Got Symptoms? Meet Sara Alert
A 21st Century Tale of Rapid Collaboration and Partnership in the Face of a Growing Epidemic

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• CDC, WHO and others are closely monitoring an outbreak of respiratory illness known as COVID-19 caused by a novel (new) coronavirus
• Outbreak started in Wuhan, China, and cases have been identified in a growing number of other international locations, including the US
What do we really know?

• Decisions must be made based upon the best (or less bad) information available
• You never know what you need to know when you make a decision
• Use best judgement to make a decision and take action – then change it as necessary.
• “Darned if you do, Damned if you don’t*”
• Infectivity: Spread: Ro, doubling time
• Severity: Case fatality rate
• Trajectory: Waves and seasonality
“The early recognition of cases in the United States reduces transmission risk and increases understanding of the virus, including its transmission and severity, to inform national and global response actions.”
Problem

• Public health agencies must respond swiftly to public health emergencies
  – First lines of defense are containment and mitigation
  – Both are intensive because the process is largely manual

• Any tools that are built are hard-coded to track *just that disease*

Clear need for an enduring national resource to contain disease
Solution

Contain the spread of disease through effective monitoring and rapid response

• Deliver flexible information technology to automate the solution
  – Enable public health officials to enroll individuals at risk
  – Allow individuals to enter symptoms daily
  – Enable quick and safe referral to care
  – Monitor case contacts to contain spread
  – Provide dashboards for federal, state, and local public health officials

• Build infrastructure for a disease-independent approach

• Develop in partnership with key public health partner organizations

Force multiplier to allow resources to be directed where most needed
Collaborating for an Effective Solution
MITRE’s Unique Contribution

We work in the public interest to address complex structural, technical, behavioral, and social challenges that affect health and healthcare.

OUR CULTURE

• Risk-taking
• Adaptability
• Collaboration
• Speed
• Grace and Respect

OUR EXPERTISE

• Healthcare and Public Health
• Rapid Prototyping & Software Engineering
• Health Systems Engineering & Process Integration Programming
• Health Communication and Health Social/Behavioral Analysis
• Stakeholder and Network Management
• Health Standards and Interoperability
Engagement & Collaboration

Contributors and Testers

Early Adopters
in progress...

Sara Alert
Team

Image source: MITRE
Public health enrolls at-risk individual

Individual reports temperature and symptoms

State and local public health monitor potentially exposed individuals

Federal, state, and local public health agencies monitor using dashboards
Differentiators: A National Resource for Efficient Response

• **Simple** - Minimizes effort to monitor individuals

• **Quick** - Must be implemented to address current outbreak

• **Partner-supported** - Addresses essential needs of local, state, and federal public health organizations

• **Accessible** - Offers multiple platforms (e.g., mobile, desktop, text-based) and languages

• **Adaptable**
  – Adapts easily for different symptoms, evolving pathogens, etc.
  – Supports households and individuals

• **Timely use** - Purges data after monitoring is complete

• **Disease-independent** - Supports future outbreaks with no coding changes

• **Scalable** - Aids the nation in current and future outbreaks

• **Interoperable** - Utilizes standards for future integration with public health systems

• **Compliant** - Provides record-level access controls to meet data use laws and policy
Ensuring Privacy

• Collecting minimal viable data set
• Collecting just what is needed to support public health operations
• Collecting low risk data elements
• Control access by jurisdiction
• Providing fine-grained access control
  – Single record, single user
• Encryption at rest and in flight
• Data is stored only during monitoring period
Public health official enrolls at-risk individual
Individual reports temperature and any symptoms

Basic interface

SARA Alert

Daily Self-Assessment

What was your temperature today (°F)?

101

Are you experiencing any symptoms including cough or difficulty breathing?

Yes

Submit

SARA Alert

Daily Self-Assessment

You previously indicated that you are experiencing symptoms. Please select all symptoms which you are experiencing.

- Cough
- Difficulty Breathing

Continue

Image source: MITRE
Public health officials track patients

Image source: MITRE

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