

State of 911

Webinar Series

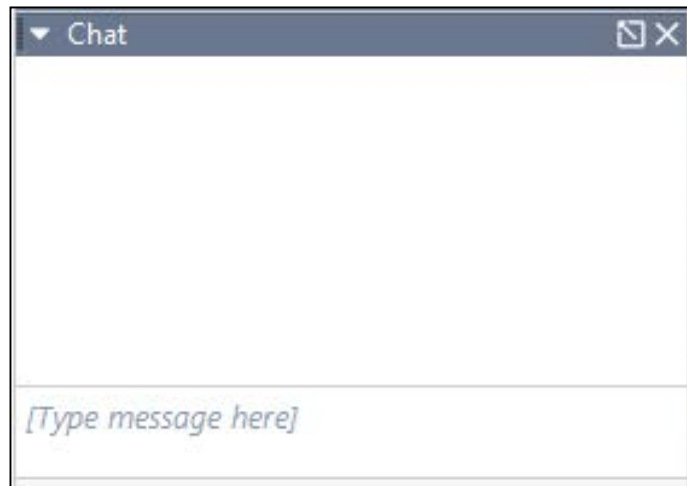
NATIONAL 911 PROGRAM
May 12, 2020

State of 911 Webinar Series

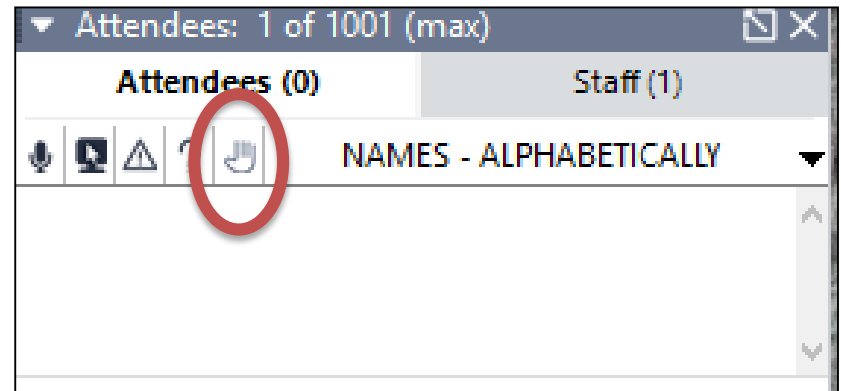
- Designed to provide useful information about Federal and State participation in the planning, design, and implementation of Next Generation 911 (NG911) coupled with real experiences from leaders overseeing these transitions throughout the country
- Webinars are typically held every other month and include presentations from a Federal-level 911 stakeholder and State-level 911 stakeholder, each followed by a 10-minute Q&A period
- For closed captioning, please copy and paste the URL link in the chat window to an additional web browser
- For more information on future webinars, to access archived recordings and to learn more about the National 911 Program, please visit 911.gov
- Feedback or questions can be sent to: National911Team@mcp911.com

Questions?

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During the Q&A portion of the webinar, please click on "Raise Hand" and your phone line will be unmuted.





IJIS Institute

State of 911 Webinar

Text-911 Translation Capability Project Overview

Michael Alagna, Program Director, IJIS Institute

May 2020



Homeland Security

Science and Technology

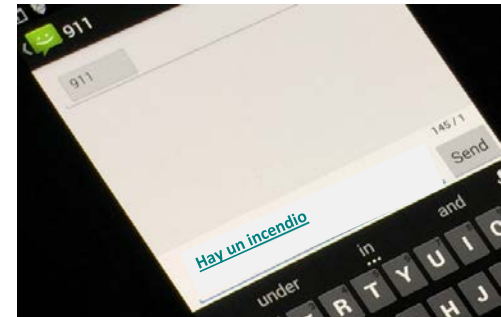
Why is DHS S&T investing in this?

Provide nationally relevant translation capability to be used by Emergency Communications Centers (ECCs) to obtain accurate Text-to-911 information from users with Limited English Proficiency (LEP)

Project Description:

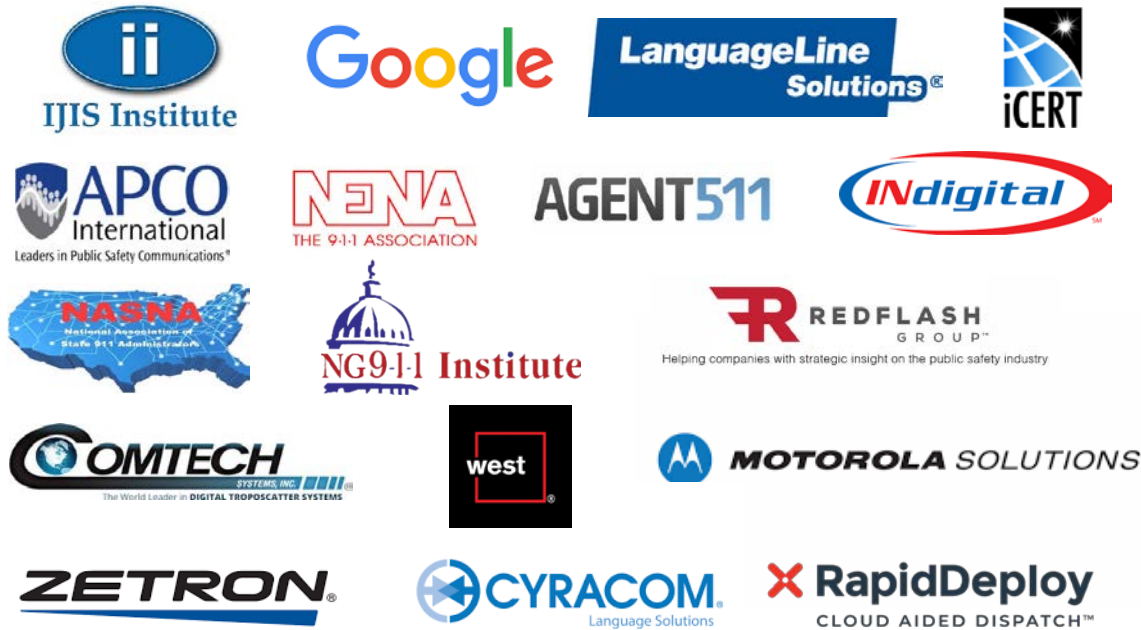
DHS S&T sponsored a project team to develop, pilot and test a solution

Text-to-911 Translation



A solution for translation of incoming and outgoing non-English texts in ECCs

Project Team



The IJIS Institute represents industry's leading companies who collaborate with local, state, tribal, and federal agencies for information sharing and technology initiatives.

Project Intro

- Phone usage data shows that around 92% of non-English 911 calls were conducted in Spanish
- Other non-English calls are spread out between 148 languages
- Collaboration among industry, standards setting organizations, PSAPs, technology providers, and policy makers to address interoperability, technology needs and standards to enable new public safety service
- Investigate M2M and Human Assisted Translation

Estimates 20-40% of the nation's 6,500 emergency dispatch centers are equipped to receive and respond to emergency text-to-911 messages.

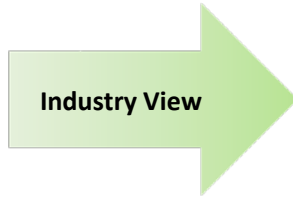


- ✓ 60 million Americans speak more than one language
- ✓ 350 different languages
- ✓ 25 million require language assistance

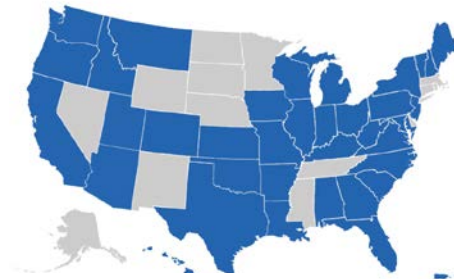
Current State

List of supporting service reported to

DESCRIPTION/YEAR	2018
# PSAPs Text to TTY	163
# PSAPs Web Browser	560
# PSAPs Text Enabled CPE	742
# PSAPs Accepting Text	1465
Total # PSAPs	6419
% PSAPs Accepting Text	23%



TEXT-TO-9-1-1 ADOPTION MAP



Industry reports ≈40%



Interim Solution - only process Text-911 via carrier SMS

- Photos, videos, “non-Latin” character sets not currently delivered to PSAP

What happens when an emergency text is not in English?

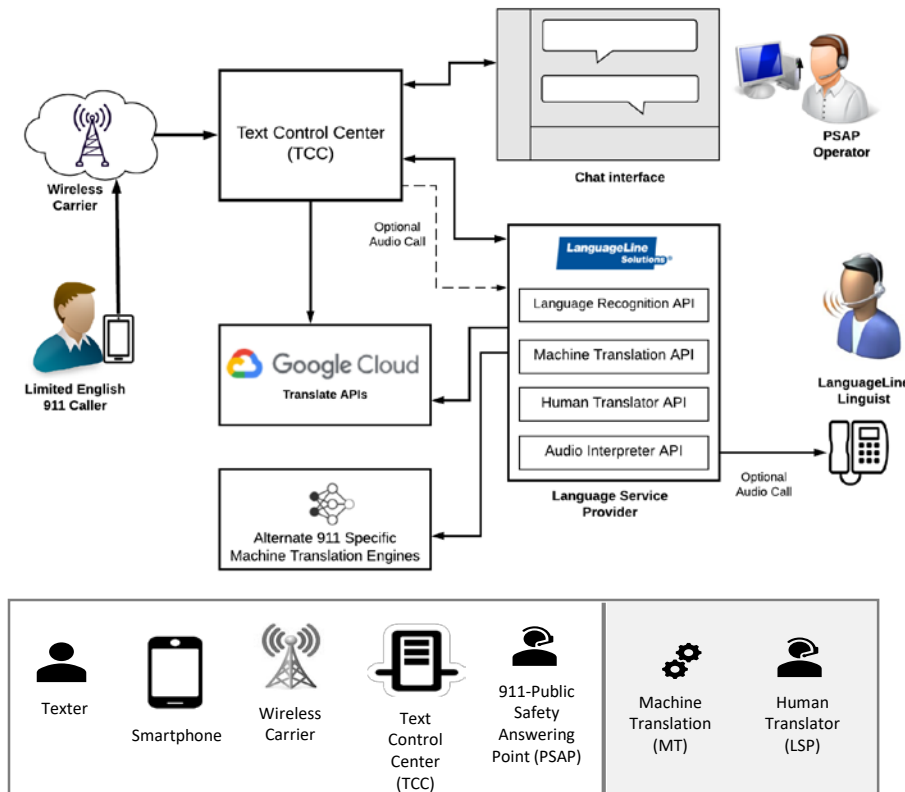


¡Ayuda! Creo que alguien irrumpió en mi casa. Estoy escondido en el armario.

Help! I think somebody broke into my house. I am in the closet hiding.

- PSAPs have on staff a foreign language speaker who would be assigned the non-English text
- More commonly copy and paste the text into a web browser version of a translation application
- Increasingly PSAPs have deployed a Text-to-911 translation service that is commercially available
- Currently, there is no capability to include the services of a human translator

Demonstration Workflow



- TechFest simulated PSAP with machine and human language translation
- End-to-end with dialogs between Spanish speaking Text-to-911 “texters”, PSAP, Language Service Providers (LSPs) and automated translation
- Analyzed the automated translation of messages (Spanish)

Current State

- Sending Texts to 911 is becoming more common, but data suggests only 30% of the nation's 6500 ECCs have implemented Text-911
- No data available on number of ECCs providing translation services
- Current Text-to-911 solution is constrained by legacy technologies “interim solution” utilizes carrier native Short Message Service (SMS)
- Photos, videos or non-Latin character sets (i.e. Chinese, Arabic, etc.) are not supported, not delivered by the carriers
- Officials continue to emphasize and/or prefer voice communications over text, “Call When You Can, Text When You Cannot”
- Data from industry reports that approximately 2M Text-to-911 / year require language assistance, compared to over 240 million voice calls made to 911 in the U.S. each year
- Assumptions regarding Text-to-911 as useful during incidents that would put the victim at risk - not supported by the data, more typical of day-to-day use case

Machine Translation

- Reviewed and analyzed the automated translation (Machine Translation - MT) of messages translated from Spanish
- The MT output for each message assigned a BLEU score, perfect match score of 1.0, a perfect mismatch results in a score of 0
- BLEU score for the automated translations was .45 (on scale of 0 - 1), suggests that overall, produce “High Quality Translations”
- Many instances where MT produced high-quality translations, numerous examples of failures
- About 56% of machine translations were deemed acceptable by human linguists
- The most common cause of MT failure could not interpret the incoming text correctly due to linguistic defects (e.g. typos, misspellings, lack of punctuation, and non-standard representations of common words (e.g. “text speak,” phonetic spelling))

TechFest

- TechFest demonstrated translation services integrated to conference in a Language Service Provider (LSP) for human “coaching” of a machine text translation
- For years, ECCs have had reliable Over-the-Phone Interpretation (OPI) and budget on a per minute basis - ECCs are trained to work with interpreters in real time and the technology integration burden with 911 centers is well understood
- OPI market is large enough that ECCs benefit from sharing the costs of commercial OPI solutions with entities that operate a call center
- None of the factors that support OPI hold true for Text-to-911
- Lacking a business case for human assisted interpretation of Text-to-911 ECCs will remain dependent on machine translation due to its low investment cost and potential upside as the technology continues to improve

Conclusions

- Large tech firms—Google, Microsoft, and Amazon will continue to lead on machine translation development due to the massive resource requirements
- There is no established business case for a Language Service Provider (human) be a part of the overall solution, much work remains to develop a cost model that is acceptable to both Public Safety and industry
- The analysis of machine translation found 56% of machine translations rated comprehensible or better, expect accuracy to improve
- Given budget constraints, Public Safety organizations will remain dependent on machine translation due to its low investment cost
- Continued work needs to be done on the technical enablement and business case to allow participants an escalation option to be connected with a human interpreter or translator

For more information, please contact:

Michael Alagna, IJIS Institute

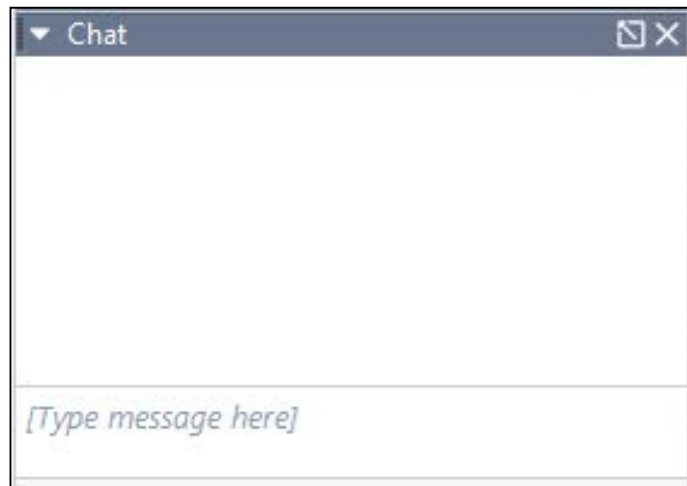
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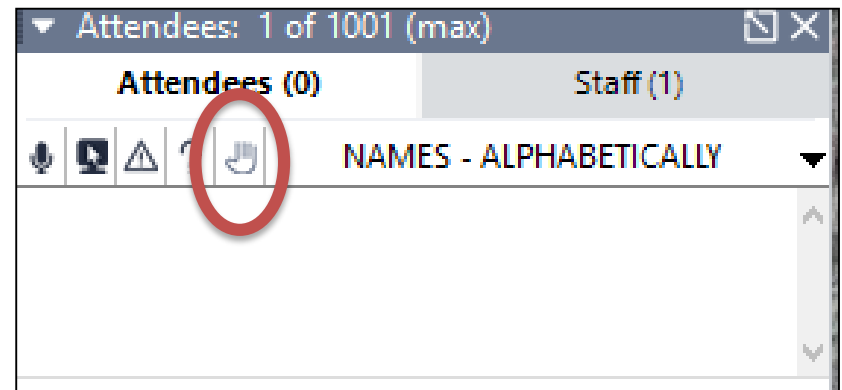
www.ijis.org

Q & A Period

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NG911 Webinar

Presentation: Using GIS for the COVID-19 Response

Julia Fischer

Maryland Department of Information Technology (DoIT)

Geographic Information Officer / Director, Data Services (BI/GIS)

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<https://imap.maryland.gov>

<https://data.imap.maryland.gov>

COVID-19 Site

- Open Data
- Transparency Applications and Dashboards
- Operational Dashboards
- Examples of Spatial Analytics

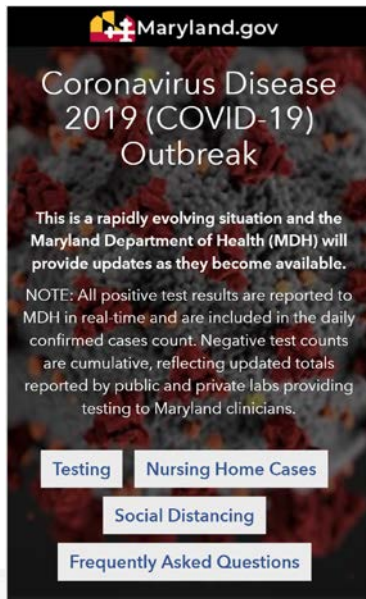
coronavirus.maryland.gov

- Esri Hub Site
- Launched 03/14/2020 @ 05:00
- Use Stats as of 05/08/2020
 - 3,890,096 Users
 - 16,957,510 Pageviews
 - 66% Mobile Users



With responsive design, develop once, deliver multiple views...

Mobile View



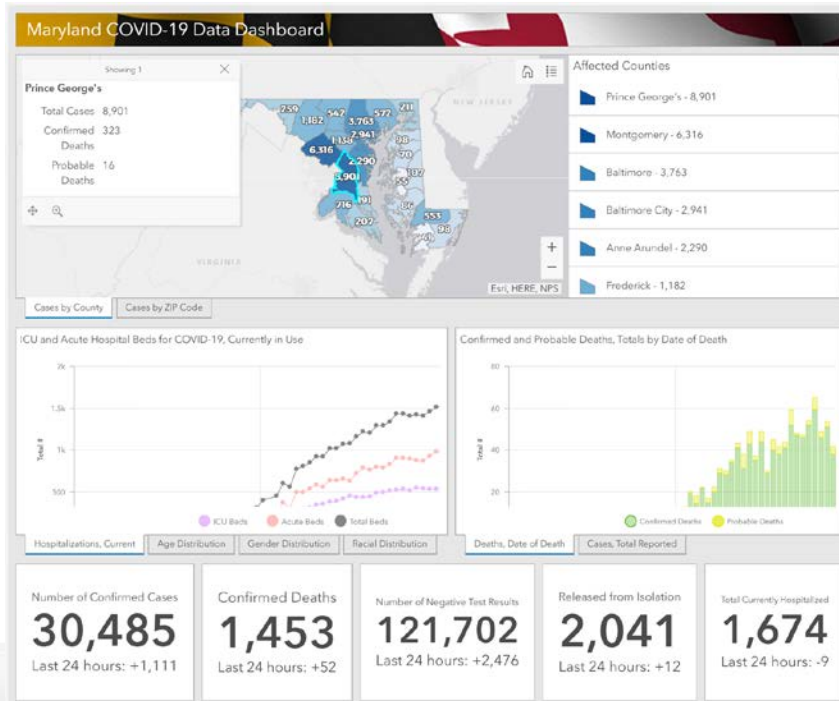
Desktop View



Tablet View



Seamlessly embed interactive charts, maps and dashboards...



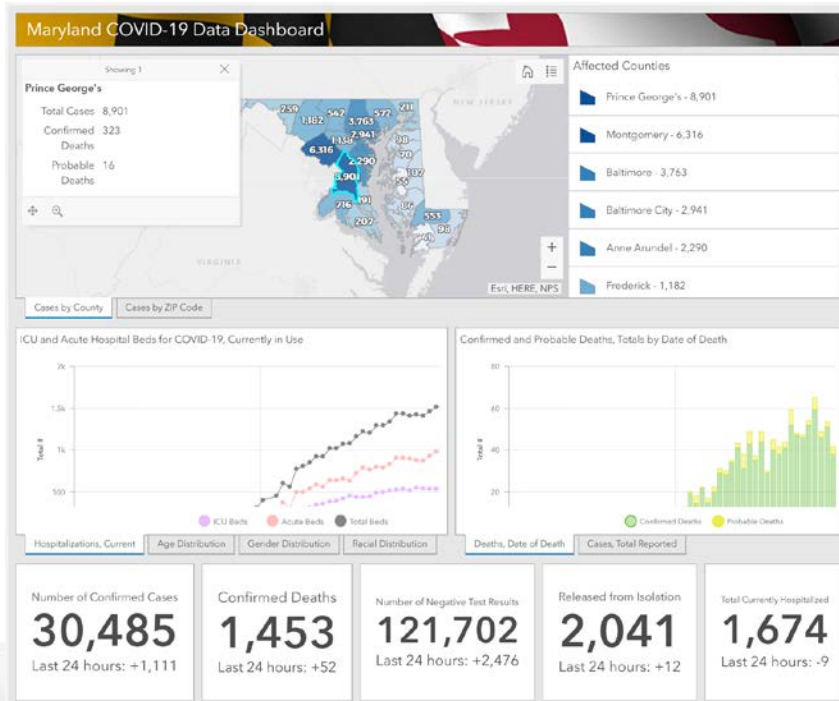
Feature

- Pop-ups
- Tabs
- Lists
- Charts
- Legends
- Maps

Benefit

- Detailed attributes
- Reuse layout spaces
- Interact with map/chart
- Multiple types
- Show/Hide parameters
- Spatial relevance

Deliver a narrative that clearly reports the reality of the situation...



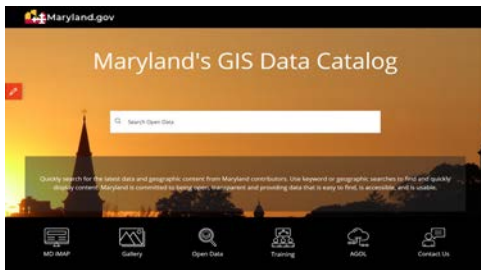
21 Visualized Datasets Include...

- Statewide: Cases and Deaths
- Cases by County, by ZIP Code
- Hospitalizations
- Cases, Deaths by Age
- Cases, Deaths by Gender
- Cases, Deaths by Race/Ethnicity

Open data empowers citizens with definitive and reliable data...

Search

data.imap.maryland.gov



Explore

The screenshot shows the 'Maryland.gov' interface for the 'MD COVID-19 - Cases by County' data layer. It includes a 'Summary' section with the text: 'The cumulative number of positive COVID-19 cases at within a single Maryland jurisdiction.' and a 'Description' section with the text: 'The MD COVID-19 - Cases by County data layer is a c test results have been reported each day by the local ESSENCE system.' Below the text is a table showing COVID-19 cases by county from 3/13/2020 to 3/24/2020. The table has columns for 'OBJECTID', 'DATE', and various counties. The 'DATE' column is highlighted in blue. Below the table is an 'Attributes' section with a 'Chart' button and a grid of buttons for each county: Allegany, Anne_Arundel, Baltimore, Baltimore_City, Calvert, Caroline, Carroll, Cecil, Charles, DATE, Dorchester, Frederick, Garrett, Harford, Howard, Kent, Montgomery, Prince_George's, and Queen_Anne's. The 'DATE' button is highlighted in blue. At the bottom, there is a 'Favorite' button with a star icon.

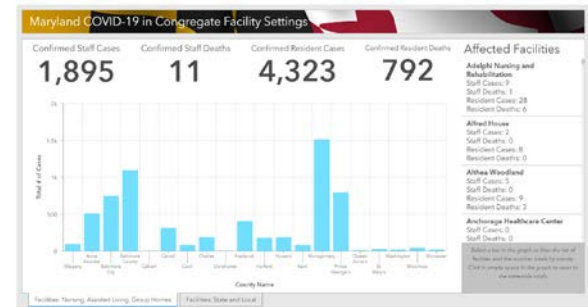
OBJECTID	DATE	Allegany	Anne_Arundel	Baltimore	Baltimore_City	Calvert	Caroline	Carroll	Cecil	Charles	DATE	Dorchester	Frederick	Garrett	Harford	Howard	Kent	Montgomery	Prince_George's	Queen_Anne's
1	3/13/2020	2	1	3	1	1	1													
2	3/14/2020	1	1	4	1															
3	3/17/2020	3	1	6	1															
4	3/18/2020	4	4	10	1															
5	3/19/2020	6	6	12	1															
6	3/21/2020	10	11	13	1															
7	3/21/2020	15	15	19	1															
8	3/22/2020	18	24	28	2	1	4	1	4											
9	3/23/2020	20	31	35	2	1	5	1	5											
10	3/24/2020	24	41	42	3	1	5	1	5											

Download



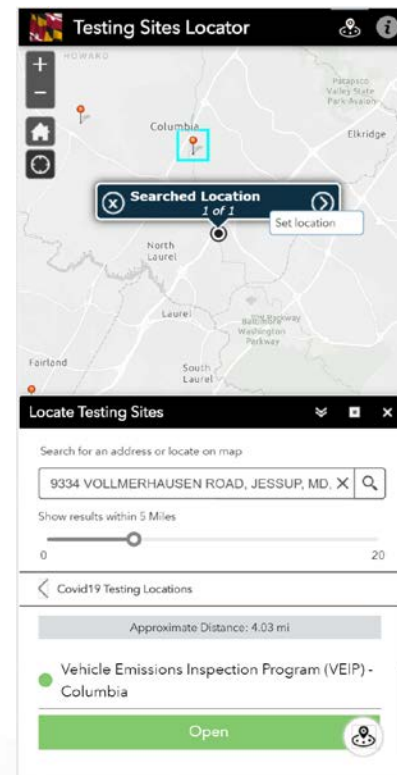
Congregate Facility Settings Dashboard

- Esri Hub Site Sub-page
- Launched 04/30/2020 @ 17:00
- MDH tweet saw more than 1,000,000 actions within the first 24 hours
 - Most viral social media communication, for MDH, to date



Testing Site Locator Application

- Esri Web Mapping Application
- In development
- Identify closest testing site
- Integration into COVID-19 hub site for ease of access and use
- Future consideration for mapping mobile testing sites and hours of operation



Operational Dashboards

PPE Tracker Dashboard

- Automated data updates
- Compiled data from multiple sources with single visualization
- Quick view: 24 hour change
- Daily Usage
- Distribution
- Forecasted numbers
- View of supply versus demand

Hospital Status Dashboard

- Automated data updates
- Compiled data from multiple sources with single visualization
- Charts and maps display counts of available beds and ventilators
- Thresholds trigger red “warnings”
- View statewide, regional and individual hospital status

Examples of Spatial Analysis

Identify location of resources based on location of population

Identify transfer options based on proximity and availability

Identify patterns in social distancing practices within communities

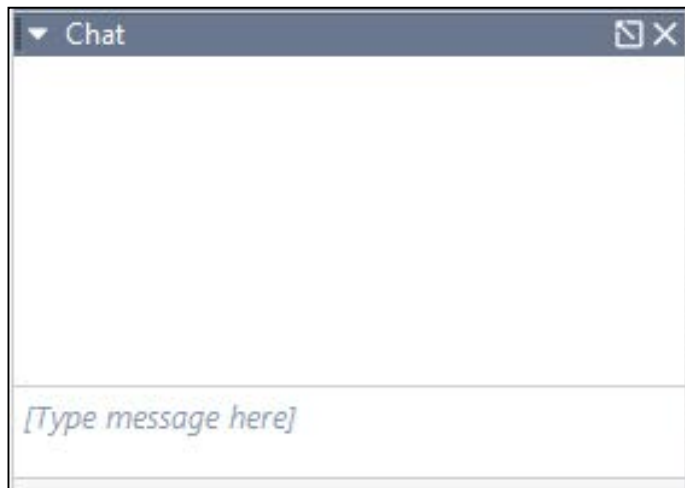
Identify patterns in movement of infection and recovery

What other correlations and answers will spatial analysis reveal?

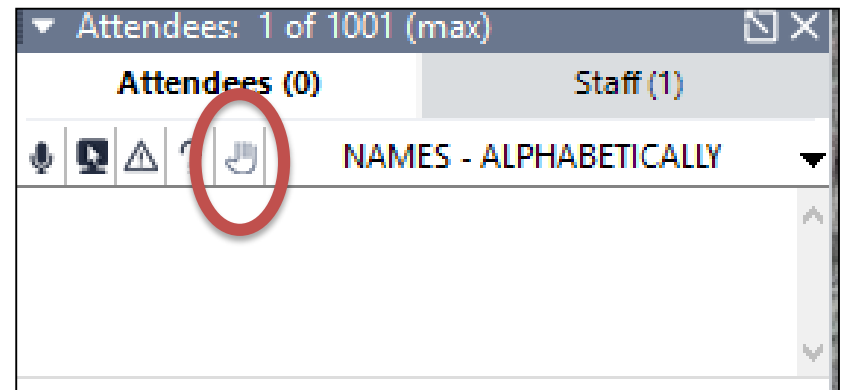
Q & A and Feedback

Q&A Period

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Future Webinars

- Tuesday, July 14, 2020
- Tuesday, September 8, 2020
- Tuesday, November 10, 2020

- To register, visit:
<https://attendee.gotowebinar.com/register/8495593598854798605>

- Previous State of 911 webinars are available at:
www.911.gov/webinars.html

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