



## THE UNIVERSITY of TEXAS

HEALTH SCIENCE CENTER AT HOUSTON

Office of Technology Management

### INTEGRATIVE BIOSURVEILLANCE SYSTEM

**Market:** Recent events, as well as development of new technologies, have fueled a desire to have surveillance systems that can be employed by local, state and federal governments for the purpose of monitoring public health events. Without these systems, an outbreak of a given disease will spread in large areas without triggering a timely alert that can initiate appropriate response and mitigation efforts by emergency responders. With globalization, this type of gap may present dangers when, for instance, a TB outbreak occurs in one area, but information is not transmitted to nearby areas.

**Competitors and Current Problems:** Several systems exist that assist governmental entities in determining if a public health event is occurring, and making appropriate alerts. These systems however are often limited to certain kinds of health information that they can process. For instance, in order for most of these systems to work, a doctor in county X must manually input "TB" in order to trigger an alert. If he inputs "bacterial infection of the lung" the system may not be able to recognize that there is a potential TB outbreak looming. An ideal system would be able to integrate with multiple databases and decipher what different ways of saying the same thing actually mean, so that the term "bacterial infection of the lung" would be interpreted by the system as a potential TB case. It is also desirable that system can make sense of variety of other information to interpret significance of a public health finding. For example, most existing systems are not able to contextualize health information received from hospitals (Asthma Attacks), in light of environmental safety data received from sensors, and detectors (High Large Particles Concentration in the Air).

**The Technology:** To address this problem, researchers at the UT Health Science Center at Houston have developed a system that allows information from multiple disparate data sources to be integrated and mined for biosurveillance purposes. In its most obvious permutation, this system can be used to link up local hospital databases, county health department databases, and federal health entity databases (the CDC for instance). Once the data from these sources is integrated, it can be used to track and/or determine whether there is a brewing outbreak of disease, a bioterrorism attack, and whether there are resources that can be mobilized effectively to protect public health. Additionally, the functional system can be used in any context where integration and contextualization of information from multiple disparate data sources is desirable. Example of such environments are integrating patient clinical and financial data in large healthcare systems for quality of care and business intelligence, integration of clinical research databases for translational research and drug discovery by pharmaceuticals.

#### NON-CONFIDENTIAL TECHNOLOGY DESCRIPTION

The preceding is intended to be a non-confidential summary of a novel technology created at the University of Texas Health Science center at Houston (UTHSCH), for which the University has obtained patent protection.

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**License Available:** Exclusive or non-exclusive worldwide

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