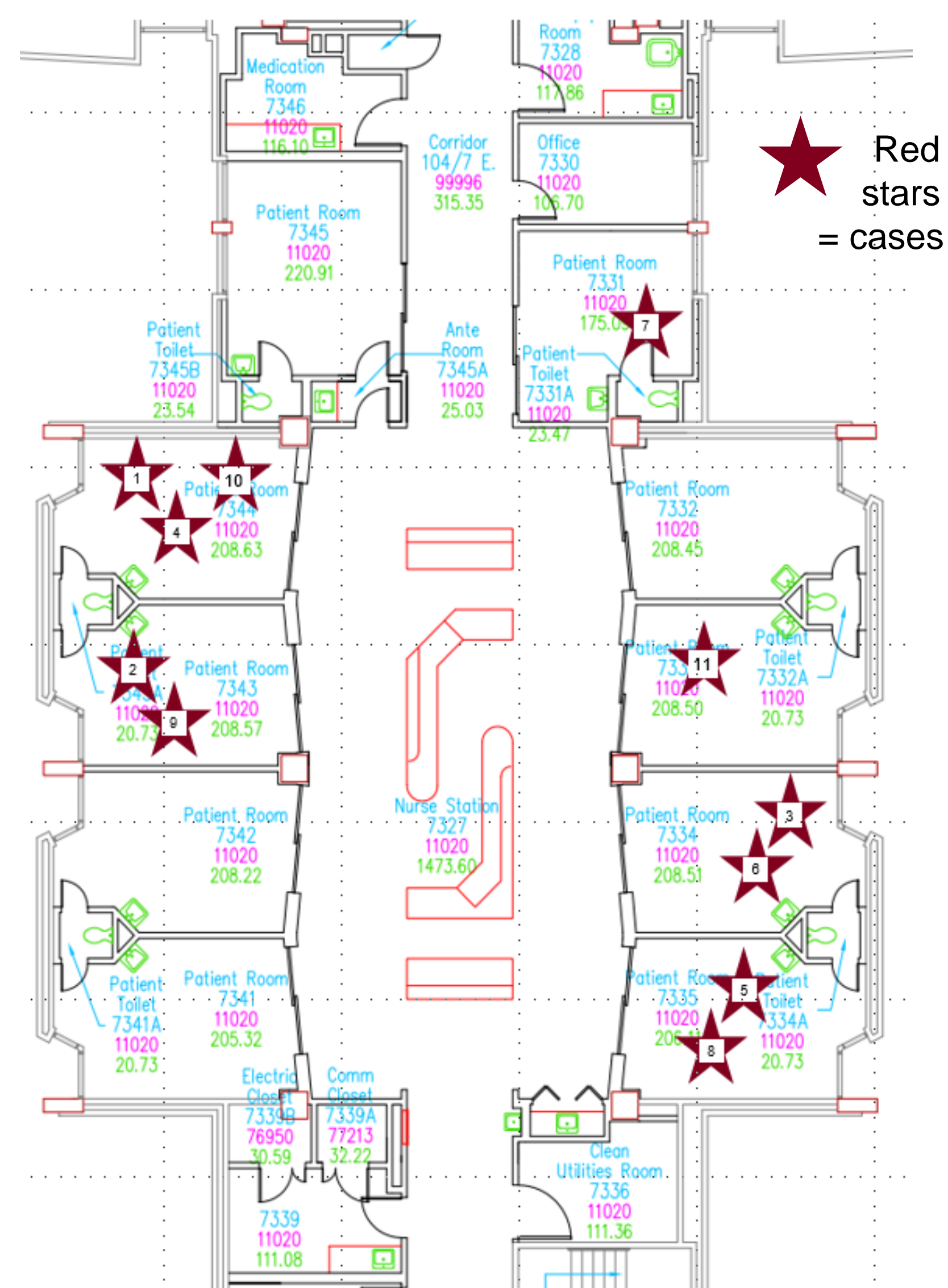
Background

- ❑ *Candida auris* is an emerging often multidrug resistant pathogen capable of causing severe morbidity and mortality.
- ❑ In recent years, *C. auris* has increasingly been isolated from patients in skilled nursing facilities and hospitals, and has been associated with facility outbreaks.
- ❑ *C. auris* readily colonizes the environment. It is resilient pathogen, *C. auris* survives many disinfectants, desiccation, persisting in the environment and recognized to have fomite transmission.
- ❑ *C. auris* poses an especially great risk to immunocompromised patients with large open wounds and long lengths of stay.

Method

- ❑ From 7/1/21 to 8/30/21 our Burn ICU noted a cluster of 4 patients with *C. auris* in clinical cultures.
- ❑ We formed a multidisciplinary team involving infection prevention, Burn ICU (BICU) nursing and medical directors, environmental health and safety, engineering, environmental (housekeeping) services, and hospital leadership to **investigate the cluster as a potential outbreak**. This investigation extended into mid-April 2022
- ❑ Mitigation measures involved a multi-modal response, including:
 - ❑ *C. auris* screening of all new admissions
 - ❑ Weekly point prevalence testing of all BICU patients (not already known to be *C. auris* positive)
 - ❑ Environmental surface cultures
 - ❑ Enhanced daily room cleaning and enhanced terminal cleaning
 - ❑ Staff education
 - ❑ Hand hygiene and personal protective equipment usage audits.
 - ❑ Audits & cleaning logs of shared devices (EKG, ultrasound, etc.)

Figure 1



Disclosures

None

Results

- ❑ A cluster of 11 cases of *C. auris* were identified in our BICU between 7/1/21–2/28/22 – both as single case/room & multiple cases/room (Figure 1)
 - ❑ 5 (45.5%) cases found in only on clinical isolates
 - ❑ 1 (9.1%) from a BICU *one-off* point prevalence screen on 12/15/21
 - ❑ 5 (45.5%) as a part of *weekly* point prevalence screens started on 1/1/22.
- ❑ Admission diagnosis: 6 (54.5%) = burn related injuries, 2 (18.2%) = Steven Johnson Syndrome, 2 (18.2%) = necrotizing wounds, 1 (9.1%) = COVID-19 pneumonia (boarding in BICU for MICU team)
- ❑ 9 (81.8%) *C. auris* cases were deemed to colonization, while 2 (18.2%) were deemed to cause invasive disease.
- ❑ Positive cultures sites included 6 point prevalence screens, 1 urine, 3 sputum/BAL, 2 wounds, 2 blood.
- ❑ 1 (9.1%) patient expired & *C. auris* fungemia may have contributory to death.
- ❑ Cases occurred in 6/10 rooms in the Burn ICU (Figure 1).
- ❑ Post discharge of the last *C. auris* patient no further cases were found in 90 days of continued surveillance and admission *C. auris* screening.

Conclusion

- ❑ Resilient infections like *C. auris* pose a severe risk of nosocomial transmission and potential high morbidity and mortality to burn patients with impaired immune defense and large open wounds.
- ❑ A multidisciplinary team using targeted interventions including screening, education, enhanced cleaning eradicated the outbreak in our Burn ICU.
- ❑ To prevent future outbreaks, we created a standardized response plan and instituted a universal screening protocol for *C. auris* targeting all patient admissions from skilled nursing facilities and admissions to all ICUs.

