



# **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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- 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

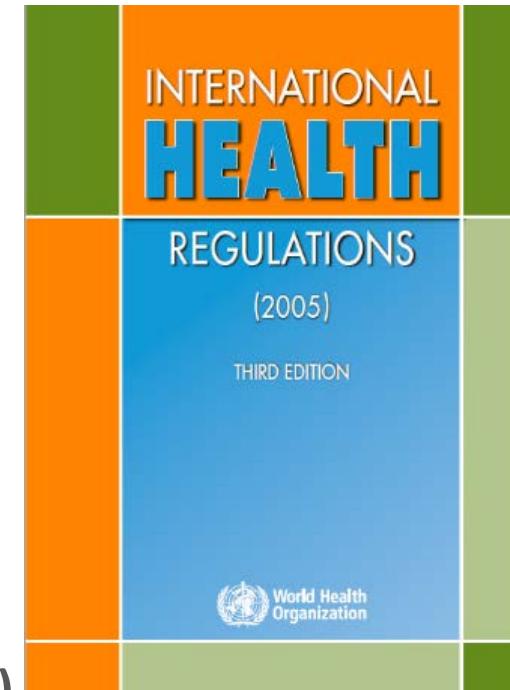
- Review Health Security, including WHO's International Health Regulations (IHR) and CDC's Public Health Emergency Preparedness (PHEP) Cooperative Agreement
- Discuss challenges and assets for the implementation of health security in the USAPI
- Discuss the partnerships for building local and regional 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**)

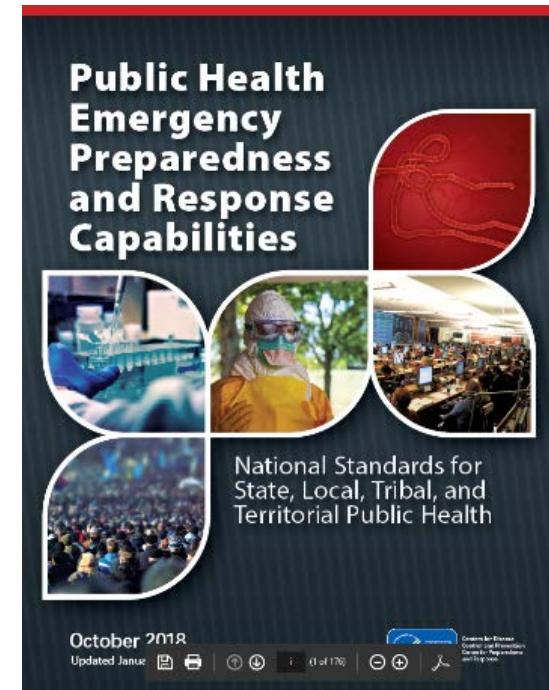


# CDC's Public Health Emergency Preparedness (PHEP) Cooperative Agreement

- 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

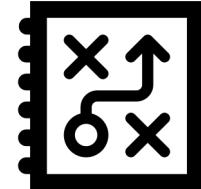
# IHR Core Capacities Addressed by CDC Capabilities

- 1. National legislation, policy and financing**
- 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**

- **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

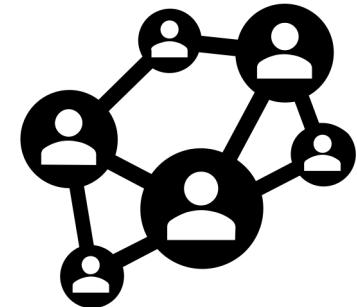
- Limited human resources
- High risk populations
- Diverse settings (geographic, political, economic)
- Multiple support partners (domestic and int'l) with different agendas/reporting requirements
- Uncertainty of political relationships (FAS)

## Assets

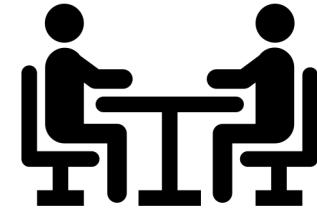
- Committed professionals
- High per-capita success
- Caring communities
- Supportive relationship between jurisdictions
- Regional partner collaboration
- Unique relationship with the USG brings domestic program support

# 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)

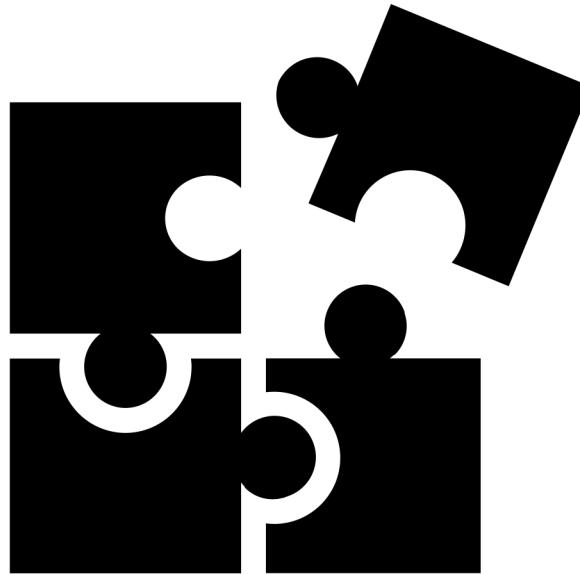


# Coordination to Advance Health Security: Support Partners



- 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



## Outbreak Overview

A total of 79 new DLU cases were seen during epi week 44 (30.4% increase from Week 43) bringing the total of 171 cases since January 1, 2019. 22 cases had positive RDT this week, 10 cases had positive RDT from week 43 but were still positive RDT of 328, 900 N51 and 78 (M1). 6 cases were admitted, bringing the total of admissions up to 114 in all. Out of the 6 admissions, 4 cases had DHT bringing the total of admissions to 11. The total of hospitalized with dengue 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

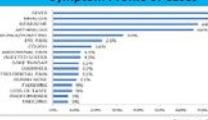
An acute fever illness of at least 2 days with two or more of the following: headache; pain in or behind the eyes; muscle aches; joint aches; rash; low white blood cell count; or evidence of bleeding.

## Demographics

Cumulative Attack Rates by Age Group  
January 1, 2019-November 11, 2019



## Symptom Profile of Cases



Contact: Dr. [redacted]



## Epi Curve

All DLU Screened cases by Week of Encountered, January 1, 2018-November 04, 2019  
■ DLU Positive ■ DLU Negative ■ No DLU



## 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 1,028 dengue cases of which 384 have been lab confirmed. This is outbreak week #26 in Epi week 44. Majuro 446, Utrik 439 & Aor 145. Symptom profile of cases is typical for dengue fever. One death and one severe dengue patient admitted to hospital to date.

Organization of Response: Epidemiology in Clague and the RMI national Epi team were both activated on July 15, with 3x 2 week meetings currently. Presidential Decision of Health Emergency and activation of multi-ministry and NGOs. 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.

## Summary of Cases

## Cases (Suspect & Confirmed) by Week of Onset- Ebeye, Majuro & Utrik



Guam Dengue Cases, January 1-October 28, 2019

## 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 Epi/Surveillance team and is classified as an un

extended to extended travel to PI 9/12-9/18 with symptom onset 5.

The median age of suspect cases is 16 and 53% are male. Ca

Such as SDA, GMHA, and AMC lead the reporting sources in po

## Map of Confirmed Dengue Cases

### Primary Reported Residence

Updated 10/28/2019

#### Legend

Number of cases

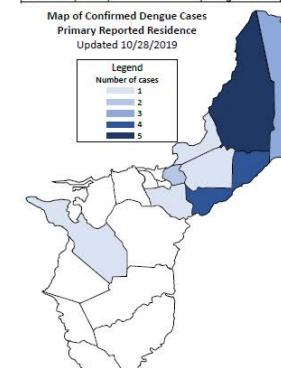
1

2

3

4

5



Source: Epidemiology and Laboratory Capacity Program and Office of Epidemiology and Research  
Compiled by Stephanie Kam-Ailey, CSTE Applied Epidemiology Fellow - For more information, contact: Edan Aunares - Data Officer (eaunares@gmail.com)

Contact: Dr. [redacted]

# Innovation

## ■ 1-Page SitReps



## Dengue 3 Outbreak, Palau, December 2018 – November 2019

Epi Week 45: November 4 - 10, 2019



## Outbreak Overview and Summary

## Case Summary

## Demographics

On Friday, December 7, 2018, the Palau Ministry of Health alerted the public of an outbreak of dengue fever from Koror State. The first reported case was a 16-year-old female from Ngarketeng. Three more cases were reported in the following days. The team has been tasked with raising community awareness of the outbreak and dengue prevention measures, including the use of mosquito repellent, removing mosquito breeding sites, and ensuring adequate resources are available to combat the outbreak.

Between November 4 - 10, 2019, there were seven (7) new cases reported, including four (4) residents of Koror state residing in Ngarketeng (2) and Hnepchen (2).

Of the seven new cases, five (5) were from Koror State, and two (2) were from Ngarketeng (1) and Hnepchen (1) states, a majority residing in Ngarketeng (3) and Hnepchen (2) districts.

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 25 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.

• STOP DENGUE

• Dengue Cases by Gender and Age Group



• Ethnicity Count %



• TOTAL 492

• Cases by Hamlet



## Epi Curve

Dengue Cases by Week of Diagnosis

December 3, 2018 - November 10, 2019

■ Koror ■ Other



Contact: Timong Udui timong.udui@palauhealth.org (680) 488-4772/4773

The next report for epi week 46 will be released on Tuesday, November 19, 2019.



## Pilot-testing

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



## Making Linkages

- USAPI Epi-Rounds



## Developing USAPI Capacity/Expertise

- Guam Arboviral Testing

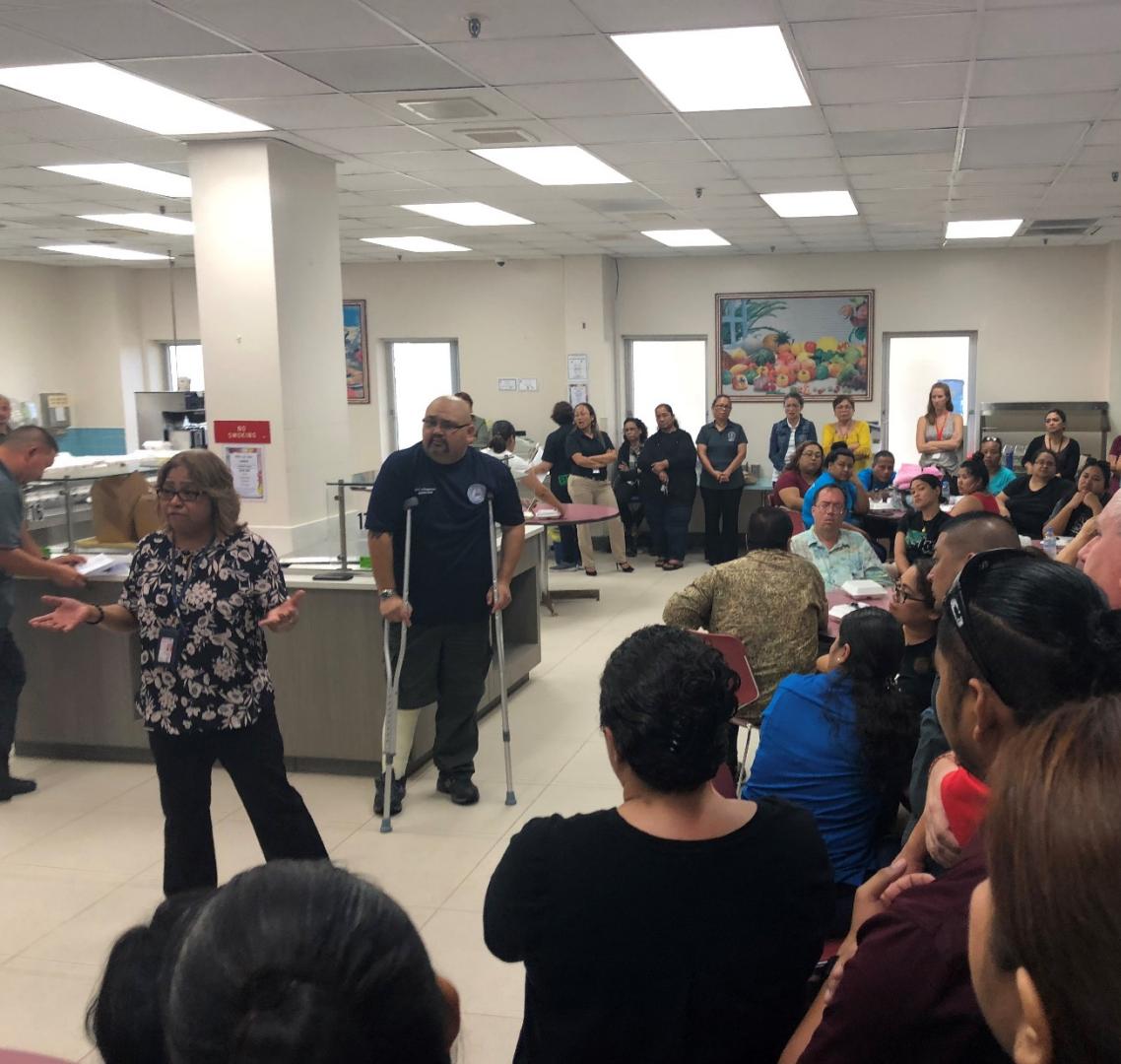
Microbiologist Alan Mallari demonstrates how blood samples are processed when testing for the dengue fever virus within the Polymerase Chain Reaction Testing Laboratory at the Department of Public Health and Social Services in Mangilao on Friday, Oct. 4, 2019. (Photo: Rick Cruz/PDN)



**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

Advancing  
regional  
strategies

- Guam  
Mosquito Lab



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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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.