NACCHO
National Association of County & City Health Officials

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2020 Model Practices

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Size

Select a size: *

- ☐ Small (0-50,000)
- ☐ Medium (50,000-499,999)
- ☑ Large (500,000+)

Application Information

Local Health Department/Organization Name: *
Florida Department of Health Pinellas County

Title of Practice: *
Hepatitis A Outbreak Response: Foot Team Deployment Using Geospatial High-Risk Activity Data

Submitter Name: *
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Practice Categories

Model and Promising Practices are stored in an online searchable database. Applications may align with more than one practice category. Please select the most relevant category that applies most to your practice: : *

- [ ] Access to Care
- [ ] Advocacy and Policy Making
- [ ] Animal Control
- [ ] Coalitions and Partnerships
- [ ] Communications/Public Relations
- [ ] Community Involvement
- [ ] Cultural Competence
- [ ] Emergency Preparedness
- [ ] Environmental Health
- [ ] Food Safety
- [ ] Global Climate Change
- [ ] Health Equity
- [ ] HIV/STI
- [ ] Immunization
- [x] Infectious Disease
- [ ] Information Technology
- [ ] Injury and Violence Prevention
- [ ] Marketing and Promotion
- [ ] Maternal-Child and Adolescent Health
- [ ] Organizational Practices
- [ ] Other
- [ ] Primary Care
- [ ] Quality Improvement
- [ ] Research and Evaluation
- [ ] Tobacco
- [ ] Vector Control
- [ ] Water Quality
- [ ] Workforce

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- [ ] Access to Care
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Overview: Provide a brief summary of the practice in this section (750 Word Maximum)

Your summary must address all the questions below:

- Brief description of LHD- location, demographics of population served in your community.
- Describe public health issue.
- Goals and objectives of the proposed practice.
- How was the practice implemented/activities.
- Results/Outcomes (list process milestones and intended/actual outcomes and impacts.
- Were all of the objectives met?
- What specific factors led to the success of this practice?
- Public Health impact of practice.
- Website for your program, or LHD.

Please use this portion to respond to the questions in the overview section. : *

Description of LHD Pinellas County, located on the west coast of Florida, has a population of approximately 975,280 residents.(1) According to the U.S. Census Bureau estimates, non-Hispanic, white persons comprised 74.7% of the Pinellas County population in 2017, followed by non-Hispanic Black persons at 10%. Nationally, 16% of the country is above the age of 65, whereas Pinellas County is at 24.8%. (2) Situated on 608 square miles, only 274 of which are land, Pinellas County is the most densely populated county in Florida, with a density of 3,292 people per square mile. The Florida Department of Health in Pinellas County (DOH-Pinellas) is one of 67 County Health Departments operating under the Florida Department of Health (DOH). DOH-Pinellas serves Pinellas County with more than 700 employees in five different health department locations throughout Pinellas.

Public Health Issue Hepatitis A is an acute viral disease of the liver that is spread person-to-person through the fecal-oral route. The infection typically causes self-limited symptoms; however, in persons with pre-existing liver diseases, hepatitis A may be fatal. (3) After the Advisory Committee on Immunization Practices recommended childhood vaccination in elevated communities in 1999 cases fell from 854 to 165 reported yearly by 2008 in Florida.(4) Florida rates of hepatitis A cases remained low and were commonly travel-associated until increases of locally-acquired cases were detected in early 2018. In Pinellas County, the increase was dramatic, from an average of three cases a year between 2013-2017 to 113 cases in 2018 and 262 by May of 2019. By that time, over 77% were hospitalized for the disease. DOH-Pinellas began response activities as a coordinated Incident Management Team (IMT) in October 2018. To further the response efforts, the Florida State Surgeon General declared a Public Health Emergency on August 1, 2019. Most Hepatitis A infections were found among white, non-Hispanic males and in the 30-49 age group. Common risk factors included homelessness, current or previous incarcerations and a history of illicit drug use. Investigations further revealed most cases did not spend time in shelters or rehab facilities, but reported couch-surfing, residing in motels or without a permanent address. In addition to increased community outreaches and public health advisories, an intervention was needed that would effectively identify sites frequented by high-risk persons to assist with the dissemination of education and hepatitis A vaccines.

Goals To properly respond to the hepatitis A outbreak, the DOH-Pinellas IMT established a goal to vaccinate highest risk individuals and provide education using the field approach of foot teams.

Objectives The objectives of the DOH-Pinellas Foot Teams were to 1) track disease spread and conduct timely investigations to identify areas at highest risk for hepatitis A transmission, 2) provide targeted vaccinations to individuals at highest risk, and 3) disseminate hepatitis A risk reduction information to the community.

Implementation A concept of operations was developed to enhance outreach to target those hard-to-reach populations. To identify areas where high-risk activity was occurring, arrest records for hepatitis A cases incarcerated within the last six months were retrieved from the Pinellas County Clerk of Court records. Of interest were arrests that involved drug use, drug paraphernalia, or possession of drugs. The record search provided the location, offense, and arrest date, and the data was categorically standardized before it was mapped in ArcGIS. Identified areas were prioritized based on cluster size and distribution within the county. Following the foot team model utilized by San Diego in their 2017 outbreak, teams comprised of nurses, disease investigators and trained support staff traveled location-to-location, person-to-person utilizing a wagon filled with supplies and incentives to provide no-cost vaccines and education to individuals in identified areas. The first foot team was deployed in May 2019.

Results/Outcomes The main objectives of this practice were met: Since implementation, at least two foot teams were mobilized each week providing 995 vaccines to high-risk individuals. Throughout the outbreak response period, DOH-Pinellas has administered over 23,870 hepatitis A vaccines in Pinellas County.

Public Health Impact Despite vaccinating a high number of individuals through traditional outreaches at drug treatment facilities, homeless shelters and the county jail, a significant portion of at-risk individuals were reached as a result of a more aggressive approach that included spatial data analysis and foot team operations. The spread of disease and identified hepatitis A cases has declined in Pinellas County from 52.9 per 100,000-person months in May 2019 to 2.5 per 100,000 in November 2019.

Website for LHD The official website is http://pinellas.floridahealth.gov/

References

1U.S. Census Bureau. Quick facts. Population (2019). https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk

2U.S. Census Bureau. Quick facts. Population (2019). https://www.census.gov/quickfacts/fact/table/US/AGE775218

3Centers for Disease control and Prevention. Hepatitis A overview (2019). https://www.cdc.gov/hepatitis/hav/havfaq.htm#general

4Prevention of Hepatitis A through Active or Passive Immunization – Recommendations of the Advisory committee on Immunization Practices (ACIP). *MMWR*. 2006. 55(RR07):1-23.

Responsiveness and Innovation

A Model Practice must be responsive to a particular local public health problem or concern. An innovative practice must be -

1. new to the field of public health (and not just new to your health department) OR
2. a creative use of an existing tool or practice, including but not limited to use of an Advanced Practice Centers (APC) development tool, The Guide to Community Preventive Services, Healthy People 2020 (HP 2020), Mobilizing for Action through Planning and Partnerships (MAPP), Protocol for Assessing Community Excellence in Environmental Health (PACE EH). Examples of an inventive use of an existing tool or practice are: tailoring to meet the needs of a specific population, adapting from a different discipline, or improving the content.

Please state the Responsiveness and Innovation of your practice : *

Problem/Public Health Issue Between 2013 – 2018, cases of hepatitis A infections increased by 294% in the United States.(5) In Pinellas County, the increase was dramatic from an average of three cases a year between 2013-2017 to 113 cases in 2018 and 262 by May of 2019. Epidemiologic investigations conducted by DOH-Pinellas revealed that most cases were locally-acquired and found to be among people who use drugs, were experiencing homelessness and/or were recently incarcerated. Interventions to mitigate ongoing transmission of hepatitis A included vaccination outreaches to homeless shelters, drug treatment facilities and the county jail. Despite vaccinating a high number of individuals, a significant portion of at-risk individuals were not being reached.

Target Population Through ongoing analysis between January 2018 and May 2019 it was identified that 17% of cases reported currently experiencing homelessness, and an additional 17.6% reported being homeless in the previous three months before infection. An added 10% reported unstable housing defined as couch surfing, hotel, or a hostel as their living arrangement. Drug use was also found to be a major risk factor with 60.5% of cases reported having used drugs in the previous two to six weeks before symptom onset. Analysis also found that 65.9% of confirmed cases reported being incarcerated during their lifetime, and 27.5% had been incarcerated six months prior to symptom onset. Of individuals arrested in six months prior to symptom onset, 20.2% were incarcerated on drug related charges.

This analysis concluded that high-risk groups in Pinellas County were persons experiencing homelessness or unstable housing, history of drug use, or a history of incarceration. The Florida Department of Health, using the Homeless Management Information System Data and the Substance Abuse and Mental Health Services through the Centers for Disease and Prevention (CDC), estimated that 2.3% of the population in Pinellas County were at a heightened risk of being exposed to hepatitis A. Housing instability, limited access to healthcare, transportation, distrust of public officials and public messages, and frequent lack of contact information make this population difficult to reach for preventive services such as vaccination and contact tracing.

Past Efforts The response to the hepatitis A outbreak included offering no-cost vaccinations to the public, reoccurring outreaches in community settings, routine visits to the local jail, and targeted education. Partner engagement and media campaigns included community-wide vaccination and sanitation messaging. Case investigations were completed in person as permittable and public health nurses were available to assist with vaccination of contacts to ensure timely response. Health Advisories were distributed to local healthcare providers to assist with early case detection and vaccination efforts. Interventions were early and community-wide; however, consideration of spatial disease distribution and targeted outreach did not take precedence.

Innovation To identify areas where high-risk activity was occurring, arrest records for hepatitis A cases incarcerated within the last six months were retrieved from the Pinellas County Clerk of Court records. Of interest were arrests made that involved drug use, drug paraphernalia, or possession of drugs. This record search generated a list of offenses, containing a “Complaint and Advisory” form for every arrest pertaining to that offense. That search provided the location, offense, and arrest date, and the data was categorically standardized before it was mapped in ArcGIS. The initial maps were static representations of all locations from the start of the outbreak, but later maps utilized a time-series representation to ensure outreach decisions were informed by up-to-date data to mobilize foot teams. Identified areas were prioritized based on cluster size and distribution within the county.

The DOH-Pinellas IMT Planning and Operation Sections reviewed the maps and conducted physical surveillance of those areas to identify the best locations for foot team outreaches. Nonconventional locations, including shipping docks, motels and convenience store parking lots were identified by mapping areas with potential for high-risk activities. The outreaches included a minimum of one nurse, one support staff and one disease investigator. The team offered vaccinations and education within the specified outreach location using a wagon with vaccine supplies and incentives.

Evidence-based The targeted foot teams implemented by DOH-Pinellas were modeled after evidence-based practices, including CDC guidelines. The concept of foot teams utilized in Pinellas were developed from the success seen in San Diego during their 2017 hepatitis A outbreak.(6) Their disease surveillance identified that persons experiencing homelessness were disproportionately affected which led to mobile foot teams providing vaccines in homeless encampments.

Evolving on this practice, Pinellas County surveillance identified that cases were more likely to have been previously incarcerated, used illicit drugs, or were without permanent housing more than the general population. Using UNICEF’s Guidance on the Use of Geospatial data and technologies in Immunization Programs, DOH-Pinellas followed the Geospatial data management chain to ensure the validity and reliability of the maps.(7) Spatial modeling was used to identify arrest location type (e.g. convenience store, hospital, etc) and density of arrests. From this, heat maps were developed to look for densely noted sites and geospatially track the infection to identify possible pockets of transmission within the county.

References

5 Increase in hepatitis A Virus Infections – United states, 2013-2018. *MMWR*. (2019). 68(18);413-415.

6 County of San Diego. Hepatitis A outbreak – After Action Report. (2018). https://www.sandiegocounty.gov/content/dam/sdc/cosd/SanDiegoHepatitisAOutbreak-2017-18-AfterActionReport.pdf

7 UNICEF’s Guidance on the Use of Geospatial data and technologies in Immunization Programs. https://www.unicef.org/media/58181/file

LHD and Community Collaboration

The LHD should have a role in the practice's development and/or implementation. Additionally, the practice should demonstrate broadbased involvement and participation of community partners (e.g., government, local residents, business, healthcare, and academia). If the practice is internal to the LHD, it should demonstrate cooperation and participation within the agency (i.e., other LHD staff) and other outside entities, if relevant. An effective implementation strategy includes outlined, actionable steps that are taken to complete the goals and objectives and put the practice into action within the community.

- Goal(s) and objectives of practice
- What did you do to achieve the goals and objectives?
    - Steps taken to implement the program
- Any criteria for who was selected to receive the practice (if applicable)?
- What was the timeframe for the practice were other stakeholders involved?
- What was their role in the planning and implementation process?
    - What does the LHD do to foster collaboration with community stakeholders? Describe the relationship(s) and how it furthers the practice goal(s)
- Any start up or in-kind costs and funding services associated with this practice? Please provide actual data, if possible. Otherwise, provide an estimate of start-up costs/ budget breakdown.

Enter the LHD and Community Collaboration related to your practice : *

Goals To properly respond to the hepatitis A outbreak, the DOH-Pinellas IMT established a goal to vaccinate highest risk individuals and provide education using the field approach of foot teams.

Objectives The objectives of the DOH-Pinellas Foot Teams were to 1) track disease spread and conduct timely investigations to identify areas at highest risk for hepatitis A transmission, 2) provide targeted vaccinations to individuals at highest risk, and 3) disseminate hepatitis A risk reduction information to the community.

Selection criteria To identify areas to deploy foot teams, arrest records for hepatitis A cases incarcerated within the last six months were retrieved from the Pinellas County Clerk of Court records. Of interest were arrests made that involved drug use, drug paraphernalia, or possession of drugs. This record search generated a list of offenses, containing a "Complaint and Advisory" form for every arrest pertaining to that offense. That search provided the location, offense, and arrest date, and the data was categorically standardized before it was mapped in ArcGIS. Identified areas were prioritized based on cluster size and distribution within the county. Case reviews and risk factors were updated weekly.

Timeframe Data gathering and analysis was ongoing during the entire Hepatitis A outbreak response. Following the development and approval of the concept of operations in May 2019, the teams were mobilized to the identified areas. DOH-Pinellas IMT agreed that the foot teams would continue to be scheduled weekly until the local outbreak concluded.

Stakeholders Community partners were utilized as a resource to assist with determining the best times and locations where people congregate while considering the mapped areas. Regular updates on the status of the hepatitis A outbreak were communicated to healthcare providers and community partners who care for persons who use drugs or may interact more frequently with facilities serving the target population (e.g., behavioral specialists, disease intervention specialists). DOH-Pinellas IMT members ensured timely notification of the appropriate individuals, agencies or businesses (e.g., hotel/motel owners, local police department/sheriff's office, mobile shower operators, established gatekeepers) within the foot team outreach locations and provided date/time of foot team operation. Foot teams collaborated with local coalitions and partners already serving the population to maximize services provided.

Implementation Foot teams were scheduled and deployed to mapped locations once it was determined it would be an appropriate location for vaccine distribution and an area where high-risk groups and activity. If the foot team outreach location was a densely populated area, the Planning staff would consider setting up a headquarters with a stationary foot team. Additional foot teams were sent to the surrounding areas from the headquarter location. Foot team outreaches lasted approximately three hours to include briefing, driving to the location and return. The DOH-Pinellas IMT Logistics Section ensured each foot team received one wagon with all needed supplies (e.g., incentives, vaccines, vaccine supplies, registration forms and vaccine information sheets). Foot teams were required to document date, time, duration and location of HQ and foot team areas in the appropriate outreach log. Additional information included the number of encounters, number of vaccines given and number of declinations received.

Funding Re-appropriated federal funding was utilized to aid in the statewide response to the Hepatitis A outbreak and the startup costs of the foot team operations. Funding was provided through the State DOH to supplement the costs of staffing and outreach supplies, including wagons, medical supplies and incentives to encourage individual participation.

Evaluation

Evaluation assesses the value of the practice and the potential worth it has to other LHDs and the populations they serve. It is also an effective means to assess the credibility of the practice. Evaluation helps public health practice maintain standards and improve practice. Two types of evaluation are process and outcome. Process evaluation assesses the effectiveness of the steps taken to achieve the desired practice outcomes. Outcome evaluation summarizes the results of the practice efforts. Results may be long-term, such as an

improvement in health status, or short-term, such as an improvement in knowledge/awareness, a policy change, an increase in numbers reached, etc. Results may be quantitative (empirical data such as percentages or numerical counts) and/or qualitative (e.g., focus group results, in-depth interviews, or anecdotal evidence).

- What did you find out? To what extent were your objectives achieved? Please re-state your objectives.
- Did you evaluate your practice?
    - List any primary data sources, who collected the data, and how? (if applicable)
    - List any secondary data sources used. (if applicable)
    - List performance measures used. Include process and outcome measures as appropriate.
    - Describe how results were analyzed.
    - Were any modifications made to the practice as a result of the data findings?

Please enter the evaluation results of your practice : *

Objectives and results The objectives of the DOH-Pinellas Foot Teams were to 1) track disease spread and conduct timely investigations to identify areas at highest risk for hepatitis A transmission, 2) provide targeted vaccinations to individuals at highest risk, and 3) disseminate hepatitis A risk reduction information to the community.

At the beginning of the response, DOH-Pinellas was only able to provide vaccines to individuals who attended stationary community outreaches at specific locations across the county or clients who came in to the health department locations. The addition of deploying foot teams to locations occupied by high-risk individuals assisted with meeting our objectives and reducing the burden of disease in Pinellas County. Operations included routine tracking of vaccines provided to the target population. Cases were reviewed and addresses of where arrests occurred were gathered for timely mapping and deployment. DOH-Pinellas IMT performed weekly reviews of foot team progress and presented information at IMT meetings.

Disease transmission and identified hepatitis A cases has declined in Pinellas County from 52.9 per 100,000-person months in May 2019 to 2.5 per 100,000 in November 2019. Since implementation, at least two foot teams were mobilized each week, at which 995 vaccines were delivered to high-risk individuals. DOH-Pinellas provided over 23,000 vaccines to high-risk individuals from January 2018 to November 2019. Furthermore, as foot team efforts increased, public awareness of hepatitis A and local response activities grew. Broad media interest, both locally and nationally, resulted in numerous newspaper articles and news broadcasts of our foot team efforts. Ultimately, the practice of targeted foot teams increased awareness and education about the hepatitis A outbreak and importance of vaccination among local businesses, health care providers, and the community.

Sustainability

Sustainability is determined by the availability of adequate resources. In addition, the practice should be designed so that the stakeholders are invested in its maintenance and to ensure it is sustained after initial development (NACCHO acknowledges that fiscal challenges may limit the feasibility of a practice's continuation.)

- Lessons learned in relation to practice.
- Lessons learned in relation to partner collaboration. (if applicable)
- Did you do a cost/benefit analysis? If so, describe.
- Is there sufficient stakeholder commitment to sustain the practice?
    - Describe sustainability plans.

Please enter the sustainability of your practice : *

Lessons Learned Vaccination and education is key to the prevention and reduced disease transmission of hepatitis A in the community. Through foot teams, DOH-Pinellas developed a more holistic and timely approach to providing services in these hard-to-reach populations. Collaboration with local coalitions and partners already serving the population maximized services provided. One example included a community partner accompanying a foot team to provide Narcan to individuals and establish trust in the community. As with most public health interventions, acknowledging comorbidities amongst the target population improved intervention efforts and created a sustainable model for future efforts.

Mapping was also improved throughout response activities. Initially, maps were static representations of all arrest locations from the start of the outbreak. However, ongoing analysis found that a 'moving target' approach would provide more up-to-date data and maps utilized a time-series representation. This analysis allowed surveillance to identify emerging focal areas for intervention. Reaching the community in non-conventional locations and going person-to-person contributed to higher vaccination rates across the county. Combatting the rise in hepatitis A took collaboration, education, vaccination and a willingness to look at the data from a different perspective.

Future Plans Planning and operational materials developed during the response can be used in future vaccine-preventable outbreaks. Tools developed from this response will be maintained and used to sustain professional work in planning for, responding to, and recovering from disasters and other public health emergencies. Housing instability, limited access to healthcare, distrust of public officials and public messages are issues among this population that still need to be addressed.

Additional Information

How did you hear about the Model Practices Program:: *

- ☐ I am a previous Model Practices applicant
- ☐ At a NACCHO conference
- ☑ Colleague in my LHD
- ☐ Colleague from another public health agency
- ☐ E-Mail from NACCHO
- ☐ NACCHO Publication (Connect, Exchange, Public Health Dispatch)
- ☐ NACCHO Website

Have you applied for Model Practices before?: *

- ☑ No, this is my first time applying.
- ☐ Yes, I have applied in the past.

If you answered yes to the question above, please let us know the year and award type. :