Centers for Disease Control and Prevention

Center for Forecasting & Outbreak Analytics (CFA)

Better Data, Better Analytics, Better Response

Early Warning Saves Lives

Galveston Hurricane

	DATE	TIME	HURRICANE CATEGORY	WIND (MPH)
A	Sept. 6	2 AM EDT	1	75
B	Sept. 6	2 PM EDT	2	98
C	Sept. 7	2 AM EDT	3	121
D	Sept. 7	8 AM EDT	4	132
E	Sept. 9	2 AM EDT	2	104
F	Sept. 9	8 AM EDT	1	75
G	Sept. 9	2 PM EDT	–	58

Center for Forecasting and Outbreak Analytics

PREDICT

- Generate forecasts and analyses to support outbreak preparedness and response efforts
- Respond to needs of Federal, State and local leaders for analytical, forecasting results
- Support critical data collection for unique response needs

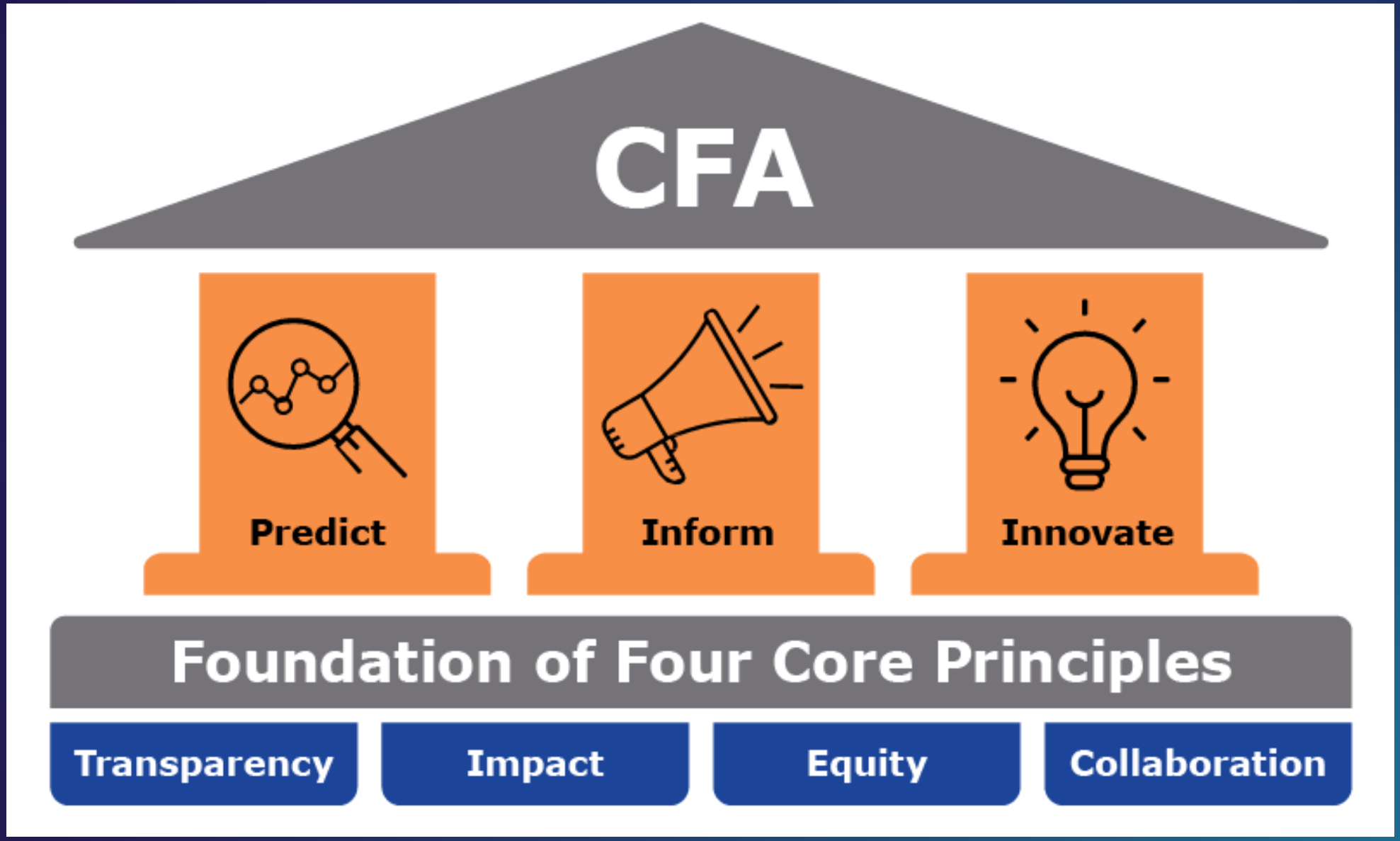
INFORM

- Communicate modeling results to meet the needs of decision-makers
- Share timely, actionable information with Federal government; State, Local, Territorial and Tribal (STLT) leaders, and the public
- Coordinate early warning efforts between CDC subject matter experts and USG interagency

INNOVATE

- Support research and development to improve outbreak forecasts and analyses
- Create translational tools, products, enterprise enhancements to make analyses of pandemic data flexible, fast, and scalable for STLT authorities
- Establish and maintain CFA data architecture in alignment with the Data Modernization Initiative

Structure for Success



CFA Partnerships

Currently supporting:

- CDC Director
- The White House and other parts of USG
- CDC Emergency Response Incident Manager

Developing capacity to support:

- State, Tribal, Local, Territorial
- Public
- International Stakeholders

Engaging State, Territorial, Local, and Tribal (STLT) Organizations

Funded STLT Partner Organizations:

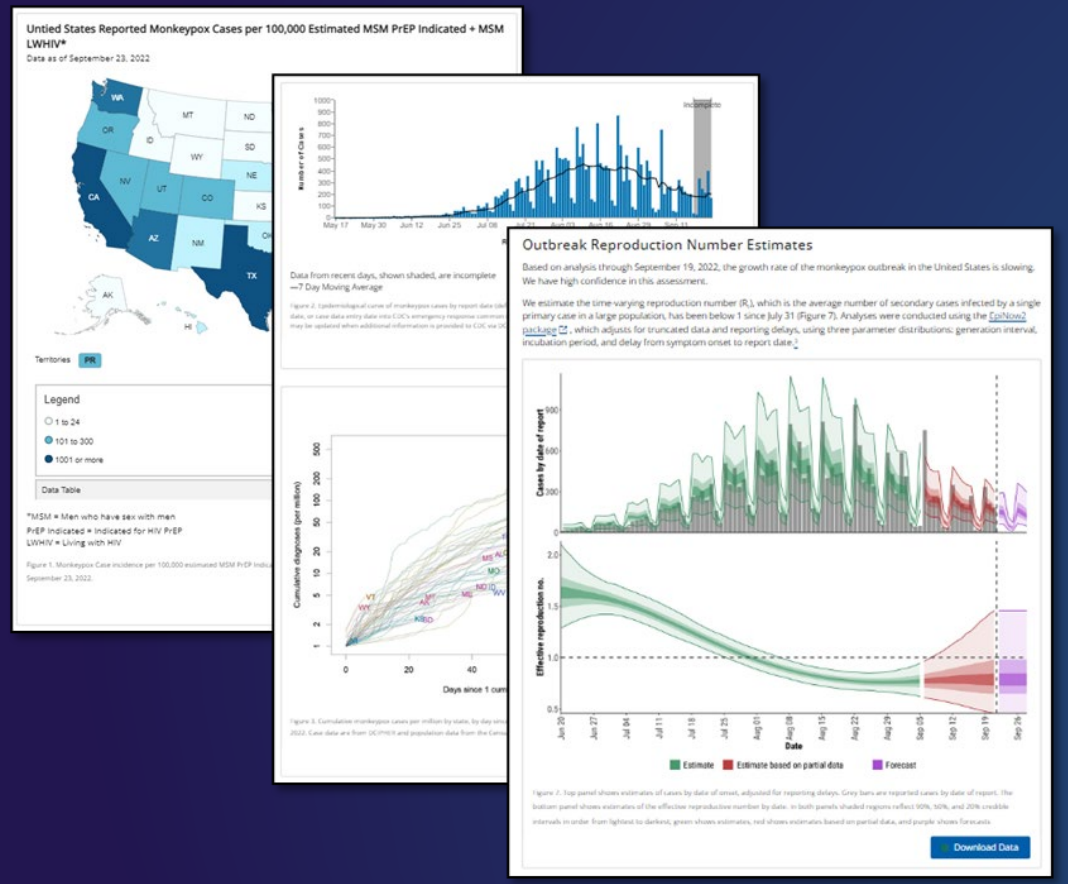
- Association of State and Territorial Health Officials
- Council of State and Territorial Epidemiologists
- National Association of County and City Health Officials
- National Conference of State Legislatures

- Funded STLT organizations through cooperative agreements to build capacity in the development, use, and interpretation of models and forecasts. Key elements:
  - **Needs assessments** and **listening sessions** to better understand the perspectives of STLT decision makers.
  - **Training** to build capacity in the use and development of models and forecasts.
  - Development of a **database** of modeling experts that can be turned to during surge.

Specific work with NCSL

- CFA has a cooperative agreement with NCSL to build capacity around skills and tools to understand and act on forecasts. Specific activities include:
  - Meetings of state legislative staff and listening sessions to understand legislative staff needs and feedback
  - Advisory group to inform and support project activities
  - Report for CFA
  - Report for NCSL members

Partnering to develop decision-support products



Nowcast/natural history

Understand **current health burden**, on a **national**, **state**, **county**, and **local** level for respiratory diseases, starting with influenza

Nowcast

Forecast

Understand **potential future health burden**, on a **national**, **state**, **county**, and **local** level for respiratory diseases, given status quo, starting with influenza

Short-term forecasts

Scenario modeling

Consider **potential impact** of **pathogen behavior**, **patient behavior**, and **countermeasure use** on cases, hospitalizations, and deaths to inform decision making

'What if' models

CFA Notice of Funding Opportunity

CFA will support a network to improve speed, accuracy, and use of data & analytics during health emergencies, to include:

Innovation

Innovators to advance the science of outbreak analytics

Integration

Integrators to design and test innovative capabilities in collaboration with public health jurisdictions

Implementation

Implementors to scale innovations among jurisdictions

CFA Notice of Funding Opportunity

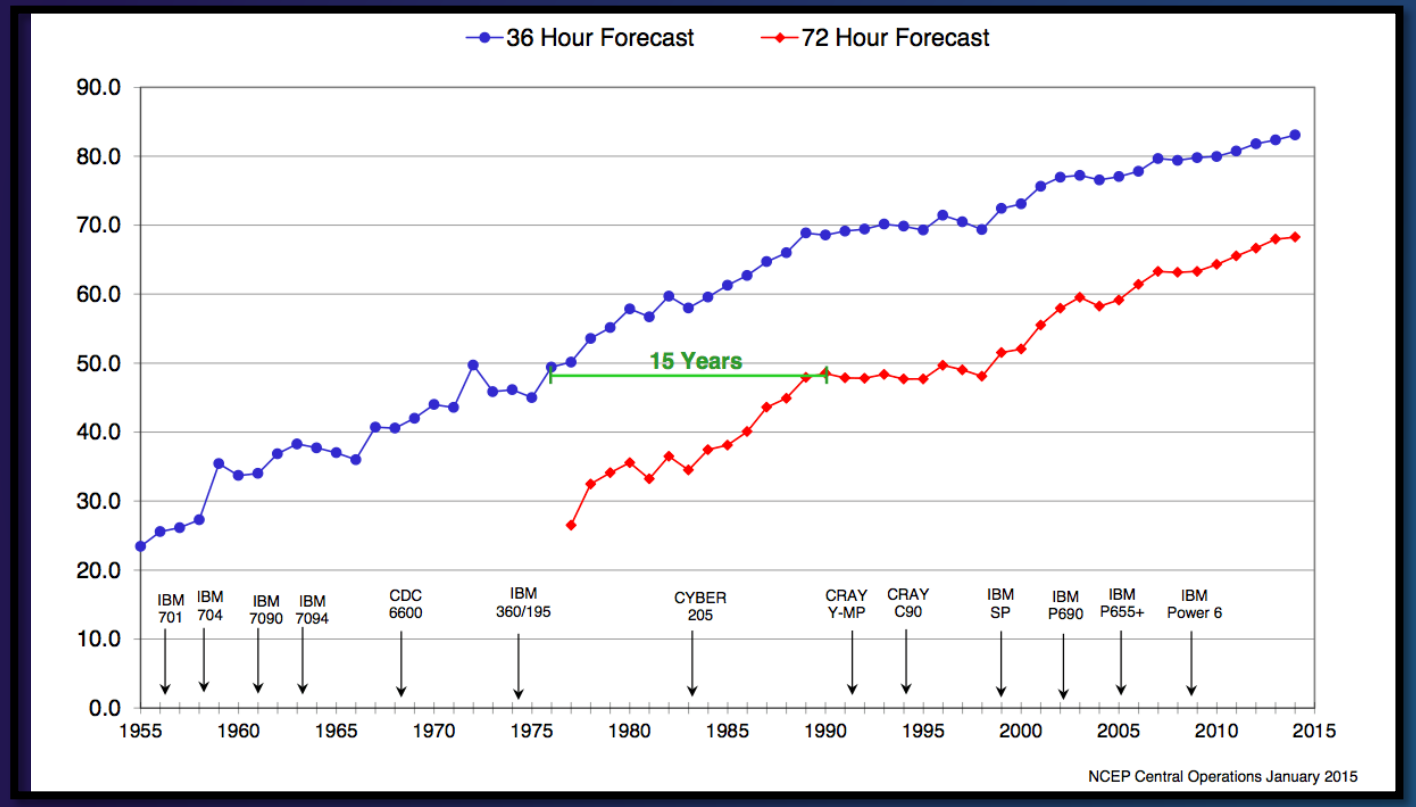
Develop a network of innovators to design, prototype, test and scale up advances in data modeling tools and technology that can be used to support public health decision makers at every level.

Investment:

$262.5 million over 5-year period

Developing Outbreak Analytics & Forecasting Takes Time, Resources

Increases in numerical weather forecasting skill through time



Forecasting skill

Time

- Advancing weather forecasting capabilities took decades
- Needed ingredients:
  - Data
  - Models
  - People
  - Computational Power
  - Specific Use Cases
  - Sustained Funding
- Disease forecasting, analytics still in early stages