

MRSA Environmental Surveillance: The Need for Standardized Protocols

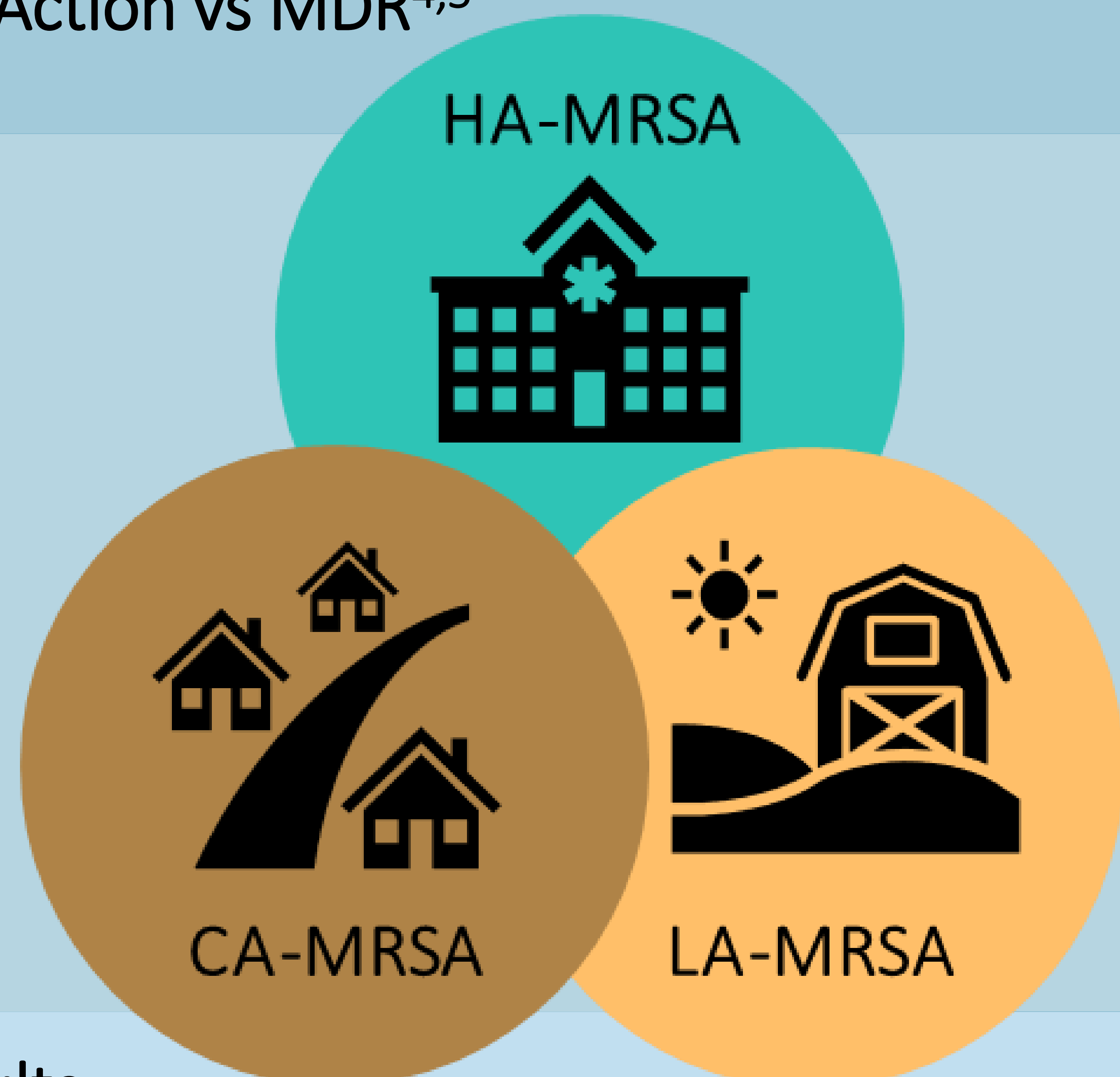
Pedro Pena^{1,2*}, Renata Cervantes^{1,2}, Carla Viegas^{1,2}

¹ H&TRC—Health & Technology Research Center, ESTeSL—Escola Superior de Tecnologia e Saúde, Instituto Politécnico de Lisboa, 1990-096 Lisbon, Portugal,

² NOVA National School of Public Health, Public Health Research Centre, Comprehensive Health Research Center, CHRC, REAL, CCAL, NOVA University Lisbon, Lisbon, Portugal

Introduction:

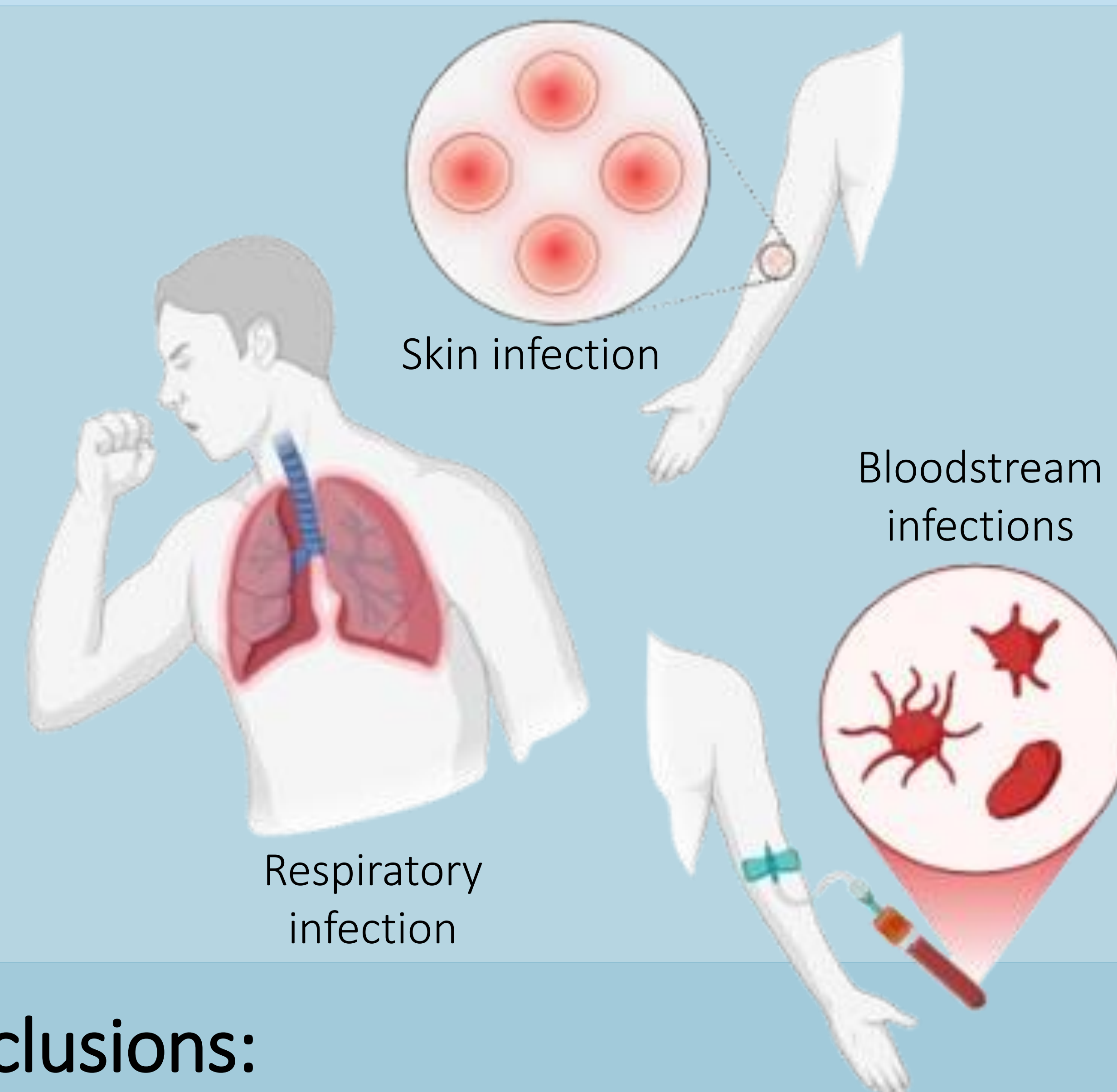
- HA-MRSA¹ → CA-MRSA² → LA-MRSA³:
Expanding Reservoirs;
- Exposure Beyond Hospitals: Farms, Public Spaces, Water, Dust;
- Standardize Methods → Unified One Health Action vs MDR^{4,5}



Objectives: assessing MRSA contamination in different environmental reservoirs, transmission pathways and sampling methodologies.

Methodology:

- A literature search conducted on: PubMed, Scopus, and Web of Science
- 95 studies that reported MRSA detection through environmental sampling.



Results:

- From 95 studies: MRSA detected mostly in public/occupational (11/95), healthcare (19/95), aquatic (13/95), wastewater (5/95), farms/vets (27/95)
- Sampling methods used: **Active** (28% of the studies): impaction, filtration, impinger; **Passive** (88% of the studies): dust, cloths, plates, wipes, swabs.

Discussion/Conclusions:

- MRSA's widespread presence across various environments underscores the importance of airborne transmission.
- Healthcare remains key, but public/agriculture sites are rising⁶.
- Harmonized surveillance protocols are urgently needed. Standard air sampling, media, and profiling are essential.

The One Health approach is crucial to mitigate airborne MRSA transmission and MDR risks.

