The County of San Diego Health and Human Services Agency (HHSA) provides residents with services supporting the vision of a healthy, safe, and thriving community, a movement called Live Well San Diego. Every February, HHSA hosts an event called Love Your Heart, held at sites throughout San Diego and Mexico. There, HHSA and its partners provide free blood pressure screenings and talk to participants about how the results relate to their overall health. Within five years of its inception, the event expanded into Los Angeles, Texas, and Massachusetts.

The Challenge
The Love Your Heart event was conducted at over 200 locations, including libraries, convenience stores, and health centers, and served more than 31,000 participants in one day—17,000 people in San Diego alone. Along with the blood pressure reading, specific information about each participant needed to be recorded such as gender, age, blood pressure stage, and ZIP code and whether blood pressure medication was being taken. Prior to 2016, volunteer nurses or staff recorded this data by hand. Once the data was collected, it was sent by email or fax, which necessitated that all documents be double-checked by staff members, costing roughly 9 hours a week over the course of 12 weeks as the data was turned in.

The Solution
As the event attendance grew, HHSA leadership realized that the data collection process needed to be more efficient. Already a user of ArcGIS, HHSA decided to use Survey123 for ArcGIS. It provided the benefits that staff considered necessary to be successful including the ability to work offline, auto populated questions based on responses, ease of use, and the capability to be replicated for each site as needed.

At the 2016 event, one site was chosen to test the application against the hand-recorded data. The volunteers found that not only was the app quick and easy to use but also the results were visible in real time. HHSA leadership was able to see the survey results broken down into many different types of diagrams, including bar graphs, column graphs, pie charts, and overall percentages for each answer.

The Results
There are multiple ways that Survey123 for ArcGIS helped the County of San Diego save time and money. Surveys are now easy for the county’s geographic
Contents

Fall 2016

Cover
1 Enabling Mobile Data Collection for the Love Your Heart Event

Mobile Offer
4 Modernize Your Next Mobile Data Collection

Case Study
5 Defeating Polio in Iraq
6 New Mexico Connects Departments with Their Communities

Technology Trends
8 ArcGIS Open Data Is ready for you.
9 Moving Beyond Anecdotal Information
10 Four Story Maps: Using GIS to Make Data-Driven Decisions
12 Taking the Guesswork out of Community Health
14 Combat Any Vector-Borne Disease That Comes Your Way
15 Connect with the Esri Health and Human Services Community

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Enabling Mobile Data Collection for the Love Your Heart Event  

continued from cover

information system (GIS) team to build and maintain, and end users found the app to be effortless to operate. The return on investment was significant and seen immediately after the application’s implementation. By eliminating hand recording of data, it is projected that staff time saved at next year’s event will surpass 164 hours.

In addition, the ability to clean, aggregate, and push out the data to show results the next day was invaluable to quickly determine the overall health of the community and support Live Well San Diego. As a result of the application’s implementation, community leaders can make faster, better informed decisions and communicate positive changes that contribute to a healthy, safe, and thriving San Diego region.

“Compared with other methods, staff found the Survey123 application to be much more user-friendly. The ease of downloading the app and the survey template will make it very easy to encourage our partners to use it, which will greatly enhance our data collection efforts for Love Your Heart.”

Giang Nguyen
Love Your Heart Coordinator

For more information, visit go.esri.com/Heart.

Blood Pressure Screening outside San Diego City Hall at Love Your Heart 2016
Modernize Your Next Mobile Data Collection

Have you been using pen and paper to collect data in the field? Are you ready to quickly collect data, effectively analyze it, and share it within hours instead of weeks? With Esri’s scalable bundles, you will have the following capabilities:

- Create Data
- Plan and Analyze
- Visualize and Engage

Make data-driven decisions. Call 1-800-447-9778. Bundles are available in the United States only.

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ArcGIS Online
- ArcGIS Online—Includes up to five named users and 2,500 service credits
- Esri Community Analyst—Includes up to five named users
- Navigator for ArcGIS

Contact Us for Pricing
Deeating Polio in Iraq

Postimmunization Campaign Surveys Use Real-Time Data Collection

The outbreak of polio in Syria and Iraq in late 2013 and early 2014 was described by a United Nations spokesperson as “arguably the most challenging outbreak in the history of polio eradication.” Polio, a highly contagious disease that primarily afflicts children younger than age five, can lead to partial and sometimes fatal paralysis. What followed the outbreak was the largest immunization response in the history of the Middle East. More than 70 mass immunization campaigns were implemented in eight countries, aimed at reaching 27 million children. By October 2015, experts from the World Health Organization (WHO) and United Nations Children’s Fund (UNICEF) announced that the Middle East polio outbreak is closed.

Although Iraq is among countries no longer infected with the polio virus, it remains vulnerable. The WHO continues to work closely with the Ministry of Health in Iraq to carry out nationwide polio immunization campaigns, going from house to house to vaccinate children.

WHO follows up each campaign with a survey to assess vaccination rates. Surveys are designed to show whether vulnerable populations, such as internally displaced persons and refugees, are effectively reached. Collected data helps identify gaps—unvaccinated children and reasons for not vaccinating as well as hard-to-reach or insecure areas. WHO locates primary health care centers, districts, and provinces responsible for children who did not receive the vaccination. Instead of paper surveys, which can take weeks to collect and process, the WHO field team in Iraq gathered real-time data using Survey123 for ArcGIS, a mobile app from Esri.

“Survey123 for ArcGIS proved to be an end-to-end solution that covers authoring the form, accurate and real-time data collection, analysis, and visualization.”

Jawameer Kakakhan
WHO Technical Officer

The app was installed on 150 Android tablets (it also works on iOS and Windows devices). WHO survey teams reported on their experience with Survey123 for ArcGIS, saying that the app is user-friendly, is easy to handle, and simplifies data transmission. The team collected more than 60,000 polio surveys using Survey123 for ArcGIS and extended the use of the app to assess the cholera immunization campaign. According to Ravi Shankar, a technical officer at WHO headquarters, WHO offices in other countries have expressed interest in using Survey123 for ArcGIS in future field deployment activities.

For more information, visit go.esri.com/Polio.
New Mexico Connects Departments with Their Communities

Supplying community data and health statistics is the stock-in-trade of the New Mexico Community Data Collaborative (NMCDC). But this statewide data repository doesn’t just provide information to anyone on demand or in any haphazard manner; the NMCDC adheres to fine-tuned procedures and principles in supplying data and training to the users of its data warehouse.

The Challenge

There was a need to create a central, collaborative data service to support the state’s many health advocacy efforts. It was recognized that not only was a centralized data warehouse essential, but consolidating GIS services, as part of the collaborative, would improve quality, increase data standardization, and apply geospatial formats to many databases for ease of use. This type of data warehouse would also come with many requests for data from multiple organizations throughout the state. In addition to protecting and anonymizing individual data, geocoding addresses, and pushing out data that was safe for public sharing and mapping, analysts were also being sent many requests for datasets, maps, and shapefiles.
The Solution
Interested in empowering and engaging its communities, NMCDC was created to have one central data warehouse that provides data at the subcounty neighborhood level so that decisions about local services and resource allocation, as well as identification of health disparities, can be made more accurately.

Having not only health data but also other datasets—such as income, crime, education, and service data—is essential to recognizing the root causes that result in health outcomes. GIS helps analysts see the relationship between these datasets, which leads to a clearer understanding.

To easily share data with those stakeholders who needed it, the collaborative found the ArcGIS Online services ideal. But NMCDC wasn’t just interested in sharing these resources with its community partners and other departments; it also wanted to teach users how to explore and interpret their community indicators using ArcGIS Online organizational resources.

The Results
NMCDC is a network of more than 50 active public health advocates and analysts from more than three dozen state agencies and nongovernmental organizations. Since NMCDC went online in November 2011, collaborators and staff have organized more than 80 workshops, attended by more than 600 people, which has helped them to strategically plan interventions, target limited resources, and change policy. On the website, there are more than 75 maps, apps, and galleries, with several hundred shared shapefiles being opened more than 100 times a day.

Open your data: go.esri.com/Open
Nmcdc.maps.arcgis.com
ArcGIS Open Data Is Ready For You.

The key to unlocking your data just got a lot easier. And you may not need to spend a penny more on software. Here’s how:

ArcGIS Open Data gives you the tools to break down the communication barriers in your community and drive engagement in one of the most intuitive ways—via maps. Whether you want to plot farmers’ markets, show childcare locations, or visualize vulnerable populations, everything you need to open your data in a matter of minutes may be available through your existing technology.

Join health and human services organizations throughout the nation that are already leveraging their ArcGIS investment as their open data backbone to help improve health disparities, connect communities with resources, and much more. Start easily sharing the information you’ve collected and maintained.

To learn more about Esri’s open vision, go to go.esri.com/OpenDataVision.

Follow these simple steps to get started right now:

Are you an ArcGIS Online user?

You have immediate access to ArcGIS Open Data.

Visit go.esri.com/OpenDataVision to learn how to enable ArcGIS Open Data and get started on your website.

Are you an ArcGIS for Desktop user with a current maintenance license?

ArcGIS Online is part of your ArcGIS for Desktop license and includes ArcGIS Open Data.
In spring of this year, recognizing the growing epidemic of opioid abuse, the National League of Cities (NLC) and National Association of Counties (NACo) convened the National City-County Task Force on the Opioid Epidemic. The task force brought together 24 elected officials representing cities and counties to better define the problem, identify programs and collaboration opportunities, and—most importantly—discover how to scale existing collaborations and solutions nationally. This discussion and ones at the subsequent meetings and events on this issue that I’ve either attended or tracked were both of great value and enlightening. But I’m still a little frustrated, for there wasn’t enough emphasis placed on perspective. Most of the information provided or shared was anecdotal, at a national scale, or—worse—three or four years out of date. While most public officials know that data measuring overdose deaths—and, in particular, opioid-related deaths—was collected by their jurisdiction, they often didn’t know that they had access to the data, commonly assuming it’s protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). Yes, data about named individuals or data that can be traced back to individuals is covered by HIPAA. But data that is useful to the development of policy and needed to support analysis and understanding of the opioid problem is available. Most importantly, data that is required to measure the need for policy and programs and is vital to prove the value and worth of programs to stem and circumvent addiction is not being exploited, used, or collected at anywhere near the level that we collect and use data about road safety and auto accident deaths.

At the NLC/NACo task force meeting and from content provided by the National Governors Association, the Council of State Governments, and other groups, I learned two facts:

- Those at highest risk include people between 35 and 54 years old. One report found that deaths from just opioids in this age group have exceeded those from firearms and car crashes.
- In 2014, opioid addiction accounted for 18,893 overdose deaths related to prescription pain relievers, and 10,574 overdose deaths related to heroin. Compare the 29,467 opioid-related deaths to the 32,675 deaths on our highways and roads.

Knowing that the best way to communicate with humans is through stories and that most people are visual learners and love to look at maps, I wanted to create a map to help explain some of the information that we could obtain and add some geographic context. Working with both NACo and NLC, the maps above were created. The data is not perfect; we learned how difficult it is to find and collect any meaningful data at a nationwide level. But the purpose of the story map is to start a conversation. With an issue that is this important, we need to deliver more and more information to as wide an audience as possible.

The Opioid Epidemic Story Map: go.esri.com/OpioidBlog
Four Story Maps: Using GIS to Make Data-Driven Decisions

In our world today, it is imperative that the use of GIS is integrated within all government organizations. Esri software provides a plethora of services that help with issues throughout the health and human services industry. The advancement of mapping technology has provided health professionals with resources to make data-driven decisions that will impact the world in a positive way. Check out the following four maps. Explore how GIS helps health and human services organizations make decisions using data from these amazing interactive maps.

War on Hunger
Go.esri.com/Hunger

The Capital Area Food Bank (CAFB) has been working on a map for the last couple of years to solve many problems such as hunger, chronic undernutrition, heart disease, and obesity. This map has been a tool for delivering food into hard-to-reach areas and helping the CAFB give food to 540,000 people each year. The Washington Post believes that the data on this heat map could “revolutionize the war on hunger.”

A Roof Over Los Angeles
go.esri.com/Shelter

The Los Angeles Homeless Service Authority worked with volunteers to assist the homeless around the Los Angeles (LA) River and spread the word about the possible impact of El Niño. These volunteers visualized where homeless shelters could provide assistance during extreme weather conditions. Data was collected that showed how many people and encampments there were in the homeless community.
Understanding the Opioid Epidemic

go.esri.com/OpioidEpidemic

The opioid epidemic is at an all-time high, with an average of 78 Americans a day dying from opioid overdose. Local and state governments, along with many other organizations, have begun to take action against opioid abuse and have mapped data to show opioid mortality, prescription drop-off locations, and treatment areas. The National Association of Counties and the National League of Cities have created a task force to assess how local governments can collaborate on this crisis.

Tobacco: What’s in Store for Your Kids?

go.esri.com/Tobacco

The Montana Department of Public Health & Human Services has utilized Esri software to create the Montana Tobacco Retailer Mapper, which shows the reality of tobacco products being advertised to youth. Tobacco companies spend $7.8 billion on advertising, and these maps show in depth how their messages attract youth. The site also highlights reACT youth showing legislators the maps and their fight against tobacco.
The mission of Loma Linda University Health (LLUH) is to strengthen community health so that individuals and families can enjoy longer, healthier lives. Like other community health institutions, LLUH uses GIS technology to support community health needs assessments. Using GIS, LLUH combines geography with data to help decision-makers understand what affects community health—and focus resources in the areas with the greatest need.

The Challenge
An essential component of needs assessments is developing mapping applications that identify the location of community assets. These consist primarily of points of interest (POI), such as hospitals, clinics, and pharmacy locations, to which health professionals can refer patients.

In the summer of 2014, LLUH’s Community Health Mapping Program team embarked on a mission to revamp its community asset data collection and vetting process. The existing asset database was incomplete; not only was the information outdated, but it also only included asset information from nonprofit organizations that had voluntarily shared data.

The Partner
In need of a more robust database, LLUH, a Southern California institution, turned to Esri Platinum Tier partner HERE. Founded in 1985, HERE collects, processes, and distributes robust location data. When LLUH asked for a solution that provides credible, up-to-date POI data, HERE presented StreetMap Premium for ArcGIS, paired with ArcGIS for Desktop.

The Solution
With StreetMap Premium for ArcGIS, there was no longer a need to validate or geocode data. It wasn’t necessary to
search and scrub websites for weeks in an attempt to locate data—instead, valid POI data was readily available.

The team pulled and plotted the location of community health assets in ArcGIS for Desktop. In addition to mapping the locations of pharmacies, community clinics, schools, and hospitals, the team identified and mapped areas that lack such assets. The team also mapped resources relative to areas where there are high concentrations of patients with asthma, diabetes, and heart failure. Further database enhancements included information on the availability of grocery and specialty food stores, restaurants, retirement facilities, fitness and health clubs, fire departments, and police stations.

**The Results**

LLUH’s revamped community asset maps better support community health needs assessments, hospital readiness reduction programs, and school health interventions for preventive care. With improved community asset maps in hand, LLUH was able to position interventions where the need was greatest. The Community Health Mapping Program team identified regions that lack health resources for addressing obesity, diabetes, mental health issues, and respiratory illnesses. The POIs were an essential component to bringing together trusted information on boundaries, roads, and health assets.

The updated mapping applications continue to support leadership in determining grant development by demonstrating the need for more health care professionals in medically underserved areas. Leaders also leverage asset data when working with clinics to engage underinsured communities. Together, LLUH and partners are better able to target interventions that promote active lifestyles and lower risks of chronic illnesses.

Learn more about GIS in health at go.esri.com /LomaLinda.

“Before we implemented StreetMap Premium for ArcGIS, data quality was a major problem. Now we don’t have to worry about validating data and can focus on what matters most—improving the health of our community.”

James Martinez
Population Health and GIS Analyst at Loma Linda University Health
Combat Any Vector-Borne Disease That Comes Your Way

The Zika virus is the latest in a long line of vector-borne diseases, and it won’t be the last. Make sure that you are prepared for the introduction and reoccurrence of diseases. Leverage the power of location to increase timely communication about vector-borne disease and empower decision-makers to improve awareness, planning, and response time. Effective disease surveillance starts with prevention and education. Ensure that you have the tools to protect your population.

Increase efficiency. Call 1-800-447-9778.
Connect with the Esri Health and Human Services Community

Want regular updates, best practices, training suggestions, and the ability to connect with your GIS community? The health and human services team has many forms of communication that you can link to. Connect with us through your favorite social media platform!

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**GeoNet, The Esri Community** ...... go.esri.com/GeoNetHHS

**LinkedIn Groups** .............................. Esri Health: go.esri.com/LinkedInHealth

Esri Human Services: go.esri.com/LinkedInHS

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Upcoming Health and Human Services GIS Conference
Fall 2017
More Information to Come
Is Your Community Healthy?

Governments and health service providers work together by sharing information to assess health risk, track disease, determine where health services are needed most, and prioritize areas for interventions. They share this knowledge with the public to help citizens understand health issues and find resources when they need them. When forward-thinking leaders include health services in their smart technology strategies, community health becomes a community mission.

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