

# Novel method predicts impact of a covert anthrax release

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A new statistical method that can estimate the origin and time of an aerosolized release of the pathogen causing anthrax, following detection of the first few cases has been developed by researchers from the Medical Research Council (MRC) Centre for Outbreak Analysis and Modelling at Imperial College London in collaboration with the Health Protection Agency's Microbial Risk Assessment group.

The method, described in an article published April 10 in the open-access journal [PLoS Computational Biology](#), predicts where the most critically affected areas will be following the release of this highly pathogenic agent, which may enable preventative treatment of individuals at risk and protection from the disease.

Previously published methods can estimate the date and scale of [anthrax](#) release but not the source location or geographic extent of human exposure. The new method uses information about the first people infected, including when they started to experience symptoms of infection and where they live and work, combined with recent weather information, such as wind direction.

Dr Judith Legrand, lead author of the study from the MRC Centre for Outbreak Analysis and Modelling, said: "We have devised a new way to forecast the future course of a potential outbreak and the people and geographic areas likely to be worst affected."

Anthrax has the potential to cause a large number of deaths in the event

of a covert, open air release. If such a release were to occur, it is critical for public health decision makers to evaluate its extent and the potential impact on the population and then to identify the people most at risk of infection as soon as possible.

Dr Judith Legrand added: "It is critical to treat people as soon as possible after exposure to anthrax. While forecasts based on small numbers of early cases are less reliable than those obtained later in an outbreak, we show that treating individuals based on early estimates is still likely to save lives overall."

More information: Legrand J, Egan JR, Hall IM, Cauchemez S, Leach S, et al. (2009) Estimating the Location and Spatial Extent of a Covert Anthrax Release. PLoS Comput Biol 5(1): e1000356.

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