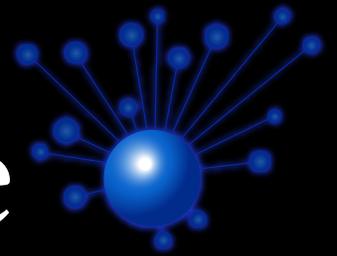


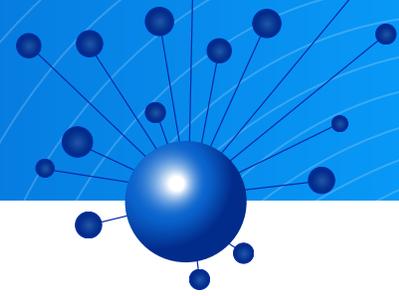
BioSense



Benefits of BioSense Today and in the Future

For more information visit the BioSense web page: <http://www.cdc.gov/BioSense>





BioSense Today

BioSense is a national surveillance program that monitors the health of the population of the United States. The application monitors diseases that occur due to bioterrorism or infections like influenza or other health events related to natural disasters. Health and public safety personnel use the BioSense application to detect, track, and respond to disease outbreaks as they emerge.

The BioSense application, developed and hosted by the Centers' for Disease Control and Prevention (CDC) National Center for Public Health Informatics (NCPHI), is one part of the nation's overall bioterrorism and emergency preparedness strategy.

The BioSense Program Goal

To support a national surveillance network through which healthcare organizations, public health, Health Information Exchanges (HIEs), and other national health data sources are able to contribute to the picture of the health of the nation.



To achieve its goal, the BioSense program facilitates activity in three areas

- Local and state public health coordination of data for surveillance
- Collaboration with partners to develop the workforce
- Advances in science and technology



BioSense relies on health data collected by:

- Local and state health departments
- Health Information Exchanges (HIEs)
- Hospital emergency departments
- National clinical laboratories
- Department of Defense (DoD) and Veterans Affairs (VA)

Access to the rich clinical data provided by these data sources provides a real-time picture of the nation's health and helps public health and health providers make effective decisions and coordinate timely responses during a crisis.

The Importance of Privacy

While information about the health of individuals in a community is necessary for national preparedness, preserving the privacy of U.S. citizens is equally important to the BioSense program. NCPHI works with organizations that provide data (like hospitals) to guarantee the confidentiality of data. Individual names or other personal identifiers are not used within the BioSense application. BioSense collects only necessary information—such as the type of illness, the patient's gender and age, and zip code of residence.

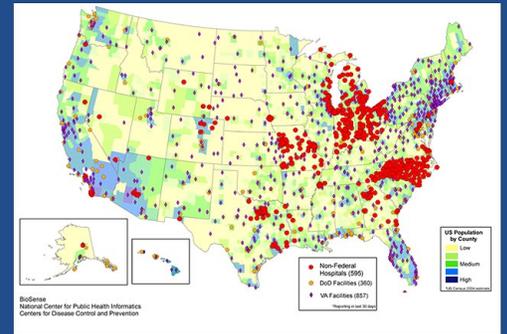


How the BioSense Application Works

The BioSense application is available to authorized health personnel via a secure web-based interface and uses only electronic health data that already exists within health facilities. BioSense tracks patients' health complaints and symptoms to identify trends that may indicate an outbreak or public health event. For example, public health officials use the BioSense Influenza Module to track flu-like symptoms to recognize the onset of an early influenza season.

Because the BioSense application shares existing, real-time information with state, local, and federal health officials, it can help:

- Confirm or refute the existence of a health event
- Monitor the size, location, and rate of spread of an outbreak



BioSense Facilities and US Population Density by County - December 2008

Progress through Partnerships

A core value of the BioSense program is its commitment to working with partners. Organizations work with BioSense to develop innovations in tracking health events and expanding disease detection analysis.

Currently there are more than 500 entities using the BioSense application, including hospitals; federal, state, and local facilities; and CDC. In addition, nearly 600 healthcare facilities in some of the most populous cities in the United States are now transmitting near real-time data to BioSense.

Through BioSense, public health authorities in these cities have access to the same data CDC receives. A city can also customize the data it sends to CDC for analysis. For example, in partnership with CHRISTUS Health, the BioSense program has developed automatic laboratory reporting tools that are cost effective, complete, and timely. The information reported by these lab tools helps both Christus Health and public health officials identify a particular disorder and determine treatment.

BioSense Research and Analytical Support

BioSense data are continually monitored by analysts in the BioIntelligence Center (BIC). These analysts review and interpret BioSense data daily for trends and statistical increases in diseases. The BIC is instrumental in providing a national health perspective on biosurveillance and plays an integral role in enhancing the quality of BioSense.

Local and State Public Health Use of BioSense

Recent emergencies, such as wildfires and hurricanes, demonstrate how the BioSense application supports state and local public health access to timely information and helps with decision making.

California Wildfires:

During the California Wildfires, the BioIntelligence Center provided reports to the California Commissioner of Health using BioSense data on the prevalence and trends of respiratory illness and burns in the areas affected by the fires. In a letter to the CDC Director, the Commissioner highlighted the utility of BioSense and praised the reports provided by the BIC.

Hurricane Ike:

BioSense aided surveillance efforts in Harris County, Texas related to injuries and illnesses during Hurricane Ike. This information helped health officials confirm their decision to create and distribute press releases alerting the community about generator and food safety issues.



The Future of BioSense

Building on the foundation of the BioSense program, NCPHI plans to implement a fully functional national system capable of giving decision makers a clear picture of the nation's health. The plan will capitalize on BioSense successes in technology development, research, partnerships, and system networks.

The BioSense program will focus on building state and local capacity to track public health events, while also supporting public health workforce development and scientific research and innovation.

Building Capacity

Through the BioSense Program, NCPHI will support state and local public health departments in building biosurveillance systems that enhance their ability to track outbreaks or other public health emergencies.

Data will be collected and analyzed by state and local public health and aggregated data will be shared at regional and national levels to strengthen awareness of biosurveillance trends. As a result, these cross-jurisdictional partnerships will improve efforts in biosurveillance across the nation.

The BioSense Program will also strengthen the infrastructure and biosurveillance tools to enhance network systems for data exchange and monitoring. Methodologies will be developed to allow capabilities for Electronic Laboratory Reporting (ELR) and Case Recognition to support routine public health practice. Providing this solid infrastructure and biosurveillance tools will significantly improve the delivery of healthcare information.



Connecting through Health Information Exchanges (HIEs)

HIEs include both private and public organizations that exchange health information via electronic processes. Such exchanges can significantly improve the dissemination of health information and accelerate biosurveillance. This initiative relies on coordination and communication among partner groups to share knowledge and lessons they have learned.

BioSense Program goals in this area include:

- Stimulating relationships between public health and clinical care
- Developing enhanced network systems for data exchange and sharing
- Supporting additional HIEs to increase national coverage for biosurveillance



Solving Problems as a Community

A central building block of our nation's health preparedness is extensive collaboration and commitment from the public health community. NCPHI recently launched a Communities of Practice (CoP) initiative to facilitate collaboration and equal stakeholder input. The initiative will enable public health professionals to share their expertise and resources with colleagues and help develop a workforce that is capable of taking a community approach to strengthen our nation's biosurveillance.

Building the Power of Technology

The BioSense program is currently focusing on the use of grid technology. A “grid” is a way to connect multiple computers, across the country to allow data sources to share and view large amounts of health information. Technological advances will allow grid participants to analyze data in other jurisdictions without moving the actual data, which is an important step forward in overcoming policy barriers to moving data out of a jurisdiction.

Grid technology benefits public health by:

- Reducing redundant data collection
- Allowing secure, controlled views of data
- Avoiding costly investments in processors or data libraries



Exploring Innovative Science

The BioSense program is much more than the application itself. As the technology for biosurveillance evolves, the science must grow as well. As a response to this need, NCPHI has funded a number of research grants, cooperative agreements, and Centers of Excellence to explore new technologies. These advances provide a better understanding of the BioSense data and the ability to quickly and accurately identify the nature of spikes in the data. In addition, NCPHI has granted contracts for partners to explore the most efficient method of using data from HIEs for biosurveillance. These advances will serve to enhance the understanding and utility of BioSense.

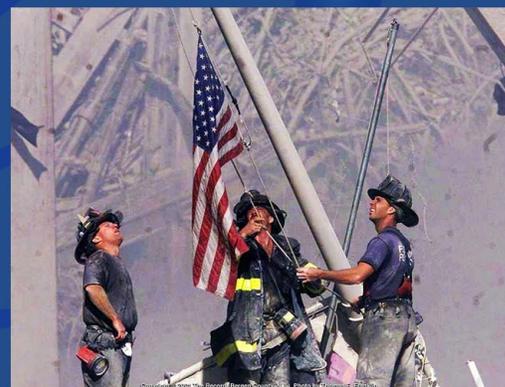
Protecting our Nation

BioSense has achieved major milestones in building partnerships, developing innovative technology, and fostering the exchange of health information between public health and healthcare. These achievements have strengthened our nation's preparedness for public health emergencies.

Building an effective real-time national biosurveillance system will:

- Improve timely tracking of public health events
- Provide better insight into the U.S. population's health
- Sustain progress toward a healthier nation

Americans at home will be protected from emerging health threats through the benefits of an integrated national BioSense network, and the outcome will be safer communities where people across the nation will live healthier and longer lives.



For more Information

Visit the BioSense web page: <http://www.cdc.gov/biosense>

Email BioSense: biosensehelp@cdc.gov



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