



# **Health Security and Public Health Preparedness in the U.S.-affiliated Pacific Islands: Partnering for Success**

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Pacific Island Health Officers Association

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# Speaker

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- U.S. Centers for Disease Control and Prevention
- Career Epidemiology Field Officer: U.S.-affiliated Pacific Islands (USAPI)
  - (Duty Station: Guam)
- Center for Preparedness and Response
  - Pacific-lead for CDC Zika response 2017
- Prior to CDC: Family Physician in Yap, FSM (7 years)



Tai

All is well here in Yap, although while I was on the long field trip to the outer islands a strange illness has spread here in Yap. Probably nothing to worry about but the infectious disease committee here wanted to see if we could get some advice from the CDC. I thought you might be able to direct me to someone that could help.

Likely its a virus that has appeared to spread fairly easily. It usually starts with malaise and a low grade fever. After about a day or two patient's then develop a papular rash on the arms, legs and trunk. It appears to spare the palms and soles. For some it is puritic. In addition people develop joint pain with effusions. There have also been reports of loose stool and conjunctivitis. It doesn't seem to have the severe myalgia or headaches that the last dengue outbreak had. Just by pattern of spread within families my guess would be that the incubation period is about 2 days. It seems the illness lasts about a week and people seem to recover completely. So far there hasn't been any hospitalization because of the illness. It is estimated that maybe 500 people have already come down with the illness.

It could still be dengue, but the committee wanted to identify the illness in order to make sure our obstetrical patients aren't at risk.

Do you have any ideas?

Do you think there a way we could get acute and convalescent serum to be analyzed?

- May 31, 2007
- Staff Physician in Yap State e-mails  
Tai-Ho Chen, EIS  
Officer in  
Pennsylvania

# Outline

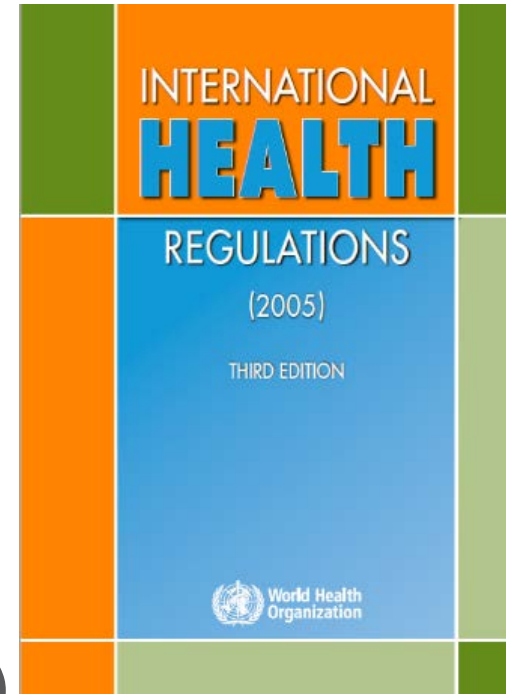
- Review Health Security, including WHO's International Health Regulations (IHR) and CDC's Public Health Emergency Preparedness (PHEP) Cooperative Agreement
- Discuss challenges and assets for the implementation of health security in the USAPI
- Discuss the partnerships for building local and regional health security
- Share recent outcomes in public health preparedness and response
- Critique successes to guide potential next steps

# GLOBAL HEALTH SECURITY

- *Definition: the activities required, both proactive and reactive, to minimize vulnerability to acute public health events that endanger the collective health of populations living across geographical regions and international boundaries (WHO)*

# International Health Regulations (IHR)

- Legally binding agreement between 196 countries, including the US and Freely Associated States (FAS)
- Aim: prevent and respond to public health risks with potential to cross borders
- Obligations:
  - Reporting of Public Health Emergencies of International Concern (PHEIC)
  - Establish National Focal Points for IHR
  - Develop, strengthen, and maintain core capacities for surveillance and response (**IHR Core Capacities**)



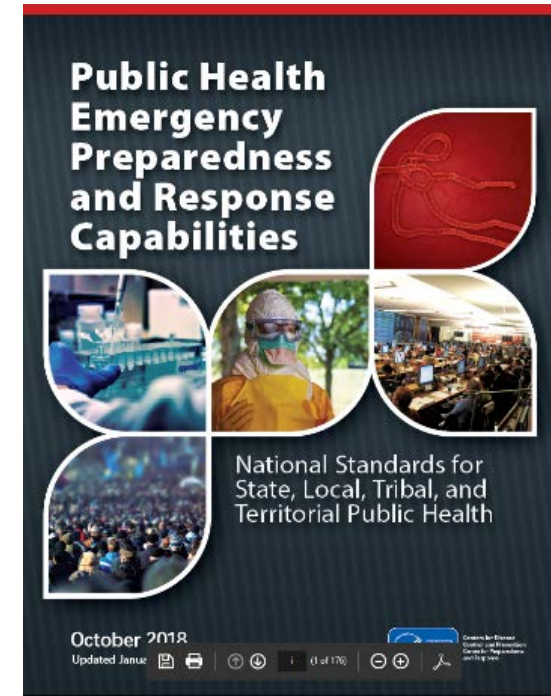
# CDC's Public Health Emergency Preparedness (PHEP) Cooperative Agreement

- Since 2002, PHEP provides funding and technical assistance to public health departments to build and strengthen abilities to respond to public health threats
- All three of the FAS receive PHEP funding

— 2019 funding amounts:

American Samoa: \$411,385	FSM: \$467,114
CNMI: \$410,851	Palau: \$374,215
Guam: \$532,702	RMI: \$408,616

- 15 Public Health Emergency Preparedness and Response Capabilities serve as national standards for preparedness planning



## IHR Core Capacities (WHO)

1. National legislation, policy and financing
2. Coordination and NFP communications
3. Surveillance
4. Response
5. Preparedness
6. Risk communication
7. Human resources
8. Laboratory
9. Ports of Entry
- 10.1 Hazards: Zoonoses
- 10.2 Hazards: Food Safety
- 10.3 Hazards: Chemical Emergencies
- 10.4 Hazards: Radiologic Emergencies

## Capability Standards (CDC PHEP)

1. Community Preparedness
2. Community Recovery
3. Emergency Operations Coordination
4. Emergency Public Information and Warning
5. Fatality Management
6. Information Sharing
7. Mass Care
8. Medical Countermeasure Dispensing and Administration
9. Medical Materiel Management and Distribution
10. Medical Surge
11. Nonpharmaceutical Interventions
12. Public Health Laboratory Testing
13. Public Health Surveillance and Epidemiologic Investigation
14. Responder Safety and Health
15. Volunteer Management



# IHR Core Capacities Addressed by CDC Capabilities

1. National legislation, policy and financing
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- 10.3 Hazards: Chemical Emergencies
- 10.4 Hazards: Radiologic Emergencies

- Red: Partially addressed
- Red underlined: Fully addressed

*The PHEP program helps the USAPI advance the implementation of the International Health Regulations (2005)*

# Health Security Implementation: USAPI



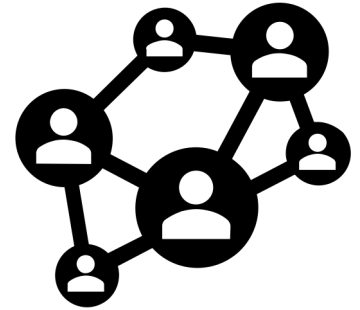
## Challenges

- Limited human resources
- High risk populations
- Diverse settings (geographic, political, economic)
- Multiple support partners (domestic and int'l) with different agendas/reporting requirements
- Uncertainty of political relationships (FAS)

## Assets

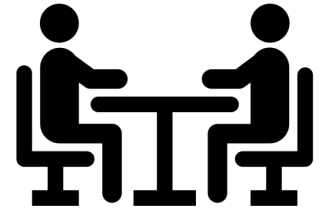
- Committed professionals
- High per-capita success
- Caring communities
- Supportive relationship between jurisdictions
- Regional partner collaboration
- Unique relationship with the USG brings domestic program support

# Coordination to Advance Health Security: Linking Organizations



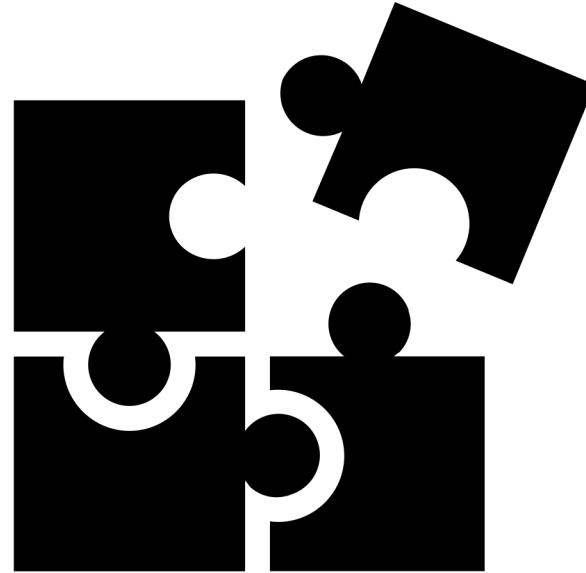
- Pacific Island Health Officers Association (PIHOA)
  - Association of U.S.-affiliated Pacific Island Laboratories (AUL)
  - Pacific Island Vector Management Council (PIVMC)
- Association of State and Territorial Health Officials (ASTHO)
- Pacific Public Health Surveillance Network (PPHSN)
- Northern Pacific Environmental Health Association (NPEHA)

# Coordination to Advance Health Security: Support Partners



- World Health Organization (WHO)
- UNICEF
- The Pacific Community (SPC)
- Fiji National University, University of Guam, University of Hawaii
- Foreign Aid for FAS (DFAT, MFAT, USAID)
- US Government
  - HHS (ASPR, CDC, CMS, FDA, HRSA, SAMHSA)
  - FEMA
  - DOI
  - State
  - DoD

**Activities/Outcomes**





## Supporting Pacific-wide programs

- DDM/SHIP



# Innovation

## 1-Page SitReps

**Outbreak Overview**

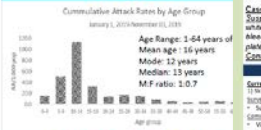
A total of 73 new DILI cases were seen during epi week 44/30.4% increase from Week 43) bringing the total of 1071 cases since January 1, 2019. 22 cases had positive RDT this week. (0.04% decrease from week 43) bringing the total positive RDT of 328 (300 N51 and 28 IgM). 6 cases were admitted, bringing the total of admissions up to 114 in all. Out of the 6 admissions, 4 cases had DHF bringing the total of admissions up to 57. There was no admission with leptospirosis co-infection in week 44 keeping the total of co-infections at 25. Rehydration visits this week was bringing the total up to 823.

There has been three deaths attributed to this dengue outbreak.



**Case Definition**

An acute fever illness of at least 2 days with two or more of the following: headache; pain in or behind the eyes; muscle aches; joint aches; rash; low white blood cell count; or evidence of bleeding.



Contact: Dr. [Name]

Contact:  
 Eden Anzures- Data Officer (eanzures@gmail.com)

## Dengue-3 Outbreak in Republic of the Marshall Islands, June 25–Nov. 10, 2019

Situation Report Date: November 10, 2019

**Outbreak Overview**

Cases: To date there have been 1,058 dengue like illness of which 261 have been lab confirmed. This is outbreak week #20 in Eloye, #14 in Majuro, #4 in Utkh and #3 in Aog. Symptom and age profile of cases is typical for dengue fever. One death and one severe dengue patient evacuated out-of-country to date.

**Organization of Response:** Local team in Eloye and the PNH national ECRAT teams were both activated on July 16, with 24 a week meetings commencing. Presidential Directorate of Health (Emergency) and activities of multi-agency and NCEC National Emergency Operations Center on August 6 with weekly meetings. RMI Dengue Response Plan finalized Aug 6. Bi-weekly conference calls with technical assistance partners also being held.

**Case Definitions (based on PPH-2019)**

**Suspected case:** Acute fever > 2 days with two or white blood cell count; thrombocyt test positive; use AbbotmDx (serum engagement > 2 cm; fluid normal/platelets)

**Confirmed case:** Suspected case with lab confirm

**Serogrouping Data**

1) New serogroup in Eloye and Majuro; & present spread to Utkh

2) Serogrouping system with daily updates to allow for Eloye serogrouping engagement & better control

3) Vigorous community engagement, engaging with help from awareness by other health units, radio system also available

4) Vector Control: 30,000 hours completed, 2,000 schools

5) Health Education: 30,000 hours completed, 10,000 calls

6) Case management: 100 cases in Majuro and 100 cases in Utkh

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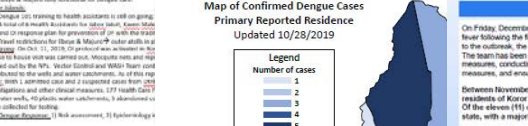
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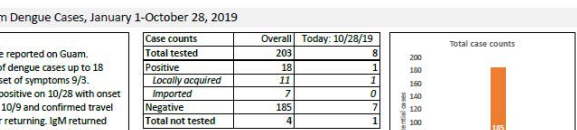
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Contact: [Name]

Source: Epidemiology and Laboratory Capacity Program and Office of Epidemiology and Control by Department of Health, CTEC Applied Epidemiology Review. For more information



**Summary:**

As of October 28, 2019, there are 11 confirmed cases of locally acquired dengue reported on Guam. Including 7 imported cases, of dengue from off-island, this brings the total number of dengue cases up to 18 since January 1, 2019. The first locally acquired case was identified on 9/11 with onset of symptoms 9/3.

Since last week, 2 new cases of dengue were reported. 1 new case resulted PCR positive on 10/28 with onset 10/21 and confirmed no travel history. 1 new case resulted IgM positive with onset 10/9 and confirmed travel history to PI. The case traveled to PI 10/4-10/12 and resolved symptoms 10/15 after returning. IgM returned positive on 10/24, no PCR testing was done. A previous case categorized as locally acquired by the JIC was reached by the EpiSurveillance team and is classified as an due to extended travel to PI (9/12-9/18) with symptom onset 9/1. The median age of suspect cases is 16 and 51% are male. Ca As expected, larger villages have the largest number of suspect such as SDA, GMHA, and AMC lead the reporting sources in po

**Outbreak Overview and Summary**

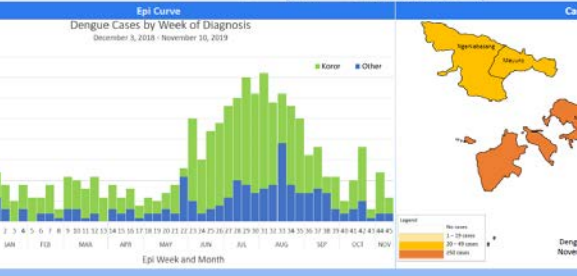
On Friday, December 7, 2018, the Palau Ministry of Health alerted the public of an outbreak of dengue fever following the first ever laboratory confirmation of two cases with dengue serotype-3. In response to the outbreak, the Ministry of Health activated its emergency response team on December 7, 2018. The team has been tasked with raising community awareness of the outbreak and dengue prevention measures, conducting disease surveillance and reporting, strengthening environmental control measures, and ensuring adequate resources are available to combat the outbreak.

Between November 4 - 10, 2018, there were seven (7) new cases reported, including four (4) residents of Koror state residing in Ngberkeberang (2) and Ngberkeberang (2). Of the eleven (11) cases of dengue reported so far in November six (6) were residents of Koror state, with a majority residing in Ngberkeberang (3) and Ngberkeberang (2) hamlets.

The Communicable Disease Unit and the DEH Vector Control Program continue to investigate all reported cases of dengue fever and implement vector control measures.

The Palau Ministry of Health promotes the dengue 3S messages:

- Search and eliminate mosquito breeding sites.
- Self-protect by wearing insect repellent and ensuring a mosquito-free environment.
- Seek early consultation if you show severe signs or symptoms of dengue.





## Pilot-testing

- Pacific-tailored Risk Communications Training Pilot
- WHO, SPC, CDC, PIHOA





## Making Linkages

- USAPI Epi-Rounds



## Developing USAPI Capacity/Expertise

- Guam Arboviral  
Testing

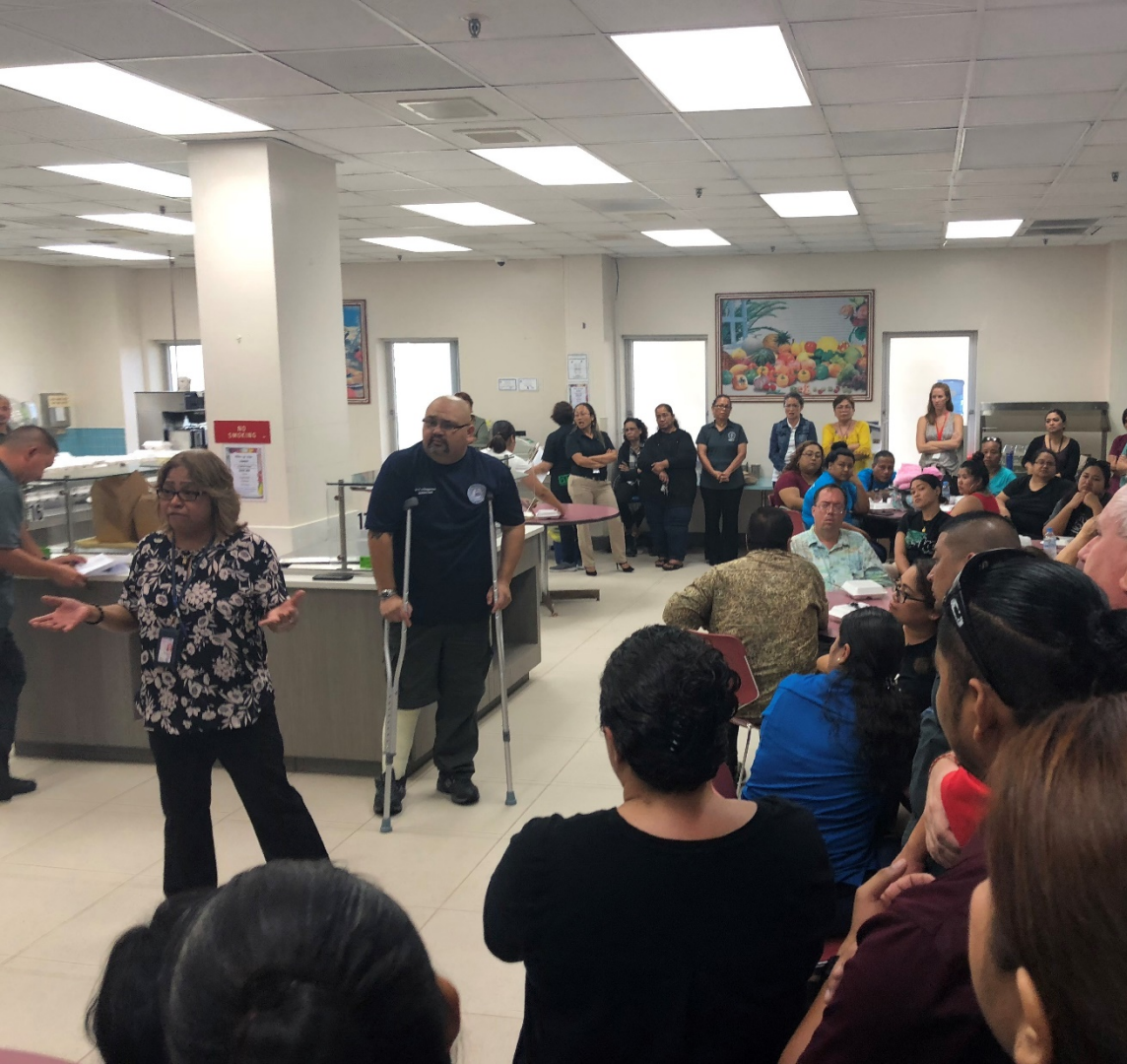
Microbiologist Alan Mallari demonstrates how blood samples are processed when testing for the dengue fever virus within the Polymerase Chain Reaction Testing Laboratory at the Department of Public Health and Social Services in Mangilao on Friday, Oct. 4, 2019. (Photo: Rick Cruz/PDN)



## Advancing regional strategies

- Guam Mosquito Lab

**MONITORING:** Claire Baradi, supervisor and program manager for the mosquito surveillance and control program at the Division of Environmental Health of the Department of Public Health and Social Services, opens an incubator that is used to allow mosquito larvae to hatch and grow to adulthood to determine the species of mosquito Sunday at the Guam Environmental Public Health Laboratory in Dededo. David Castro/The Guam Daily Post



Expertise in responding to real emergencies

- CNMI response to Typhoon Yutu

# Outcomes/Activities of Health Security Work

## Training

- WHO/SPC/CDC/PIHOA Pacific Tailored Risk Communications Training Pilot (USAPI)
- Community Assessment for Public Health Emergency Response (CASPER)
- Pacific Field Epidemiology Training DDM/SHIP

## Regional Programs

- Vector Management Strategy for the USAPI
- AUL Regional Lab Initiative
- USAPI Epidemiology Rounds

## Systems Enhancement

- Tools development: Outbreak SitRep and Outbreak AAR Manual
- Routine communicable disease reports
- Community health surveys and NCD Monitoring

## Response

- Disaster: Typhoons (Yutu/Soudelor/Maysak)
- Outbreaks: Hep A, mumps, dengue, rotavirus, Zika, chikungunya, pertussis, measles, influenza

# Evidence: Health Security Enhancement in FAS

- FSM and Palau: only Pacific countries routinely submitting annual IHR self-assessments to WHO
- FSM: First Pacific country to volunteer and undergo a Joint External Evaluation (JEE)
- Palau and RMI: Next two Pacific Island countries to complete JEE
- FSM JEE results positive, especially in emergency preparedness and response

# FSM JEE: Highlighted Strengths

- A well-established emergency preparedness and response system with relevant emergency operation centers. These systems are routinely tested through exercises, with after action reviews feeding into revisions of the system.
- Multidisciplinary EpiNet team structure for the detection, investigation, and response with linkages between the states and national levels.
- Integrated IBS and EBS from multiple sources to produce weekly surveillance bulletins disseminated within the Federated States of Micronesia and internationally.
- Available at: <https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-2018.34-eng.pdf>



# USAPI Success

- Commitment to public health preparedness and health security
- Outbreak detection and response: EpiNet teams/SitReps
- Disaster response: proven expertise
- Laboratory network: quality improvement/shipping mechanisms
- Jurisdictional collaboration to support preparedness and response
- Piloted and refined the Field Epidemiology Training Program for the Pacific: DDM/SHIP
- Guam Public Health Lab and Environmental Health Lab capabilities leveraged as regional resources



# Successes: Common Themes

- Tailored solutions to unique challenges: willingness to innovate
- Persist, but be willing to adapt: practice continual refinement
- Collaboration between jurisdictions: speaking with one voice can attract additional resources
- Cultivate local expertise, and leverage for regional benefit
- People change, but systems remain
- Encourage support partners to harmonize activities to maximize impact
- Unique circumstances of the USAPI: exploit the benefits and minimize the disadvantages

# Conclusions

- USAPI is an incubator for Pacific public health innovation
- Once challenging tasks are now routine: outbreak detection and reporting (SitReps), shipping of laboratory specimens, NCD monitoring
- Demonstrated real capacity through response to wide range of actual public health emergencies
- USAPI successes help to advance the entire Pacific toward health security
- There will always be exciting new challenges and many ways to improve

# Suggested Action Items

1. Support existing “foundational” activities/programs: e.g., laboratory shipping mechanism, outbreak detection and reporting, field epidemiology training, community health surveys and NCD monitoring
2. Explore innovative approaches to address unique island circumstances
3. Engage all support partners, and encourage coordination
4. Work together to maximize results, especially when resources are scarce
5. Take pride in being a leader in Pacific health

# Thank you



For specific questions about this presentation, contact W. Thane Hancock:  
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For more information, contact CDC  
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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

