

## NEWS RELEASE

### Day Zero Diagnostics Awarded NIH Funding for Technology to Improve the Speed and Accuracy of Detecting Hospital-Acquired Infections

*SBIR Phase I funding supports development of algorithm for analyzing whole genome sequencing data in seconds*

**Boston—July 10, 2019**—Day Zero Diagnostics, Inc., an infectious disease diagnostics company using genome sequencing and machine learning to combat the rise of antibiotic-resistant infections, today announced it has received a Phase I Small Business Innovation Research (SBIR) award from the National Institute of Allergies and Infectious Disease (NIAID) of the National Institutes of Health (NIH). The award will fund the development of *ksim*, an algorithm to automate the determination of infection relatedness in suspected hospital-acquired infection (HAI) outbreaks.

The rising prevalence of antibiotic-resistant organisms has dramatically increased the risks of HAIs, which already affect 4-5% of hospitalized patients in the U.S. and result in 99,000 patient deaths per year.<sup>1</sup> Preventing HAIs can lead to fewer patients requiring antibiotic treatment, shorter hospital stays, and reduced exposure to antibiotic-resistant organisms.<sup>2</sup> *ksim* promises to deliver a faster, more scalable, high-resolution approach for identifying HAI outbreaks. The algorithm processes whole genome sequencing data in seconds, without the need for manual analysis steps, or the degree of computational intensity and dedicated time from a computational biologist required to conduct traditional sequence analysis.

“We are pleased to be awarded this SBIR grant and are honored to have the support from NIH to further the development of *ksim*, our kmer-based algorithm for HAI analysis,” said Jong Lee, CEO and co-founder of Day Zero Diagnostics. “Our goal is to leverage *ksim*’s precision, speed, and computational efficiency to enhance and expand our recently launched epiXact<sup>SM</sup> service for investigating suspected HAI outbreaks. Additionally, *ksim* will enable transformational strategies for outbreak detection and intervention that are not currently possible because it allows the automated processing of large datasets in real-time.”

In this Phase I grant, Day Zero Diagnostics will continue the development and initial validation of *ksim* using data from published hospital outbreaks, a large dataset from a hospital, and data from the company’s epiXact service. epiXact provides hospitals with a determination of infection relatedness in a suspected outbreak using whole genome sequencing data that is analyzed by the company’s team of expert computational biologists. With *ksim* powering the epiXact service, infection control teams will be armed with actionable results in less than 24 hours, a timeframe that can have a significant impact on the intervention decisions a hospital might employ to improve patient safety.

The SBIR grant is supported by the National Institute Of Allergy And Infectious Diseases of the National Institutes of Health under Award Number R43AI148172. The content of this release is the responsibility of Day Zero Diagnostics and does not necessarily represent the official views of the National Institutes of Health.

#### **About epiXact**

epiXact is a rapid whole genome sequencing and analysis service designed to help infection control professionals determine which infections are part of a suspected outbreak. When infections are related, rapidly taking measures to control an outbreak can reduce patient harm,

avoid financial penalties from payers, and increase patient safety. The ability to quickly rule out a transmission event can help hospitals avoid costly and disruptive patient safety measures and unnecessary operational changes.

**About Day Zero Diagnostics**

Day Zero Diagnostics, Inc., based in Boston, is pioneering a new class of infectious disease diagnostics using whole genome sequencing and machine learning to combat the risk of antibiotic-resistant infections. The company's mission is to develop diagnostics capable of identifying both the species and the antibiotic resistance profile of a severe infection within hours, enabling physicians to provide faster and more precise treatments. Day Zero Diagnostics was founded in 2016 by a team of clinicians and scientists from Harvard University and Massachusetts General Hospital. The company has been recognized as a leading innovator by MedTech Innovator, TedMed Hive, Xconomy, HealthTech Arkansas, and MassChallenge HealthTech. For more information visit [www.dayzerodiagnostics.com](http://www.dayzerodiagnostics.com).

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