

Using IBM Analytics@Scale to Align Analytic Solutions to Public Health Leadership Priorities

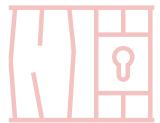
Sunaina Menawat, Associate Partner
Public Health, IBM Government Health
and Human Services,
IBM Consulting
sunaina.menawat@ibm.com

Mark Freeman, Associate Partner
Digital Transformation and
Technology Services,
IBM Consulting
mfreeman@us.ibm.com

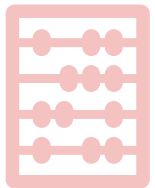
February 28, 2023

Today's challenges offer opportunities for **data, technology, and people** to advance the future of public health

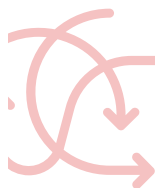
Challenges



Unprecedented **data volume, variety and velocity** pushed traditional methods of data processing and analytics to the breaking point



Internal **demand for near real-time insights** in support of dynamic pandemic response was not well served by traditional methods of data processing and analytics



Public **demand for understandable, timely and reliable information** was not well served by traditional reporting methods

Opportunities



Create **modern, response-ready processes and integrated technologies** public health data and surveillance to enable data-driven public health leadership

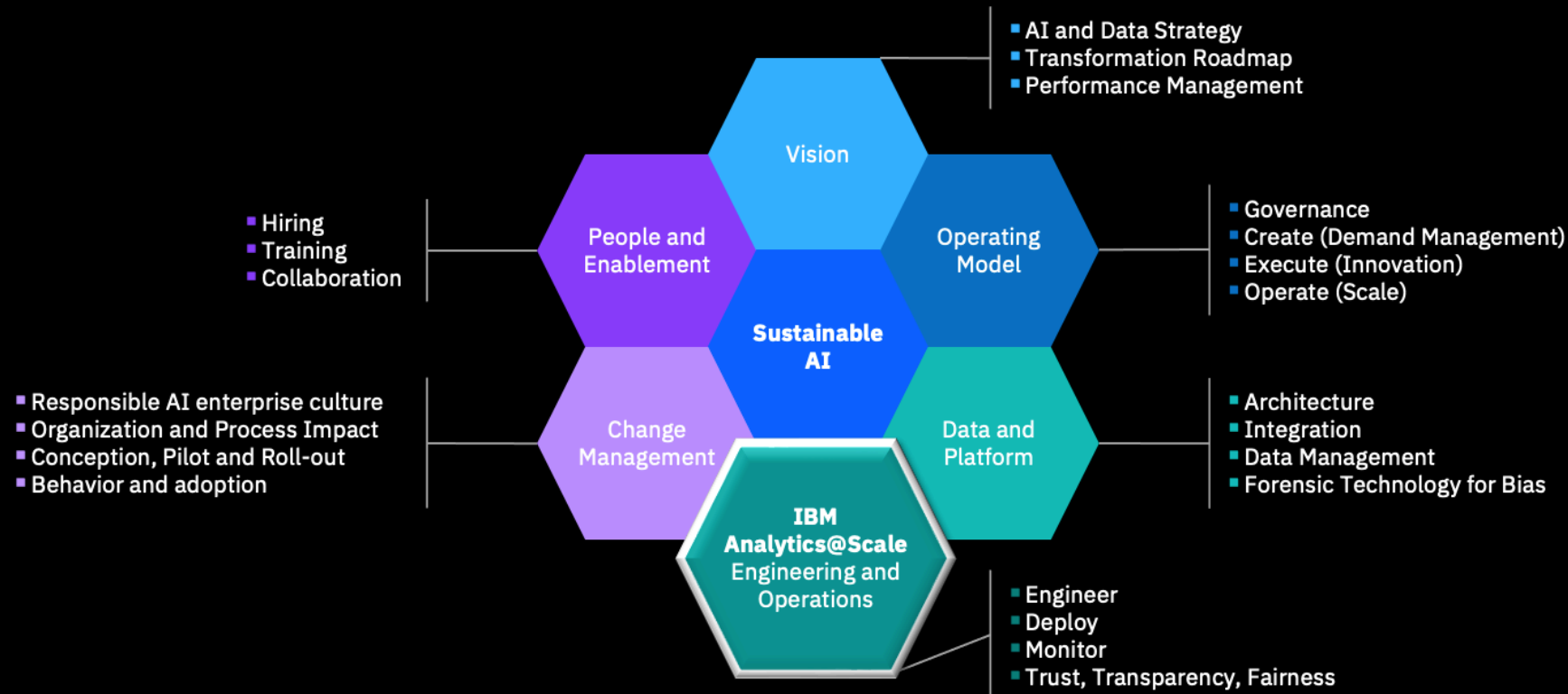


Use **iterative development** to offer better, faster, actionable insights in real-time efficiently and equitably

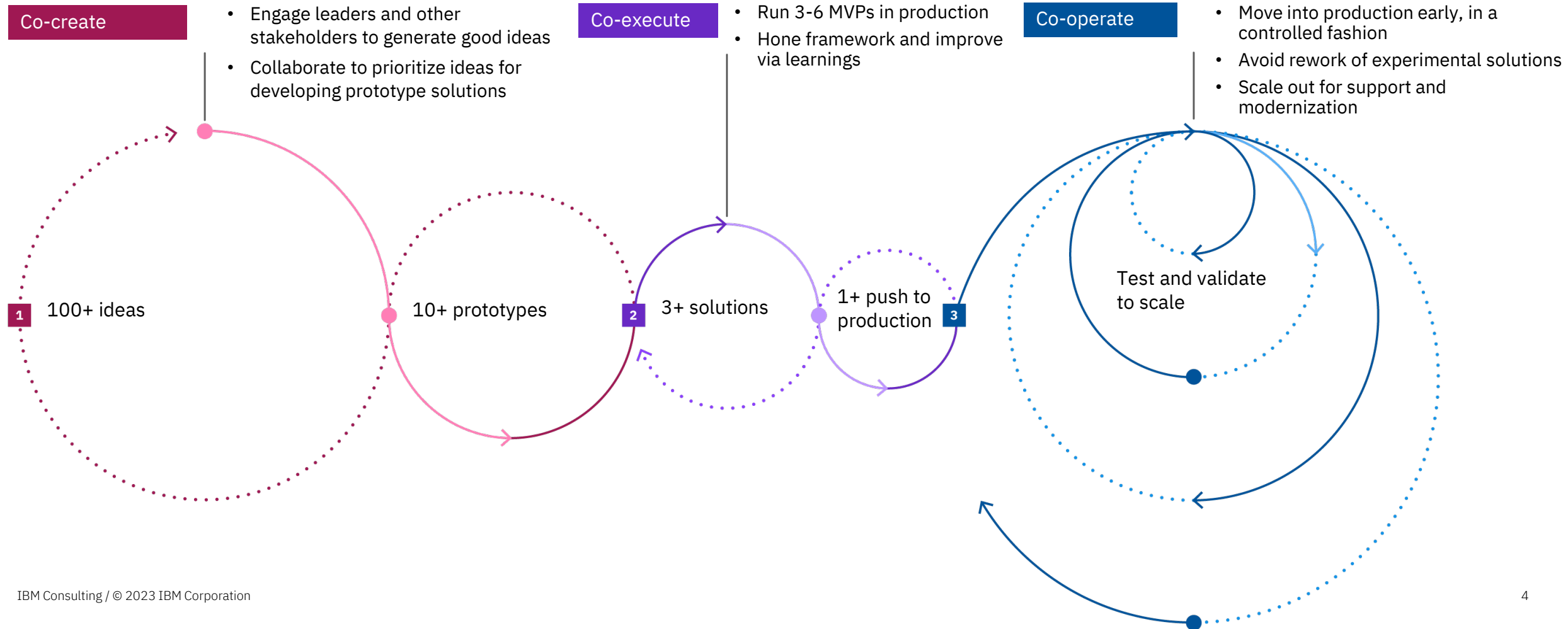


Re-imagine what data can do for the public health professionals and the public at large to increase connection to public health

IBM has broad capabilities to re-imagine public health data & analytics modernization



IBM Analytics@Scale methodology accelerates opportunities for sustained data & analytics modernization



IBM Innovation Workshops use Design Thinking to keep the needs of **public health leaders** at the center of everything we do.

We **identify, prioritize, and define** data-driven use cases that **solve real problems and provide maximum value**.



Design Prompt:

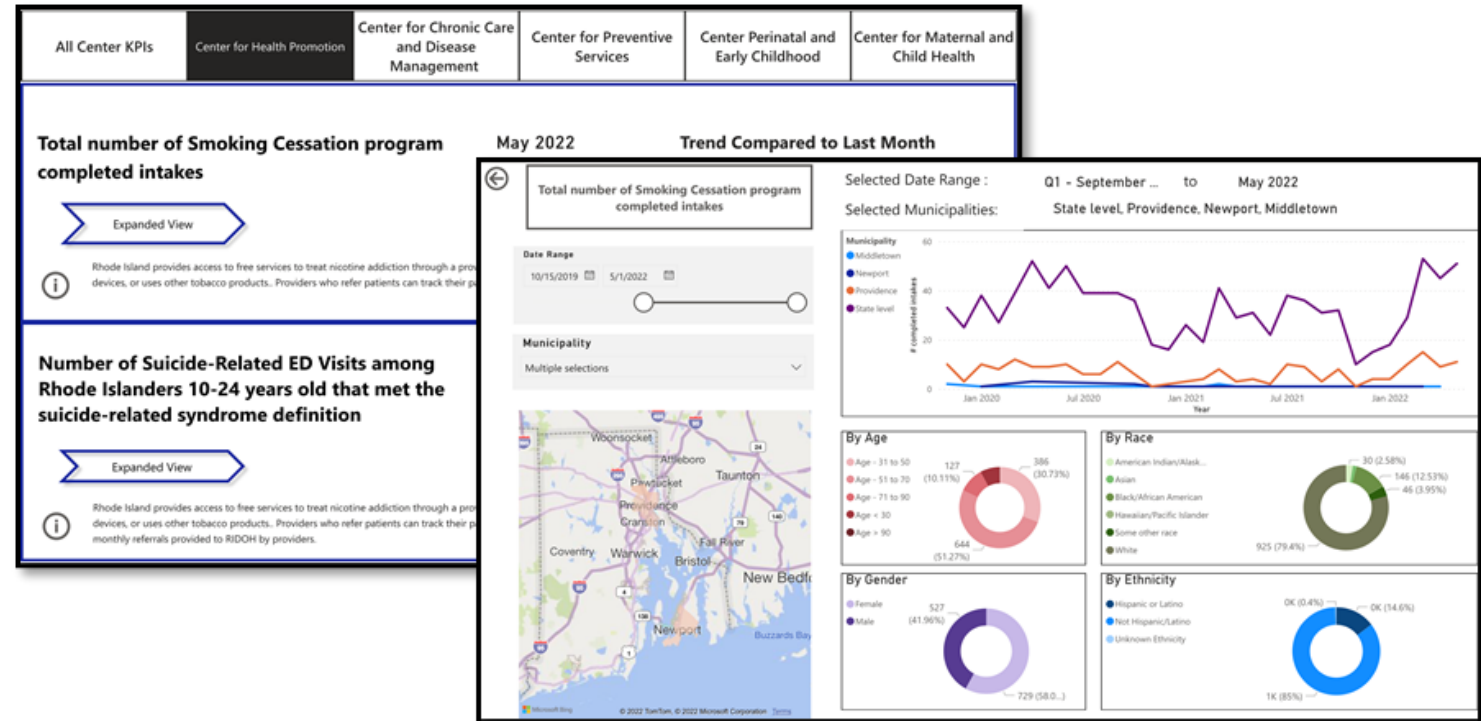
How might we better leverage data and analytics so that Rhode Island Department of Health leaders can make smarter, faster, more efficient decisions to improve public health outcomes for Rhode Islanders?

The outcome of the Innovation Workshop is a **prioritized list of promising solutions aligned with leadership priorities**.

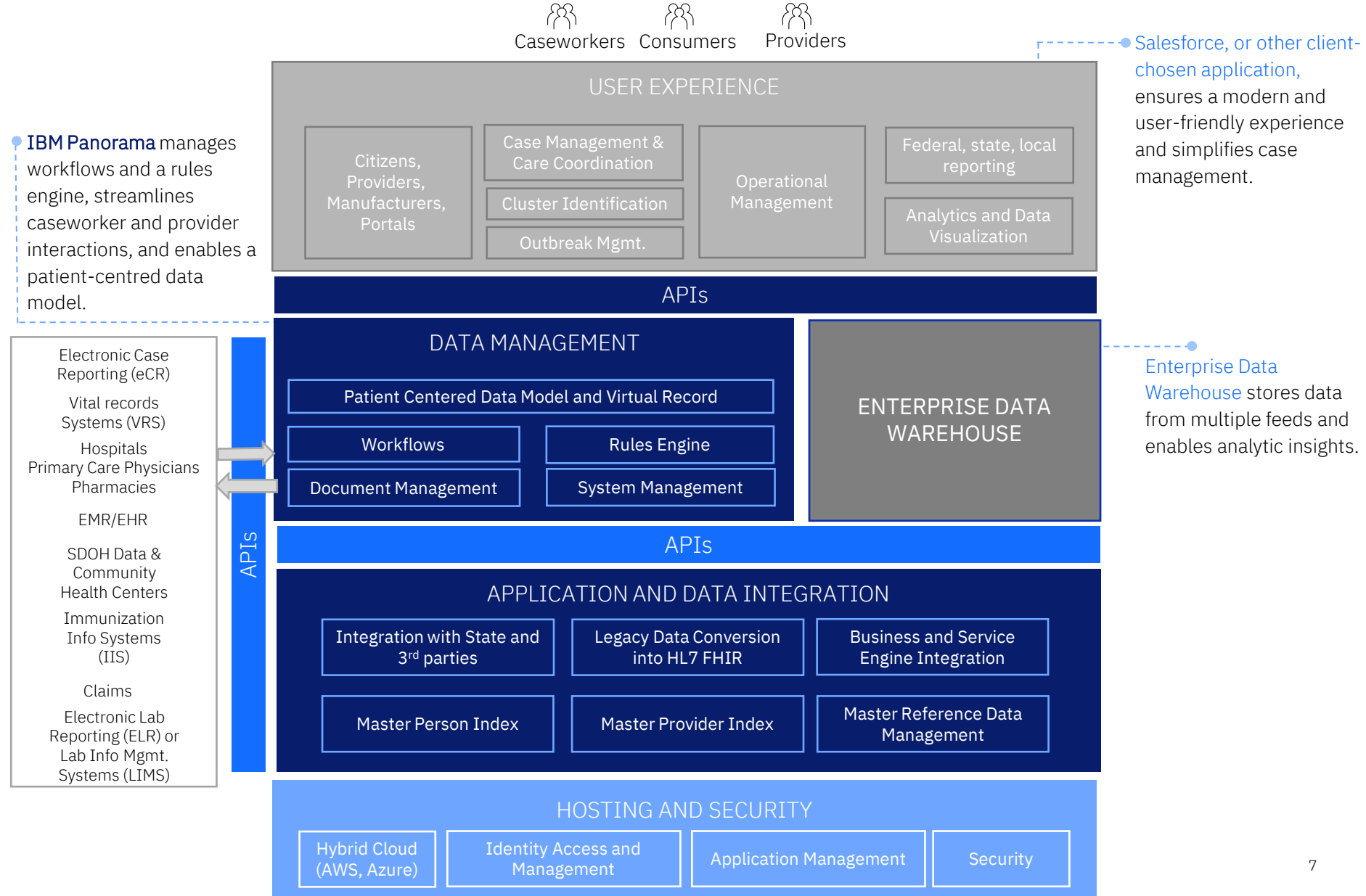
Identifying Scope: An IBM Innovation Workshop was held with community health leaders to define a solution that best presents health equity related information to Division leaders.

Design & KPI Identification: IBM worked with Center Chiefs and Program Leads to determine KPIs related to health outcomes. An IBM iX designer was brought in to visualize the desired dashboard with RIDOH community health leadership.

Development of Prototype: IBM held interviews with each Center to gather KPIs and conduct 4 iterations of Division-wide dashboard reviews with Center Chiefs and Programs Leads to collaboratively develop a prototype dashboard to present health equity information.



Valuable prototypes are converted to **scalable and sustainable analytics solutions** that help public health leaders **improve public health**.



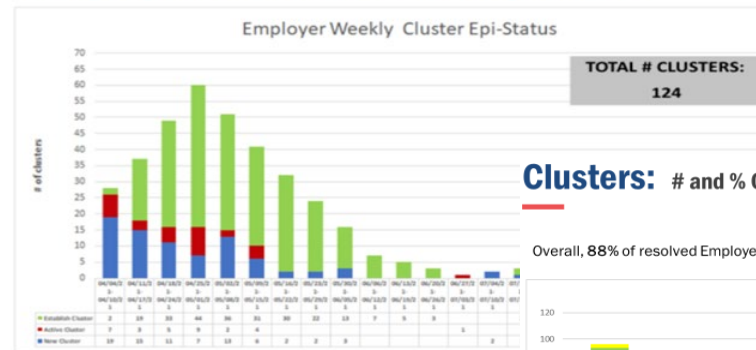
innovative tools

THE NEED: traditional approaches relied on time consuming and error prone manual processes to identify disease clusters, resulting in unnecessary preventable disease.

THE SOLUTION: automated disease cluster detection embedded within a case investigation system.

THE RESULTS: enabled a more comprehensive and accelerated public health response to potential outbreaks of infectious disease.

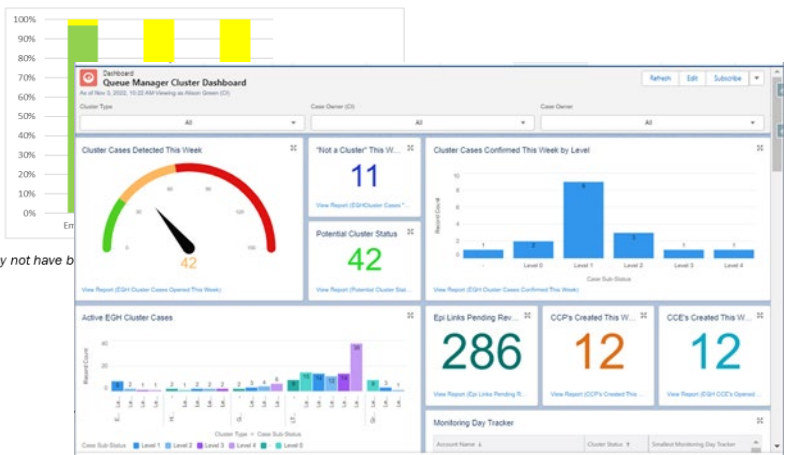
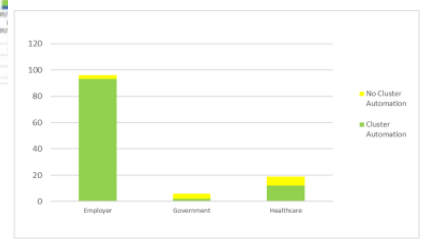
Employer Cluster Status by Week



Clusters: # and % Cumulative Resolved Clusters by Autodetection and Team

Number of clusters automated 107

Overall, 88% of resolved Employer, Government, and Healthcare clusters were identified through autodetection

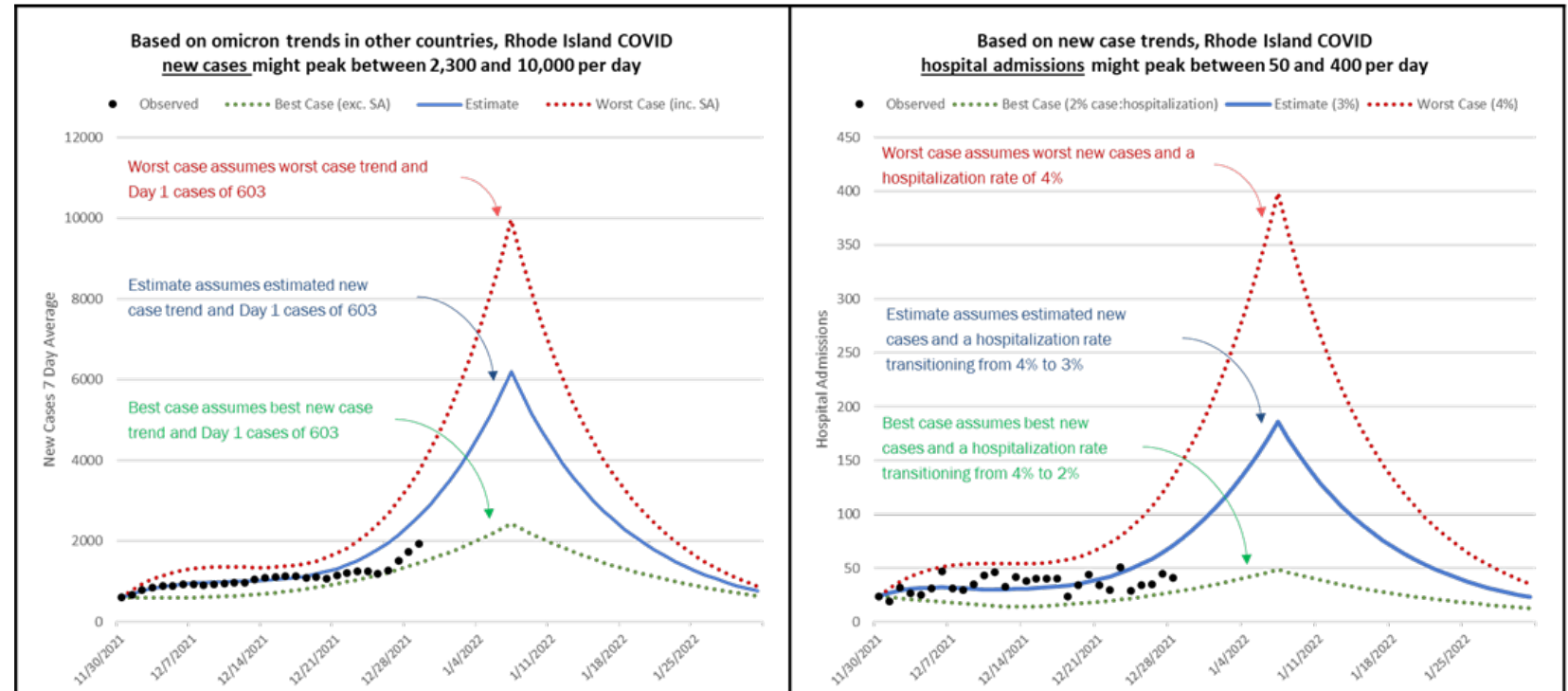


* Includes clusters where cluster status = resolved, cluster status may not have been from 4/4/2021 through current MMWR week

THE NEED: traditional approaches to epidemiological modeling are not always grounded in empirical data providing best-case & worst-case forecasts.

THE SOLUTION: leveraging international data on COVID-19 disease outbreaks, developed a predictive model and dashboard to forecast the omicron outbreak.

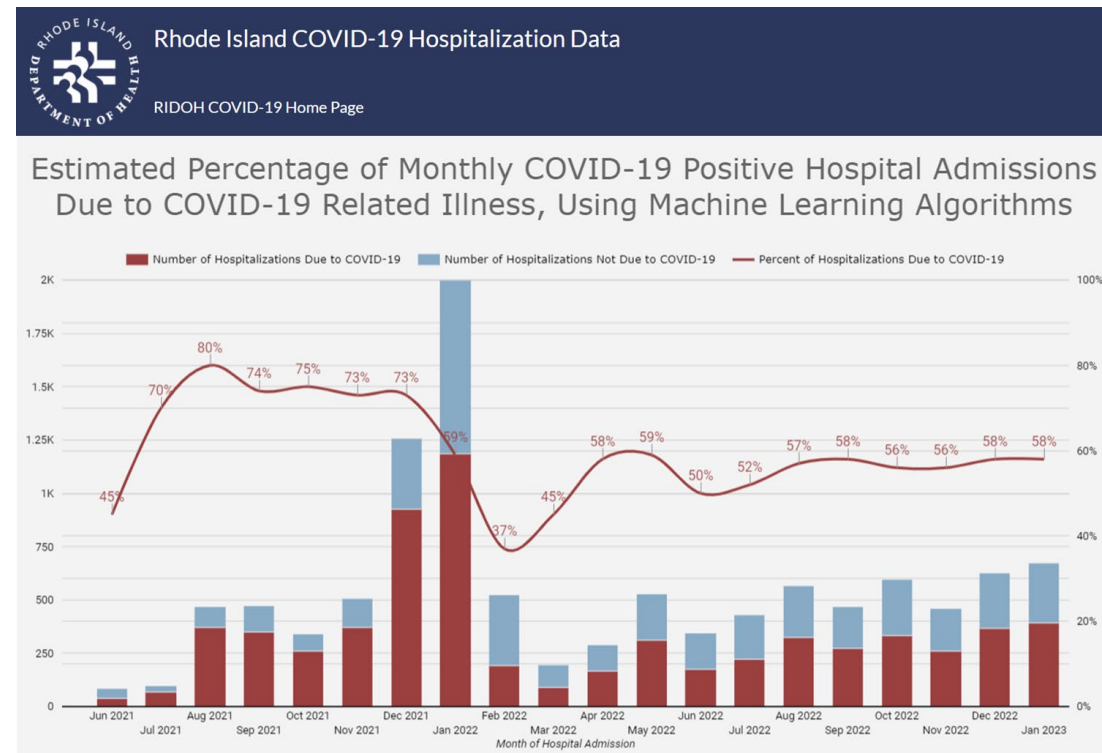
THE RESULTS: enabled a validation of conventional epidemiological models and rallied decision makers around necessary mitigations to curb the outbreak.



THE NEED: traditional analytic tools are not able to unlock hidden insights in unstructured data describing the reasons for SARS-CoV-2 positive hospitalizations.

THE SOLUTION: machine learning with natural language processing enabled cause of hospitalization determination with 80% accuracy.

THE RESULTS: disease surveillance is enriched with additional insights on the causes of SARS-CoV-2 positive hospitalizations.



Analytics@Scale has been a successful approach to data and analytics modernization

“IBM has been a game changer for the Department of Health and for Rhode Island as a whole.”

Leanne Lasher,
Chief Data Officer, COVID-19 Response,
State of Rhode Island



“The IBM team has been integral in helping us have faster insights.”

Joseph Wendelken,
Public Information Officer,
Rhode Island Department of Health



[Learn more about the IBM-RIDOH collaboration](#)

IBM Analytics@Scale for Public Health helps to de-risk your journey through structured innovation

30% ↓

In deployment cost

Building a portfolio of reusable assets exponentially increases data analyst and developer productivity

25% ↓

In POC development cost

Build a portfolio of reusable assets, and data analyst and developer productivity increase exponentially

20-40% ↑

Increase in growth

Scaling analytics, joint experimentation, and co-creation with data analyst opens up new possibilities

Meet the need for increased speed to transform - and reduced risk.



Sunaina Menawat, Associate Partner
Public Health, IBM Government Health
and Human Services,
IBM Consulting
sunaina.menawat@ibm.com

Mark Freeman, Associate Partner
Digital Transformation and
Technology Services,
IBM Consulting
mfreeman@us.ibm.com