Increased collaboration between CDC scientists and health officials led to a reduced number of required SAS programmers from six to one. This led to the removal of Opana ER from the market by the FDA.

Learn how the CDC used Leidos’ secure end-to-end big data analytics solution to reveal previously undetected information and possible outbreak factors for a community in Indiana.

**The Challenge**

Local health officials, unprepared to respond to these alarming spikes, invited the Center for Disease Control (CDC) to help. CDC needed to help their SMEs, scientists, executives, and researchers — who have little, if any, computer programming experience — use the power of data analytics to delve deeper into the questions about this outbreak and paint a more complete picture of the conditions that made the outbreak so large.

**The Leidos Solution**

As part of the outbreak investigation the CDC used Leidos’ big data analytics platform CAADS™ (Collaborative Advanced Analytics & Data Sharing), an end-to-end environment for big data analytics and decision support tailored to the specific CDC need.

**Outcomes**

- **2017: First large HIV-1 outbreak in Indiana**
- **Identifying Community Health Risks with Data-derived Insight**
- **CDC data scientists, in collaboration with the Leidos CAADS team:**
  - Advanced interactive visualization allowed CDC users to identify infection clusters spanning geographic regions, which were reanalyzed to understand large-scale transmission patterns.
  - More than 200 confirmed cases in a population of ~4,500 people.
  - Local health officials, unprepared to respond to these alarming spikes, invited the Center for Disease Control (CDC) to help.
  - CDC needed to help their SMEs, scientists, executives, and researchers — who have little, if any, computer programming experience — use the power of data analytics to delve deeper into the questions about this outbreak and paint a more complete picture of the conditions that made the outbreak so large.
- **Deployment for the outbreak response optimized to support analysis of changing data sources and types without complex ontologies and data structures.**
  - Chosen for ease of use — enables users with limited computer proficiency to perform analytics.
- **Single user interface integrating COTS data analytics tools into a secure and collaborative workflow with no coding.**
  - Self-service, data-centric analytics platform.
  - Data ingest and cleaning
  - Analytics
  - Reporting and discovery visualization
  - Rules generated through advanced analytics optimized outbreak response and improved surveillance activities in Indiana and other states.

These insightful outcomes can be used to shape public health policy and initiatives. By determining which other areas in the USA have similar conditions, interventions can be put into place to prevent similar occurrences.

**Goal**

- Monitor the outbreak
- Uncover its cause
- Determine how to stop it
- Manage the disease
- Prevent onward transmission in the context of the risk factors

**Obstacles**

- Time required to prepare data for analytics
- Time required to create models and perform analysis
- Everything took too much time and required a lot of IT skills/intervention

**Outcomes**

- Cost of the effort given the Shepard Award, the highest award CDC gives

**Leidos CAADS™**

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Data ingest and cleaning

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