Mathematica
Progress Together

Prevent, Detect, and Respond

Get the data and policy expertise you need to advance equity and transform public health systems.

Today's most pressing public health challenges span multiple sectors and disciplines. Mathematica's experts in health, human services, and data science work with community, federal, state, foundation, and private-sector partners to advance equity and public health using evidence-based solutions.

Transform and modernize data sharing and data systems across public and private sectors.

Predict outcomes and adapt to give communities better data and capacity to prepare for future health threats.

Study impact and respond with data insights to achieve more equitable outcomes.

Mathematica advances public health solutions with better data

Using claims data to improve public health. Mathematica helps the Centers for Medicare & Medicaid Services integrate and align federal and state data sources to support policy decisions.

- We prepare the Transformed Medicaid Statistical Information System Analytic Files converting complex claims data into usable files for researchers and CMS staff. With these files, we develop the annual Substance Use Disorder Data Book and dashboard on Medicaid beneficiaries treated for substance use disorders.

Forming data partnerships to advance public health solutions. Mathematica partners with companies like Truveta, which provides electronic health record data from its collective of 30 health systems, to provide a more complete picture of the communities our clients serve.

- Working with Truveta, we provide grantees of the Robert Wood Johnson Foundation Health Data for Action program with access to clinical data augmented with social determinants of health and other data.

Mathematica develops novel models and methods to inform public health decisions

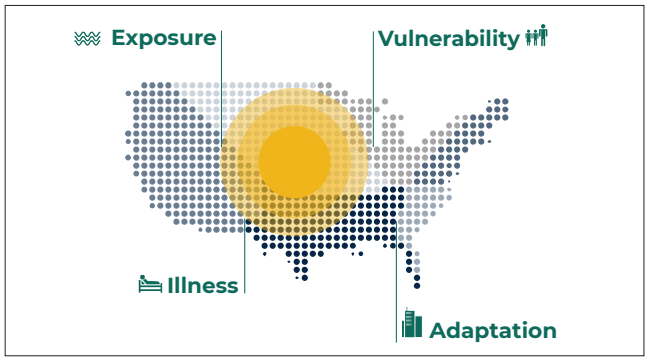
Pioneering new methods. Mathematica's statisticians, data scientists, and researchers develop analytic strategies tailored to solving critical public health problems.

- We used machine learning to classify free-form text of medication information in the Social Security Administration's data to better understand patterns of opioid use among applicants for Social Security Disability Insurance.
- We developed models using Bayesian methods to estimate excess mortality resulting from the COVID-19 pandemic that accounted for seasonality, time trends, and other variations. We used these models to help control for the impacts of the COVID-19 pandemic in our evaluation of Comprehensive Primary Care Plus, one of the nation's largest primary care delivery models.

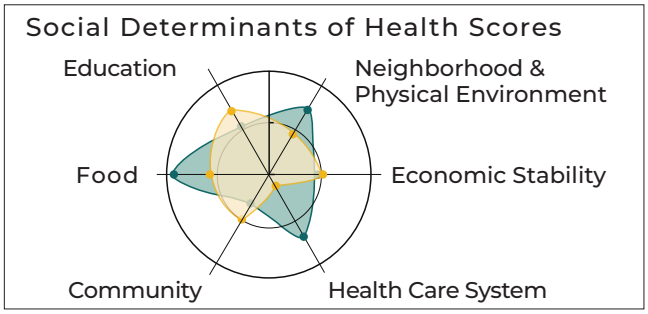
Developing flexible disease transmission models. Mathematica builds novel disease transmission models and adapts these models to new contexts.

- We developed an agent-based model to simulate the Ryan White HIV/AIDS Program's impact on the spread of HIV/AIDS for the Health Resources and Services Administration.
- For the Rockefeller Foundation's K–12 Testing Protocol Demonstration Project, we simulated how different COVID-19 testing protocols affect in-school infections and in-person learning, and we developed an impact simulator so districts and public health partners could assess how well testing strategies might perform in future school years.

Mathematica's analytic tools advance equity in public health



Boosting climate resilience. Mathematica's ClimaWATCH tool links national Medicaid claims data; localized weather metrics; and social, demographic, geographic, environmental, and infrastructure indices to visualize communities' vulnerability to heat-related health risks. ClimaWATCH can help identify regions where heat waves have concentrated, identify disproportionate risks, and more equitably target resources.
Explore > https://climawatch.climate.mathematica.org/



Connecting communities to promising practices. Mathematica's Community Connector is an open-source tool that provides a picture of a county's demographics and social needs and identifies similar counties. Users can explore counties that have had success in addressing social needs and improving well-being to inform their own evidence-based, equitable responses to health crises.
Explore > https://communityconnector.mathematica.org/

Let's Progress Together.

Learn More > https://mathematica.org/sp/public-health Contact US > info@mathematica-mpr.com

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