



Elizabethkingia Spp. Outbreak in a Ventilator-Capable Skilled Nursing Facility, Chicago 2023

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Disease Control Conference - September 19th, 2023

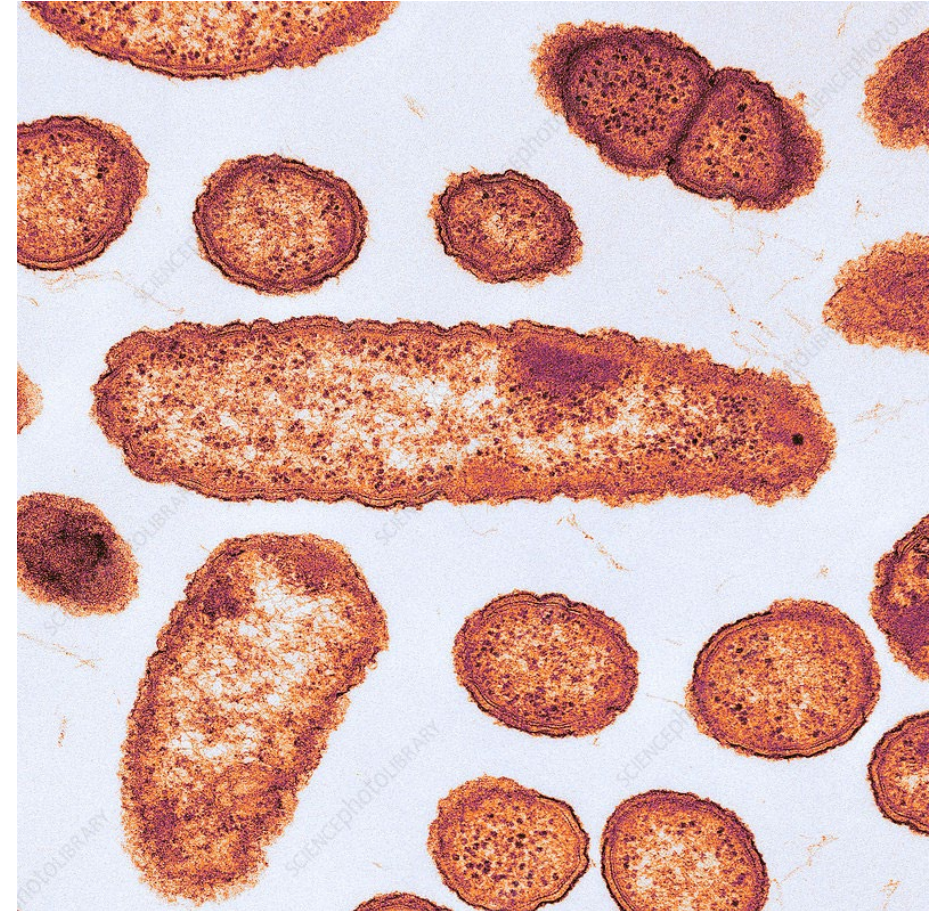


Agenda

- Introduction to *Elizabethkingia*
- Outbreak Timeline
- *Elizabethkingia* Cases
- Results
- Conclusions

★ *Elizabethkingia Spp.*

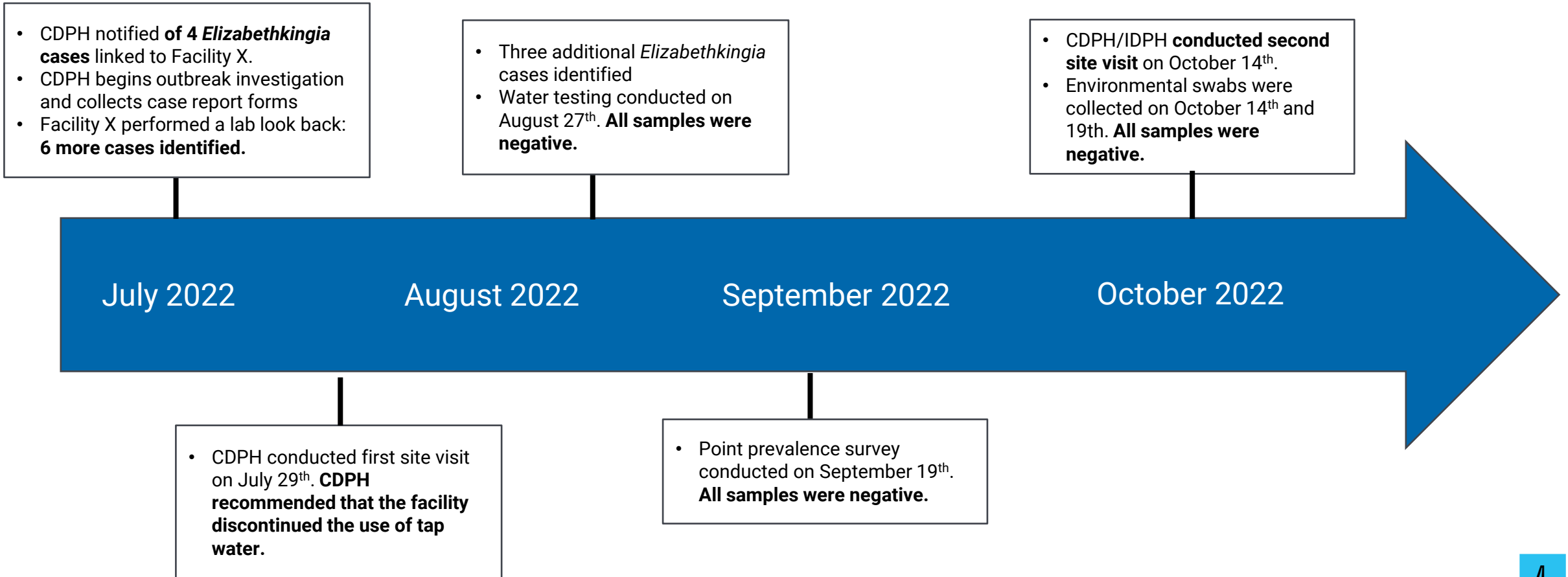
- *Elizabethkingia* is a bacteria that is commonly found in water and soil.
- *Elizabethkingia* is linked to causing outbreaks in healthcare facilities and cases are typically diagnosed through performing cultures of bodily fluids¹.
- Clinical Manifestations:
 - Bloodstream Infection
 - Pneumonia
- Species
 - *Elizabethkingia meningoseptica*
 - *Elizabethkingia anophelis*



References

1. Jean, S. S., Lee, W. S., Chen, F. L., Ou, T. Y., & Hsueh, P. R. (2014). *Elizabethkingia meningoseptica*: An important emerging pathogen causing healthcare-associated infections. *Journal of Hospital Infection*, 86(4), 244–249. <https://doi.org/10.1016/j.jhin.2014.01.009>

2022 - *Elizabethkingia* Investigation Timeline

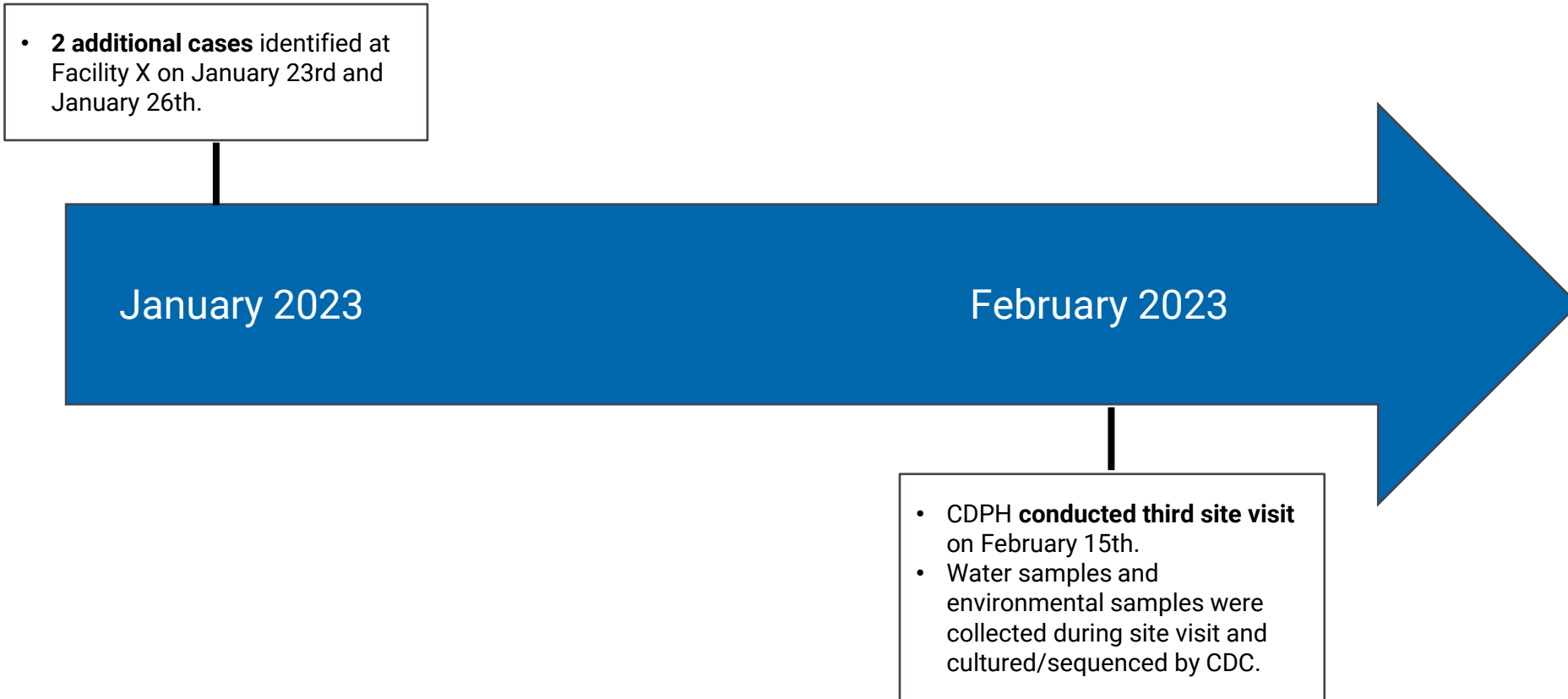




2022 Outbreak Summary

- **13 Cases** of *Elizabethkingia*
- Performed one point prevalence survey
 - Results were negative
- Performed environmental sampling twice
 - Results were negative
- Performed water sampling once
 - Results were negative
- Two site visits were conducted
 - CDPH recommended that the facility discontinued the use of tap water.

★ 2023 - Elizabethkingia Investigation Timeline



★ Water Sampling and Environmental Sampling (n=39)

11 bulk water specimens

- Dialysis water
- P-Trap Water
- First Catch Water
- Post Flush Water
- Ice Machine Water

16 sponge stick specimens

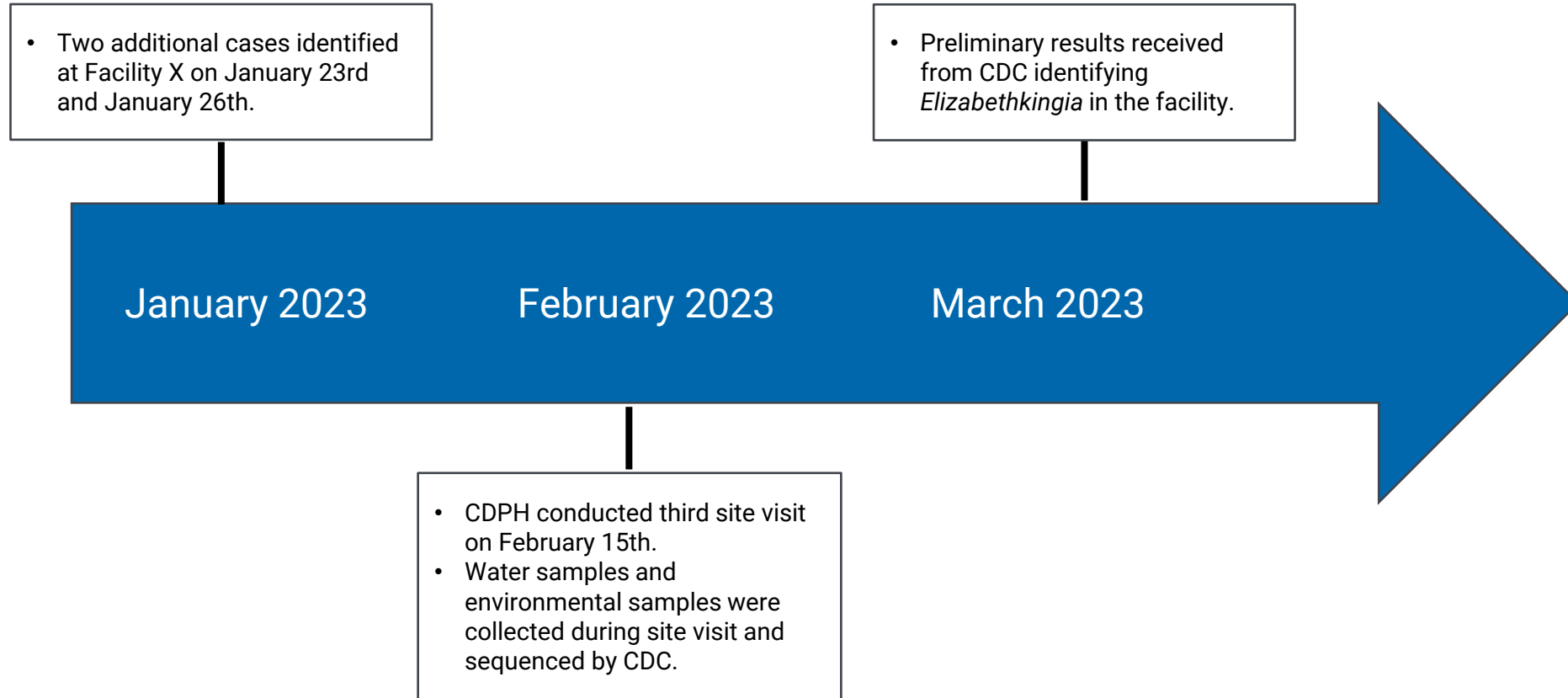
- Dialysis wall box
- P-Trap Water
- Sink Drain
- Sink Surface
- Sink Handles
- Sink Aerator

12 swab specimens

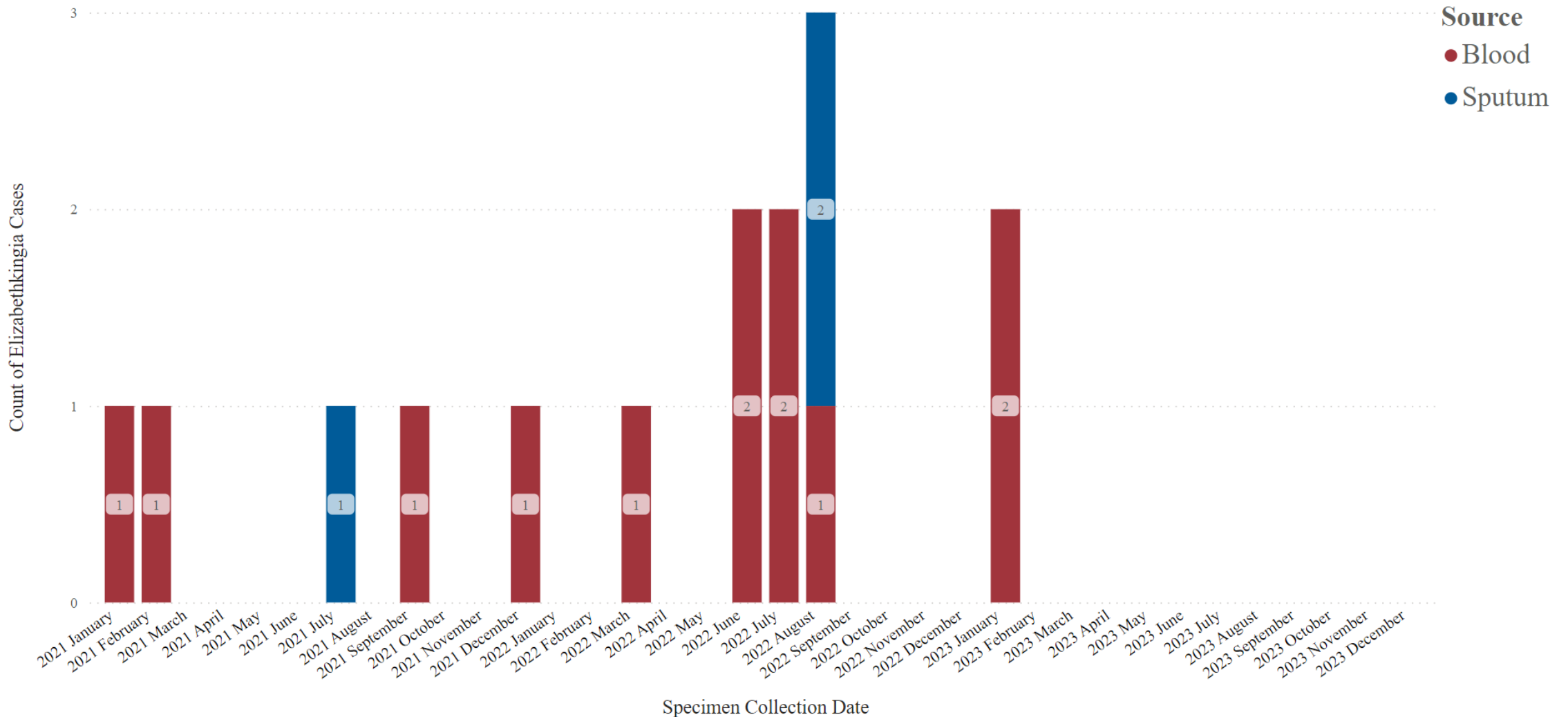
- Dialysis drain line
- Dialysis Sink Faucet
- Ice Machine
- Sink Aerator



★ 2023 - Elizabethkingia Investigation Timeline



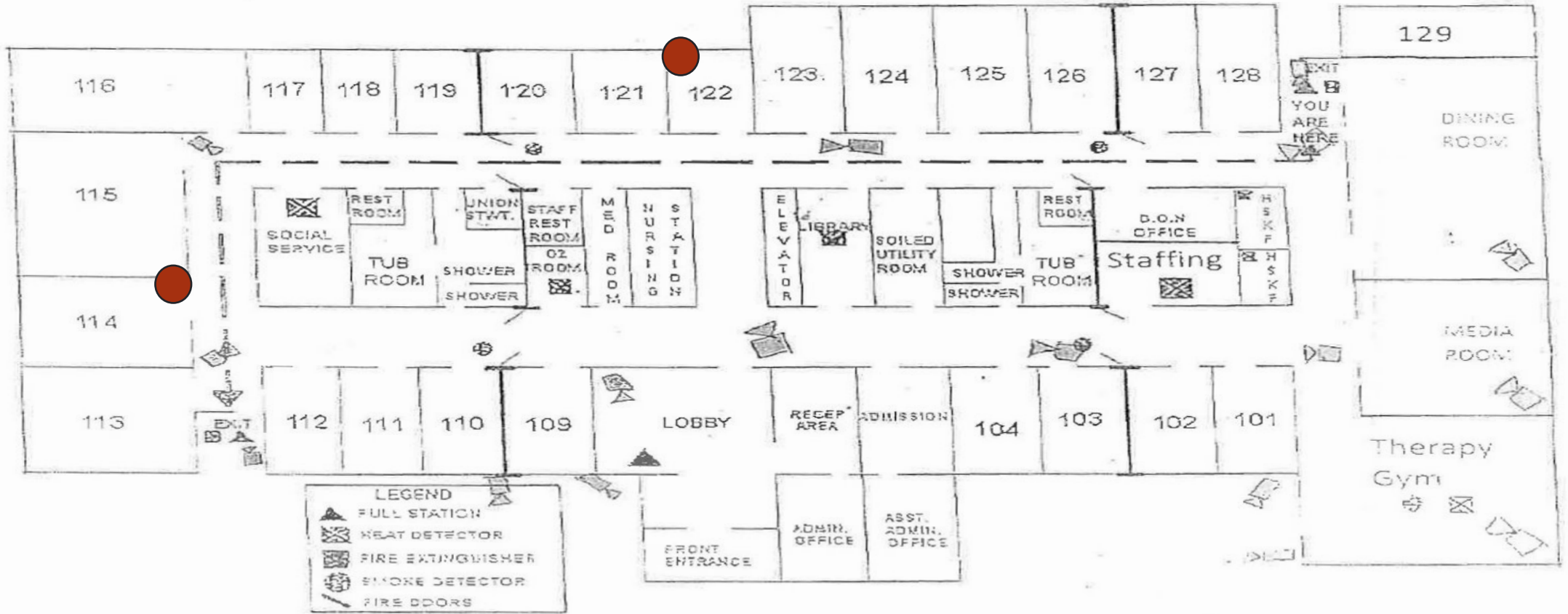
Elizabethkingia Epi-Curve, 2021 - 2023





First Floor Positives, 2021 - 2023

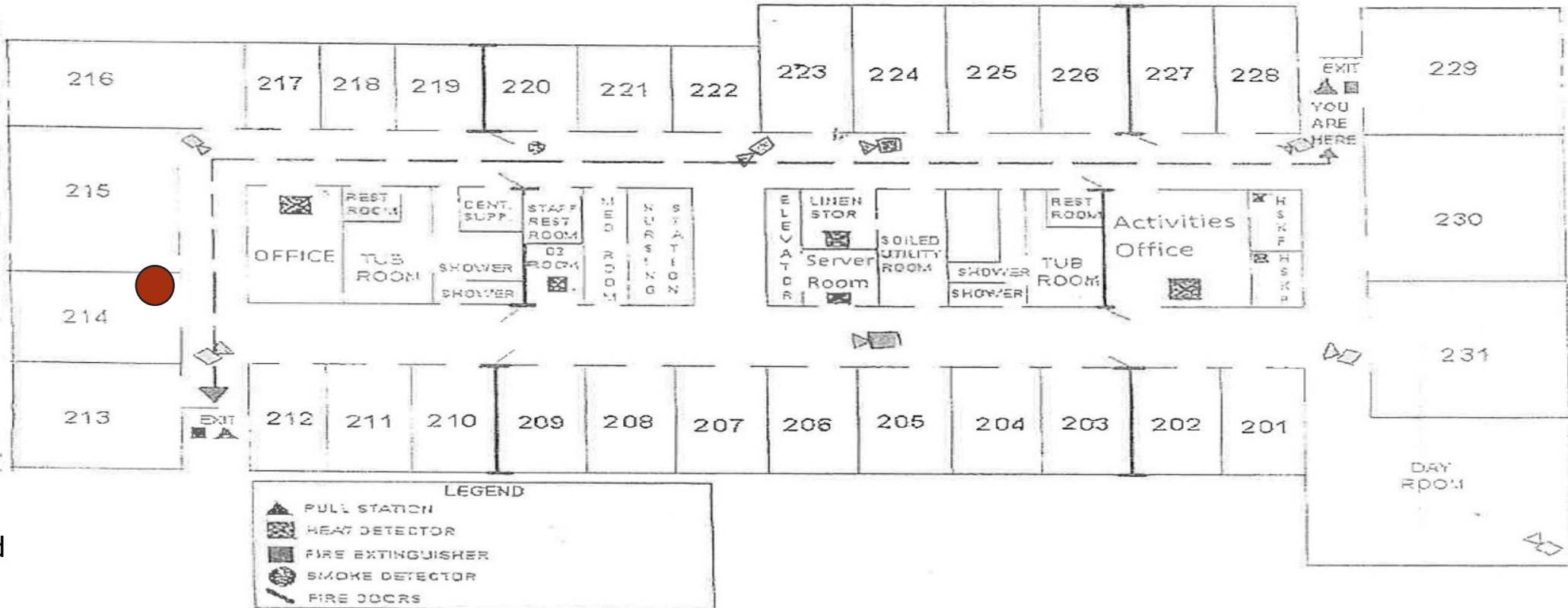
FLOOR PLAN OF FIRST FLOOR



- Blood
- Sputum

★ Second Floor Positives, 2021-2023

FLOOR PLAN OF SECOND FLOOR

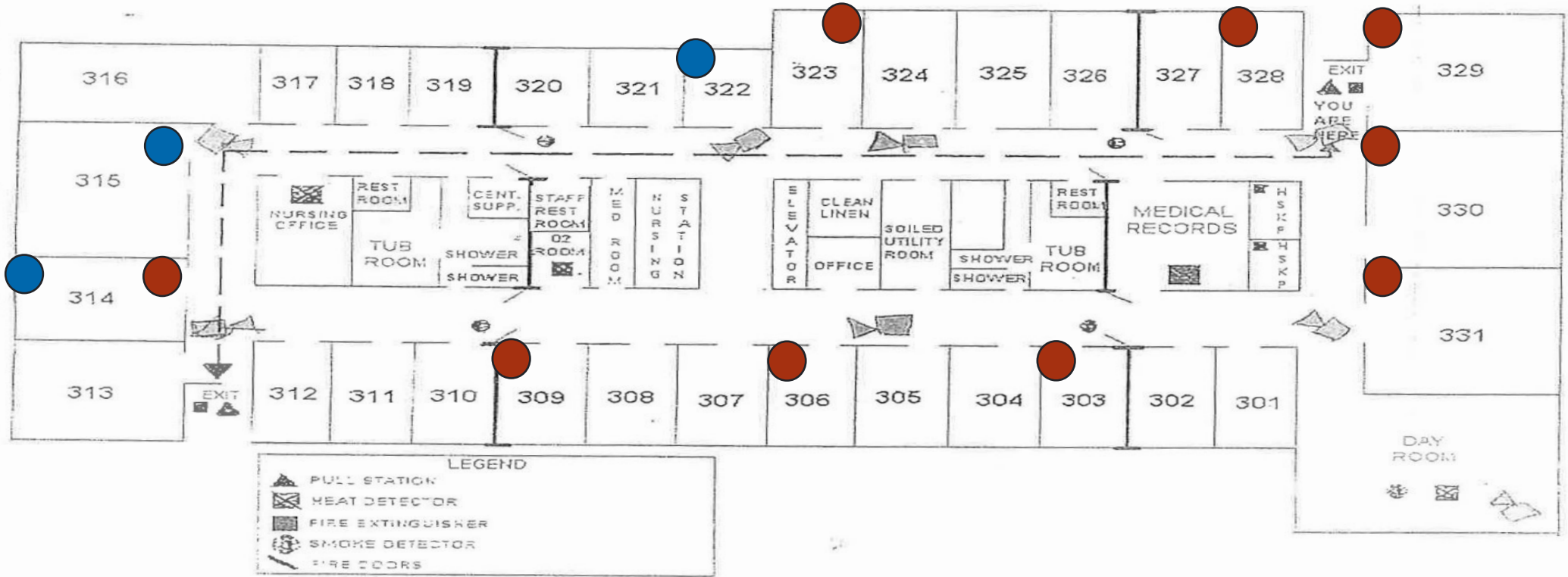


● Blood

● Sputum

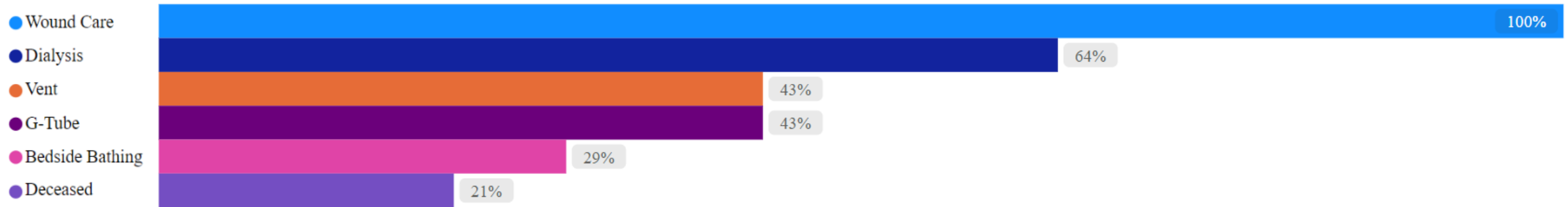
★ Third Floor Positives, 2021 - 2023

FLOOR PLAN OF THIRD FLOOR

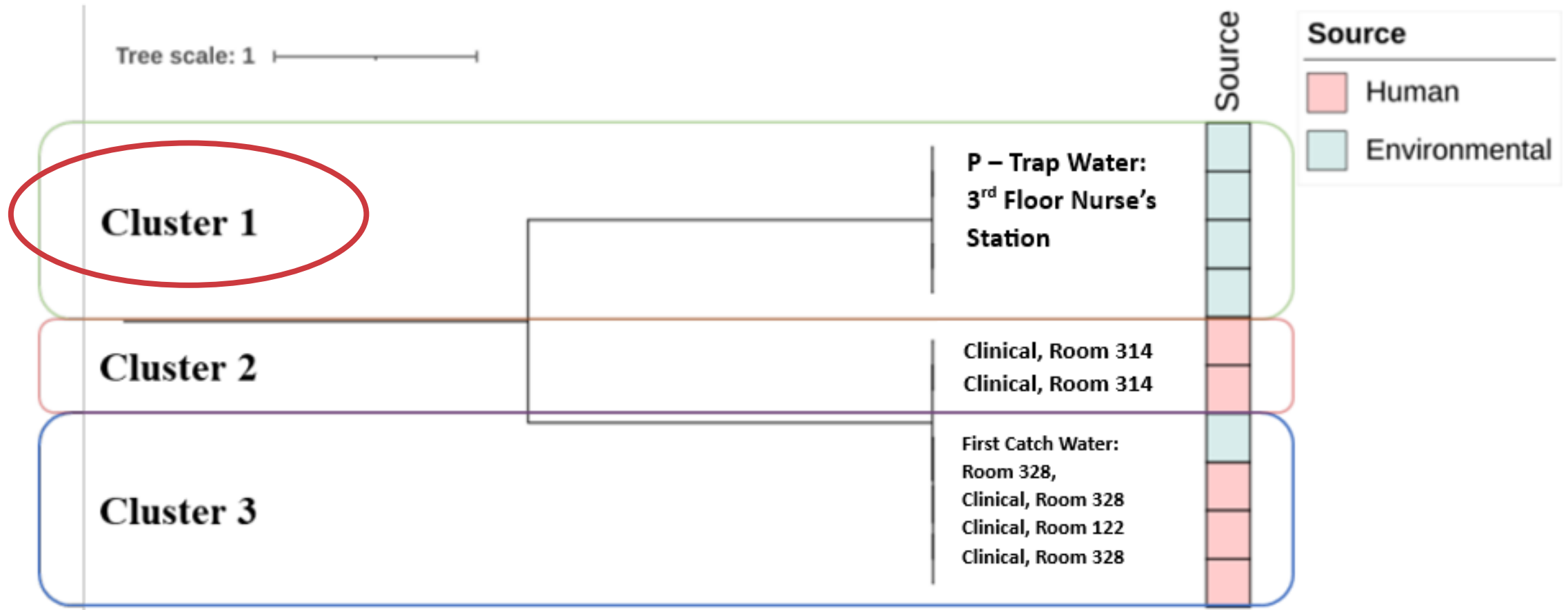


- Blood
- Sputum

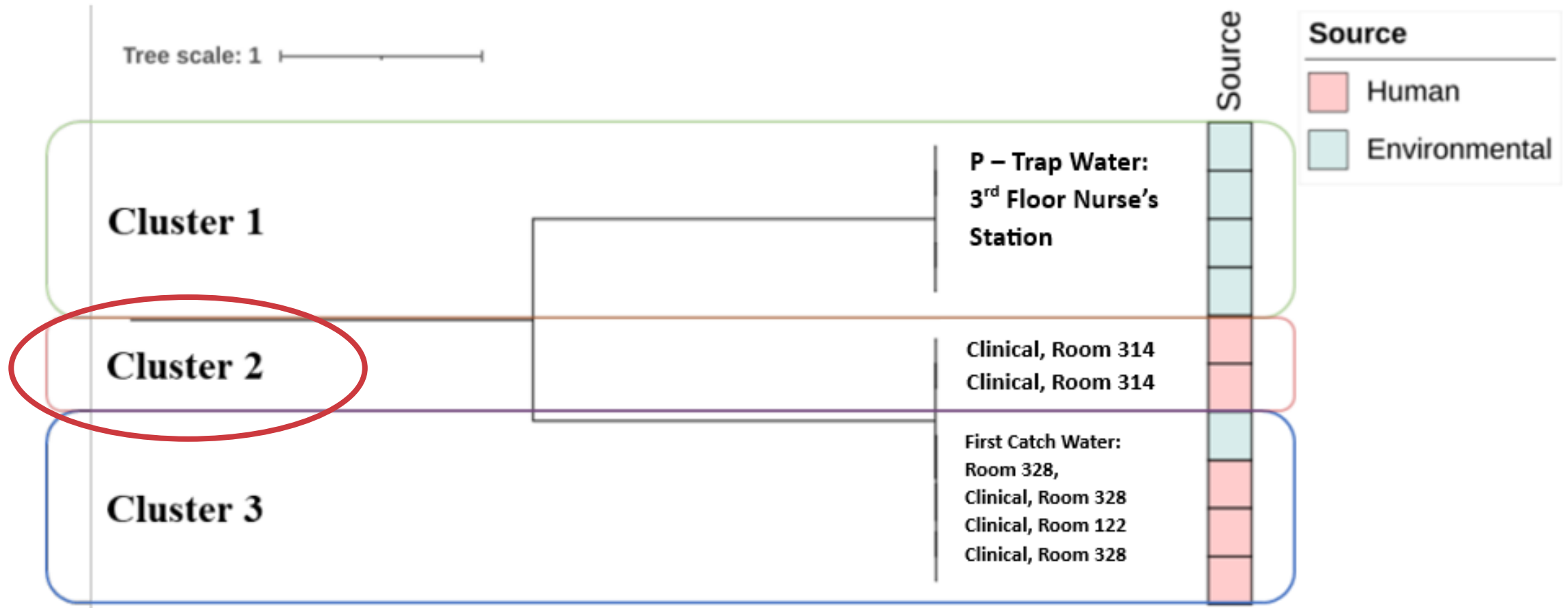
Patient Risk Factors and Outcomes



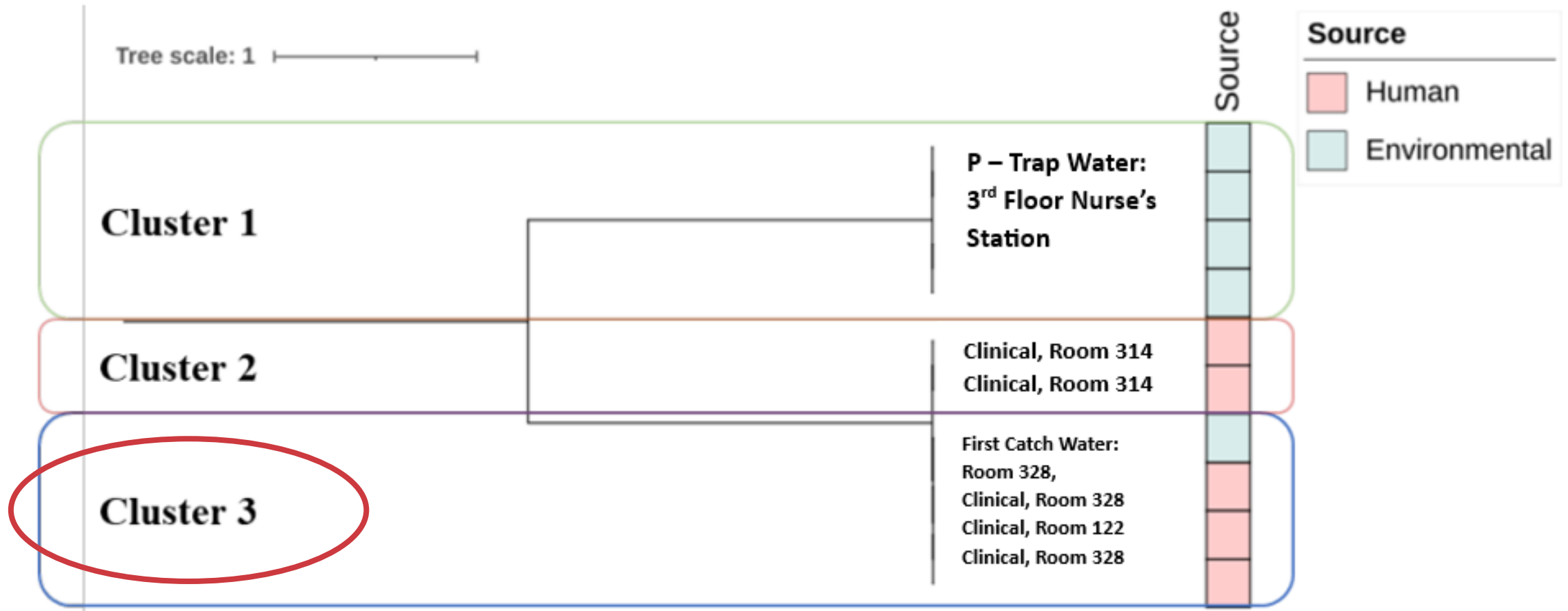
★ Results



★ Results



★ Results



★ Conclusions

- This investigation demonstrates a persistent outbreak of Elizabethkingia in a high-risk population at a vSNF, **likely related to *Elizabethkingia* persisting in biofilms within the water system.**
- Infection control recommendations:
 - Hand hygiene and environmental services cleaning
 - Avoiding tap water for bathing
 - Not disposing bodily fluid in sinks
 - Disinfecting or removing aerators
 - Disinfecting sink drains with scheduled foaming disinfectant application²
- A foaming disinfectant was recommended to the facility as a drain treatment, which demonstrated some efficacy. However, treatment was discontinued.
- Since January 2023, no additional cases have been identified.

References

2. Buchan, B. W., Arvan, J. A., Graham, M. B., Tarima, S., Faron, M. L., Nanchal, R., & Munoz-Price, L. S. (2019). Effectiveness of a hydrogen peroxide foam against bleach for the disinfection of sink drains. *Infection Control & Hospital Epidemiology*, 40(6), 724–726. <https://doi.org/10.1017/ice.2019.72>

★ Acknowledgements

- Co-Authors:
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Thank you!



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