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WHAT LURKS BENEATH THE SINK: LOOKING INTO CRE IN HAND HYGIENE STATIONS OF A TERTIARY CARE HOSPITAL IN DUMAGUETE CITY, NEGROS ORIENTAL

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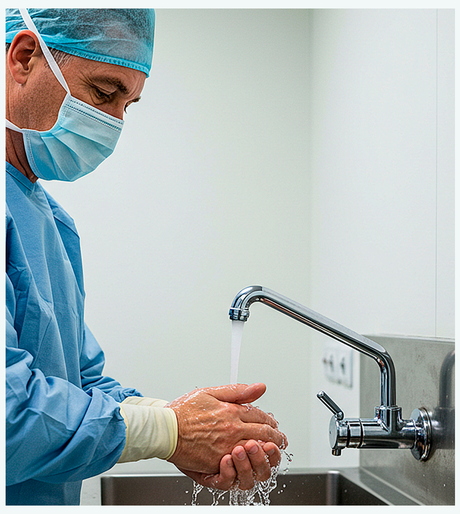
RES-091

INTRODUCTION

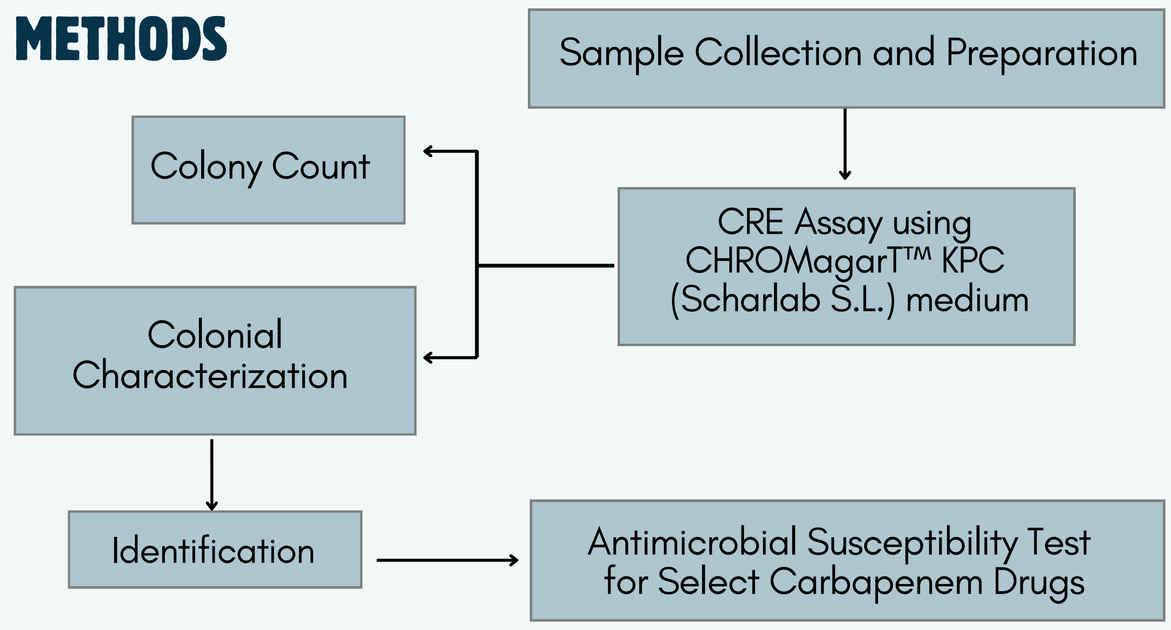


- Antimicrobial resistance is one of the top ten threats to global and public health (WHO, 2019).
- Causes are often linked to antibiotic exposure, ventilator use, and prolonged hospital stay.
- **Environmental reservoirs such as handwashing stations may also facilitate transmission of CRE**.
- Aim: To assess CRE contamination in handwashing sinks of a tertiary hospital in Dumaguete City, Negros Oriental, Philippines.

OBJECTIVES

- Assess CRE load in handwashing stations across hospital wards
- Phenotypically characterize the CRE isolates
- Identify the predominant CRE type in the handwashing stations

METHODS



RESULTS AND DISCUSSION

90% of the 40 swab samples were positive for suspected CRE with the highest bacterial loads found in obstetrics and intensive care unit sinks ($p<0.05$).

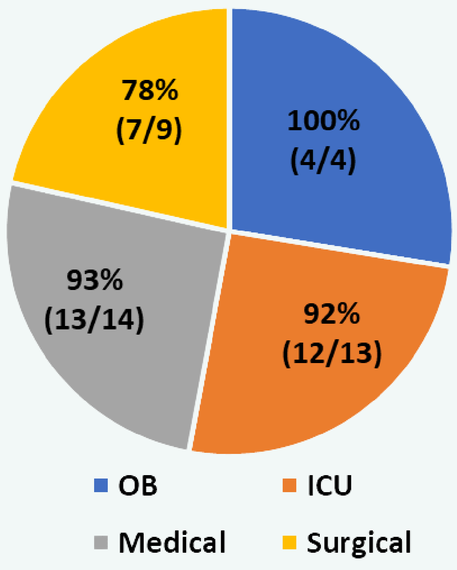


Figure 1. Distribution of positive swab samples per ward in the tertiary care hospital in Dumaguete City, Negros Oriental (n = 40).

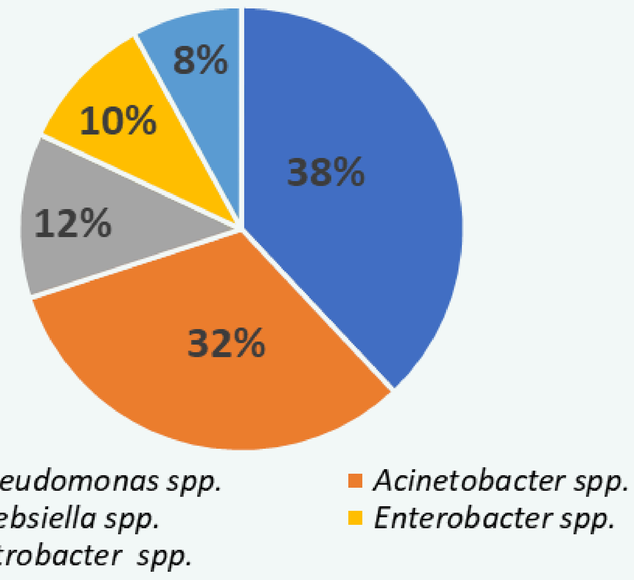


Figure 2. Percent distribution of confirmed CRE in the handwashing stations.

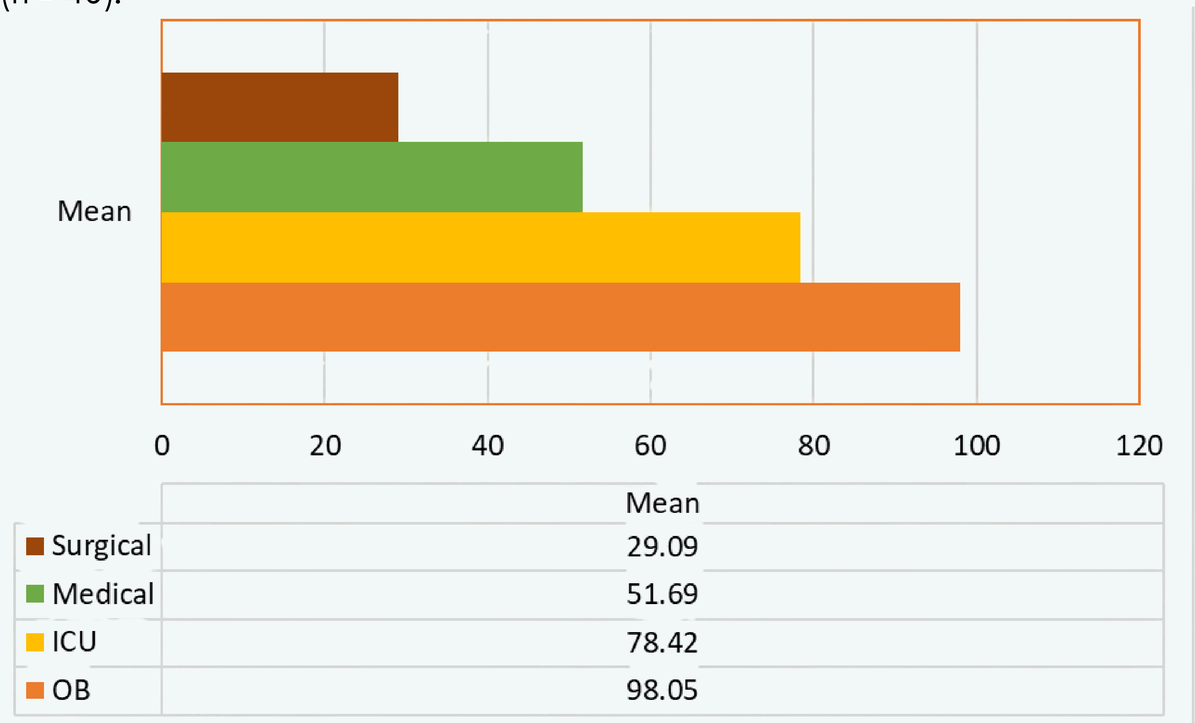


Figure 3. Mean colony count of CRE per ward of the tertiary care hospital in Dumaguete City, Negros Oriental.

- Results are contradictory to findings of Saeed et al., (2019) wherein area-wise distribution of CRE isolates showed that the medical wards had the highest number of CRE isolates, followed by surgical wards, ICU, and lastly OB ward

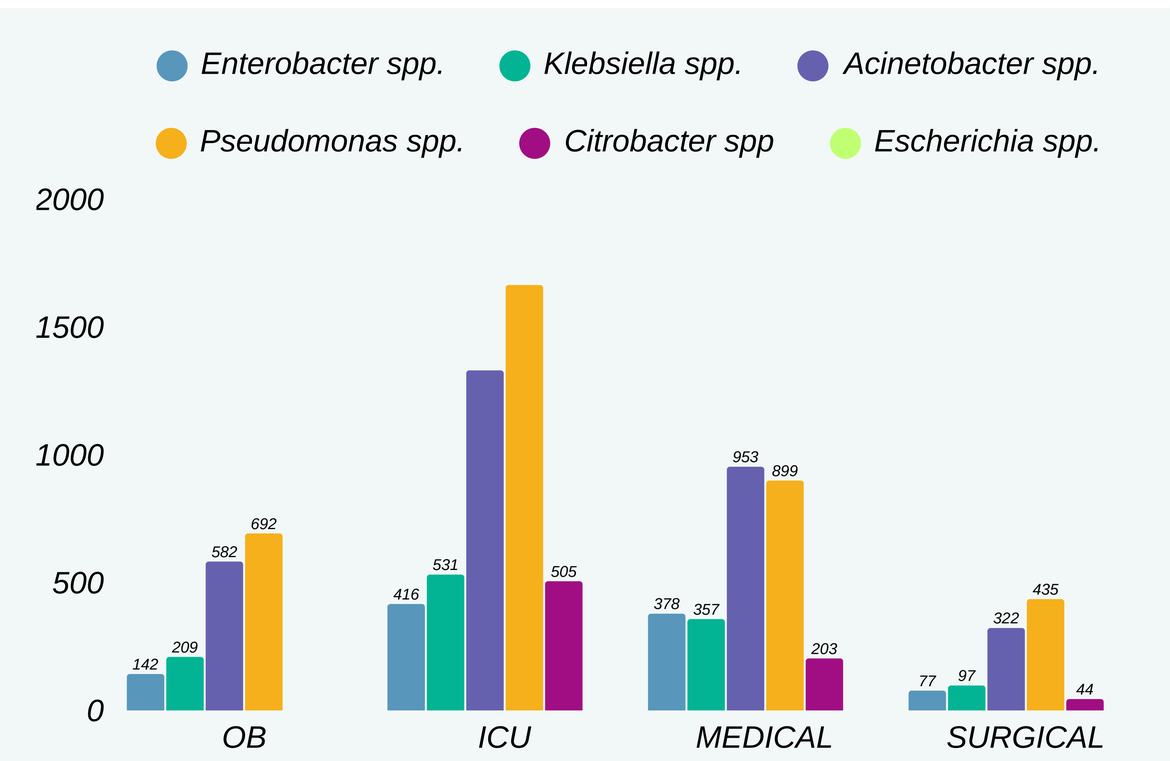


Figure 4. Occurrence of confirmed CRE in the handwashing stations in each ward

- Feretzakis et al. (2019) revealed that three of the most frequently isolated resistant bacteria came from the ICU with higher resistance rates compared with non-ICU isolates.

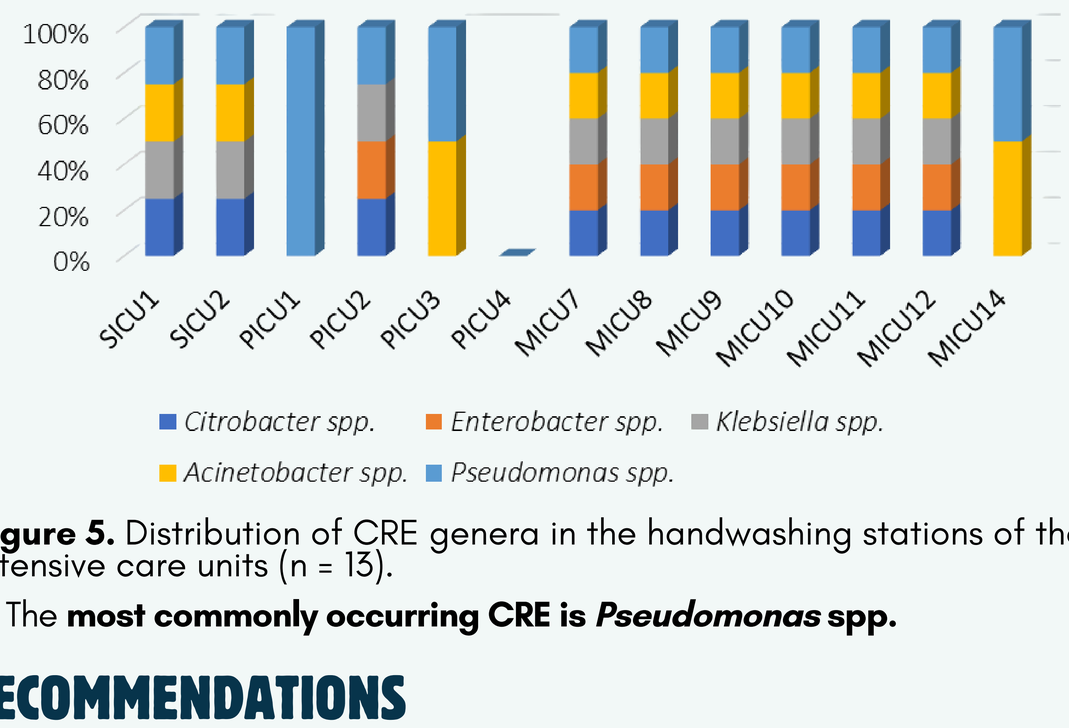


Figure 5. Distribution of CRE genera in the handwashing stations of the intensive care units (n = 13).

- The **most commonly occurring CRE is *Pseudomonas* spp.**

CONCLUSION

- Handwashing stations of the different wards are contaminated with CRE
- Identified and confirmed CRE include *Pseudomonas* spp., *Acinetobacter* spp., *Klebsiella* spp., *Enterobacter* spp., and *Citrobacter* spp.
- Two of the most commonly isolated CRE in the different wards are *Pseudomonas* spp. and *Acinetobacter* spp. with a noticeable high occurrence in the intensive care units.
- Most of the handwashing stations included in the study have at least two kinds of confirmed CRE.

RECOMMENDATIONS

- Reconsideration of the hospital's handwashing stations decontamination protocols
- Inclusion of other hospital departments (ER, hemodialysis units, and COVID care units) in sample collection
- Inclusion of other parts of the handwashing station such as the faucet spout and faucet lever
- Testing of other carbapenems against CRE
- Incorporation of PCR to determine resistance genes

REFERENCES

- Feretzakis, G., Loupelis, E., Sakagianni, A., Skarmoutsou, N., Michelidou, S., Velentza, A., Martsoukou, M., Valakis, K., Petropoulou, S. & Koutalas, E. (2019). A 2-year single-centre audit on antibiotic resistance of Pseudomonas aeruginosa, Acinetobacter baumanii, and Klebsiella pneumoniae strains from an intensive care unit and other wards in a general public hospital in Greece. Antibiotics, 8(2), 62. https://doi.org/10.3390/antibiotics8020062
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