

Data Science

CDC's Injury Center Uses Data and Research to Save Lives

CDC's Goals for Leveraging Data Science to Prevent Injury and Violence

Expand the availability of timely data by using novel data sources and improving current public health data sources

Improve rapid identification of and response to emerging health threats through innovative approaches such as harnessing real-time and novel data like social media and search data

Increase access to accurate health information and prevent misinformation and disinformation

Improve linkage of disparate health data to enhance its usefulness

Share information in compelling, useful, and accessible ways through static and interactive data visualizations

Increase efficiency of analytic and scientific processes

Expand the data science capacity of state, local, tribal, and territorial partners

Our Mission

Improve injury and violence prevention through data science methods such as machine learning, data linkage, data visualizations, and predictive analytics



Addressing Injury and Violence Prevention through Data Science

Public health data science blends techniques from computer science, statistics, and epidemiology to extract insights from data. It often focuses on novel, large, and complex data sources and applies methods such as machine learning and natural language processing. Data science can help public health efforts to prevent injury by improving data timeliness, identifying emerging health trends, and using novel data sources.

CDC Is Advancing Data Science Goals by

- **Strengthening** our data science workforce
- **Expanding** public health partnerships
- **Advancing** information technology infrastructure
- **Increasing** investments in data science activities

Examples of CDC Data Science in Action



Near real-time data from **emergency department visits** revealed national trends in suspected drug overdoses and suicide more quickly than traditional methods



Data from **prescription medication sales** provided a timely picture of dispensed opioid analgesic prescriptions, medications to treat opioid use disorder, and overdose reversal medications (**Vital Signs**)



Pairing multiple **social media and health data sources with machine learning algorithms** allowed for prediction of national- and state-level suicide trends for more timely public health response

