

Rapid Results

Confident Decisions

Effective Interventions

Reduced Costs

## THE NEXT STEP IN OUTBREAK INVESTIGATIONS

### HAI's are among the leading threats to patient safety

Healthcare-associated infections (HAIs) are a widespread challenge for patient care, annually affecting 4% of hospitalized patients in the U.S.<sup>1</sup> and resulting in 99,000 patient deaths per year<sup>2</sup>. The rising prevalence of multi-drug resistant organisms (MDROs) has made HAIs particularly dangerous, increasing the pressure for rapid, effective interventions when an outbreak is suspected<sup>3,4</sup>.

### The economic impact to hospitals is significant

Hospitals invest far more to control HAIs than they realize. Patient isolation protocols and ward closings take hospital bed capacity offline. Staff and patient screening, decolonization, and monitoring measures, performed out of an abundance of caution rather than certainty of transmission, can cost thousands of dollars<sup>5,6</sup>. All of these interventions are necessary because failure to control an outbreak can result not just in patient harm, but in financial penalties for poor performance from payors and questions about patient safety from regulators and the media. Hospitals increasingly have both economic and patient care incentives to identify outbreaks as soon as possible.

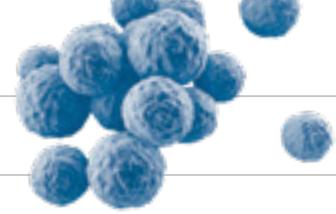
### Infection control needs faster, more precise diagnostics

The imprecise and subjective process used to identify a suspected transmission today leaves much to be desired<sup>7</sup>. Routine surveillance often identifies suspected cases that drive the implementation of expensive and burdensome cautionary control measures without the benefit of definitive confirmation<sup>8,9</sup>. In cases where an outbreak requires an urgent, wide-ranging intervention, a lack of precision and certainty can also compromise the speed of the organization's response.

### epiXact is your solution for effective decision making

Day Zero Diagnostics introduces the precision of whole genome sequencing (WGS) to HAI investigations with epiXact, our rapid service for determining pathogen relatedness. Within 1-2 days of ordering the service, you will receive an easy-to-read report with definitive and actionable results so you can quickly rule in or rule out an HAI transmission. epiXact helps you devote time and energy to the situations that matter most, and helps avoid unnecessary cost and disruption when an HAI event can be safely ruled out.

# RAPID RESULTS. DEFINITIVE ANSWERS.

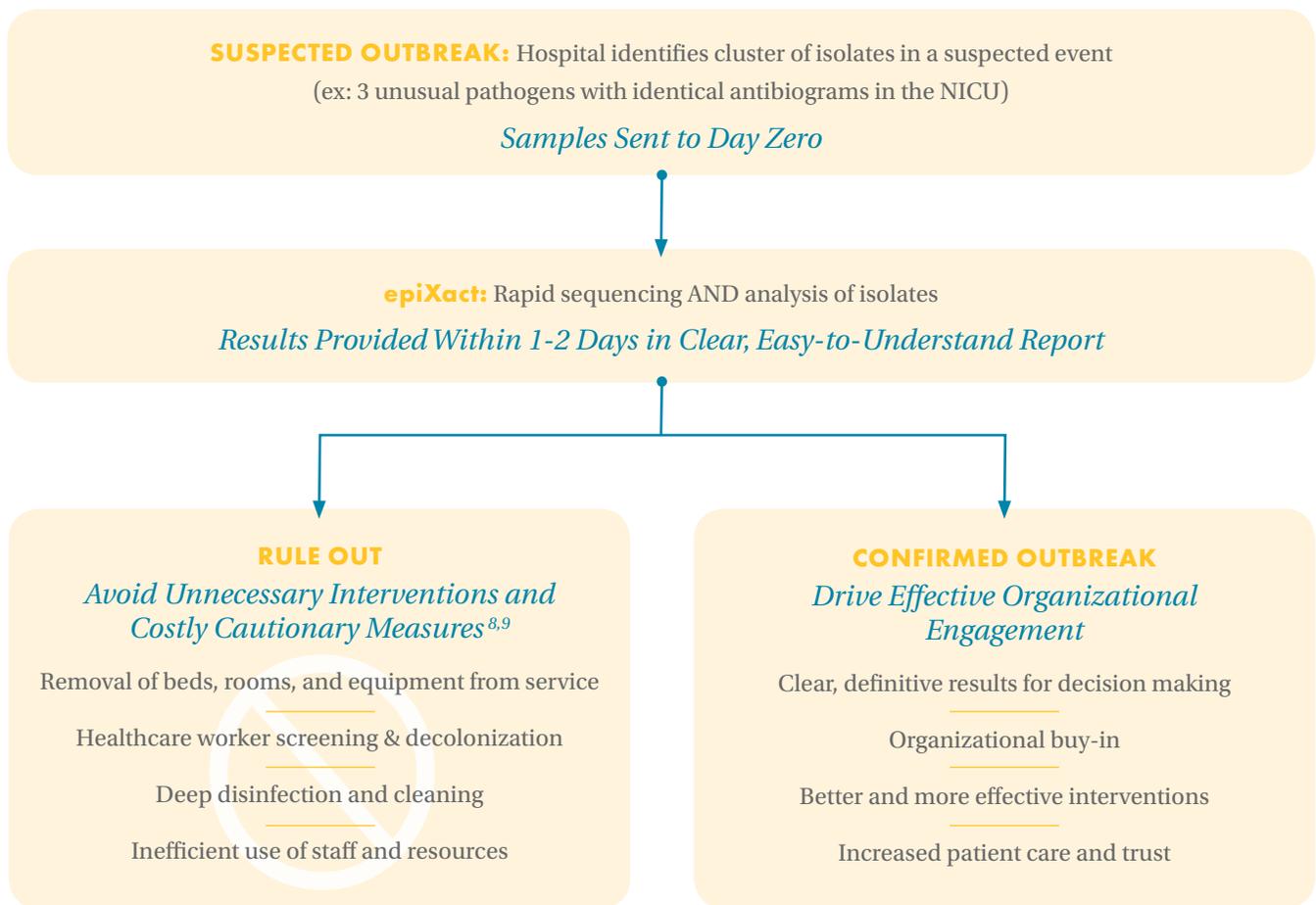


## Precise, reliable results with epiXact

epiXact is a rapid, sequencing based service which provides a definitive determination of the relatedness of pathogens in a suspected outbreak. WGS methods provide higher resolution and accuracy than traditional methods such as PFGE and MLST typing. epiXact helps you make high stakes intervention decisions quickly and confidently.

- Sequencing and analysis completed by a team of scientists with expertise in microbial genomics
- Easy-to-understand report designed for infection control professionals, not bioinformatic researchers
- Use of single nucleotide polymorphism (SNP) comparison of the whole genomes of all samples
- Results provided in 1-2 days to support timely decision-making

## Day Zero Diagnostics: rapid response partners in high stakes situations



REFERENCES: 1. Magill, S.S., et al., Multistate point-prevalence survey of health care-associated infections. *New England Journal of Medicine*, 2014. 370(13): p. 1198-1208. 2. Klevens, R.M., et al., Estimating Health Care-Associated Infections and Deaths in U.S. Hospitals, 2002. *Public Health Reports*, 2007. 122(2): p. 160-166. 3. Weiner, L.M., et al., Vital Signs: Preventing Antibiotic-Resistant Infections in Hospitals – United States, 2014. *MMWR Morb Mortal Wkly Rep*, 2016. 65(9): p. 235-41. 4. Neidell, M.J., et al., Costs of healthcare-associated infections with antimicrobial-resistant versus antimicrobial-susceptible organisms. *Clin Infect Dis*, 2012. 55(6): p. 807-15. 5. Greco, G., et al., Costs associated with health care-associated infections in cardiac surgery. *J Am Coll Cardiol*, 2015. 65(1): p. 15-23. 6. Zimlichman, E., et al., Health care-associated infections: a meta-analysis of costs and financial impact on the US health care system. *JAMA Intern Med*, 2013. 173(22): p. 2039-46. 7. Peacock, S.J., J. Parkhill, and N.M. Brown, Changing the paradigm for hospital outbreak detection by leading with genomic surveillance of nosocomial pathogens. 2018. 164(10): p. 1213-1219. 8. Huang, S.S., et al., Targeted versus Universal Decolonization to Prevent ICU Infection. *New England Journal of Medicine*, 2013. 368(24): p. 2255-2265. 9. Deurenberg, R.H., et al., Application of next generation sequencing in clinical microbiology and infection prevention. *Journal of Biotechnology*, 2017. 243: p. 16-24.  
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