### Continuing Education for Water Operators



Mariana Islands Water Operator Association

May 7, 2015 Pacific Islands Club, Saipan

#### Today's Agenda

- > About Continuing Education
- > Current Events:
- > Main Events:
  - Maui I & IV Well Shafts
  - Mapping Nitrates in Groundwater
  - Chuuk Typhoon Damage Assessment
  - Wastewater Overflows in Guam and Pacific
     Territories

Cryptosporidiosis

> Association Business

#### **Current Events**

CDC Reports MMWR Surveillance Summaries May 1, 2014 Cryptosporidiosis Surveillance Giardiasis Surveillance U.S. 2011-2012

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#### Gastrointestinal

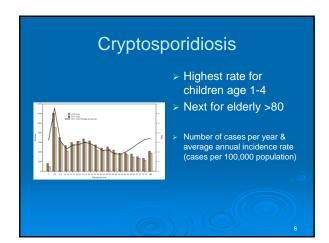
- illness
- Extremely chlorine resistant
- > Protozoa Crypotosporidium
- Infectious dose <10</p>

# > 2011 > 2012 > 9,312 cases > 8,008 cases > 5.8% from outbreaks > 5.3% from outbreaks > 3.0 / 100,000 > 2.6 / 100,000

## Cryptosporidiosis Incidence rate peaked in 2007 – but still high Definition of confirmed cases has changed over time

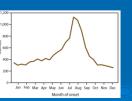






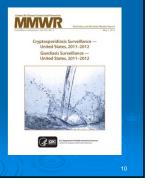
Cryptosporidiosis
 Most cases occur in summer months.
 Increased use of recreational water (pools) in summer
 Number of cryptosporidiosis

 Number of cryptosporidiosis case reports by date of symptom onset

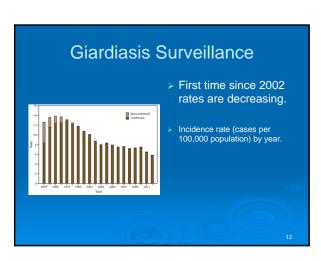


#### Giardiasis Surveillance

- Gastrointestinal illness
- Moderately chlorine resistant
- Protozoa Giardia intestinalis
- Infectious dose <10</p>
- The most commonly reported intestinal parasitic infection in US.



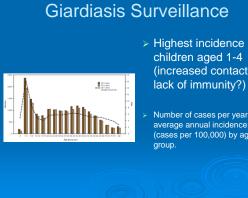




#### **Giardiasis Surveillance**

- > Highest in northern states (better reporting?)
- > Six states did not report.
- Incidence rate (cases per 100,000 population) by reporting jurisdiction.





#### > Highest incidence in children aged 1-4 (increased contact or

Number of cases per year and average annual incidence rate (cases per 100,000) by age



#### Model Aquatic Health Code

The Model Aquatic Health Code



http://www.cdc.gov/healthywat er/swimming/pools/mahc/index .html

## Model Aquatic Health Code

> Link to Video about MAHC

### **Current Events**

**RTCR Update** 

#### **Revised Total Coliform Rule**

- Effective April 2016
- > Schedule:
  - Draft regulations to be published June or July 2015
  - Finalized Aug or Sep 2015
  - Guidance in
     November 2015 CEU
     class

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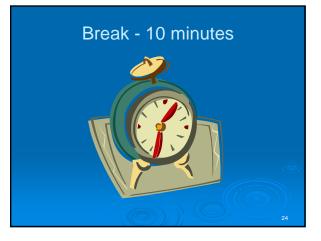
#### **Revised Total Coliform Rule**

- TC samples collected monthly according to your sampling plan (no change)
- > TC + samples must be tested for *E. Coli*
- > If routine TC +  $\rightarrow$  3 repeat samples req'd
- > If E. Coli MCL or TC contamination  $\rightarrow$
- Assessment (Level 1 or Level 2)
- Find and fix problems.











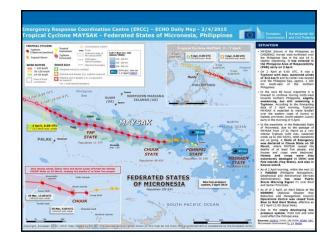
#### Main Event

Typhoon Maysak Damage Assessment

#### Typhoon Maysak

≻ Chuuk → Sunday March 29
 ≻ Ulithi Atoll Yap → Wednesday April 1, 2015





#### Deployment

- > E-mail on Sunday April 5 Available?
- > Replied on Monday April 6 Yes
- > Travel arrangements on Tuesday April 7
- > Left on Wed morning April 8 4:00 am
- > Arrived on Weno at 11:30 am

#### **PDA** Team

#### FSM & Marshall Islands

- FEMA : Federal Emergency Management Agency
- USAID/OFDA: Office of Foreign Disaster Assistance
- Operate under the "Blueprint"
- > PDA = Preliminary Disaster Assessment
  - Threshold of 100 homes destroyed, or
  - \$1,000,000 damage

#### PDA Team

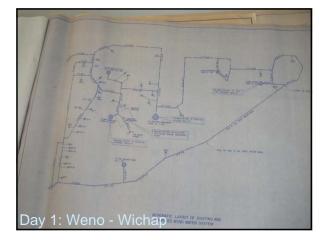
- > If threshold reached
  - Local government requests US President to declare disaster (PDD)
  - FEMA assistance kicks in
- Direct assistance provided by
  - USAID (emergency supplies)
     NGO's : local one called IOM
  - USDA (for food)
  - FEMA (housing/infrastructure)
  - SBA (business loans)

#### Day 1: Wed April 8

- ▹ Weno (Main Island)
- Drive to Wichap around southern tip





















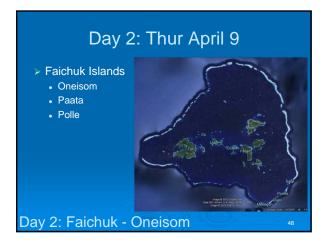








































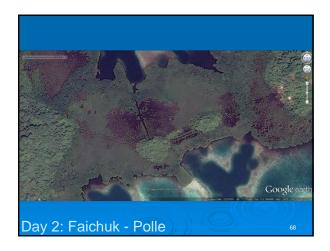




















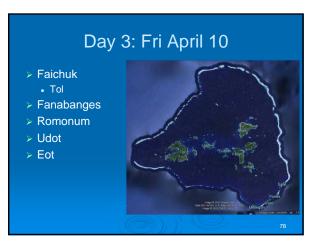
































































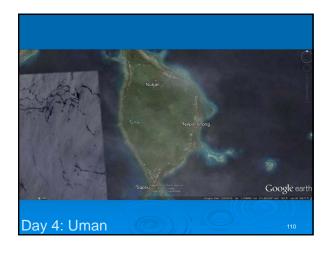


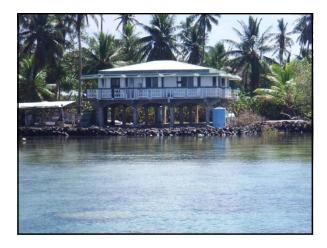


















05/07/2015

































































#### Day 6: Mon April 13

> Outbriefing: Disaster Operations Center

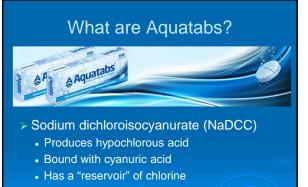
- LDS church provided initial response
- International Federation of Red Cross and Red Crescent
- IOM
- Salvation Army
- FSM Agencies: Health, EPA, CPUC, Ag, Trans, Telecom

#### Summary of Observations

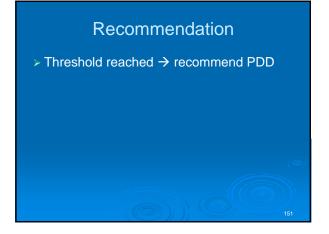
- > Most roof catchments contaminated
- > Lost rain gutters and roofs (no new rain)
- > Other sources available
- > Water delivery by truck on Weno
- > Wastewater disposal not affected
- > Boat transportation available

#### Needs

- > Greatest need FOOD
- Jerry cans & aquatabs
  - Hygiene education
  - Hand soap
- > Roof and guttering materials
- On Piis Paneu investigate repair of pump



> 62% chlorine (like calcium hypochlorite)



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#### **Contact Information**

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