

---

# RLW & MUMPS UPDATE

## HAWAII ISLAND

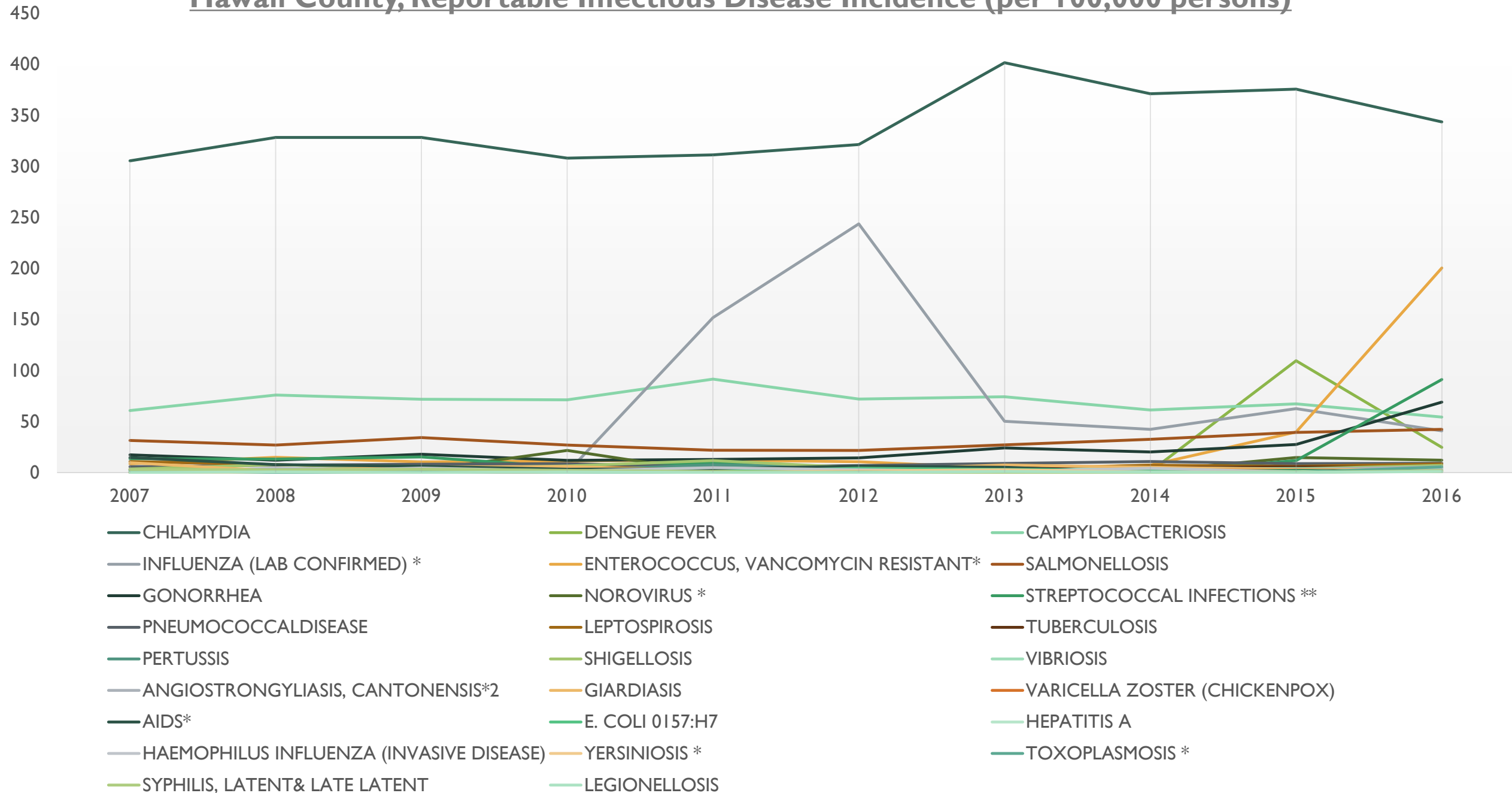
### 2/6/2018

JASON DELA CRUZ

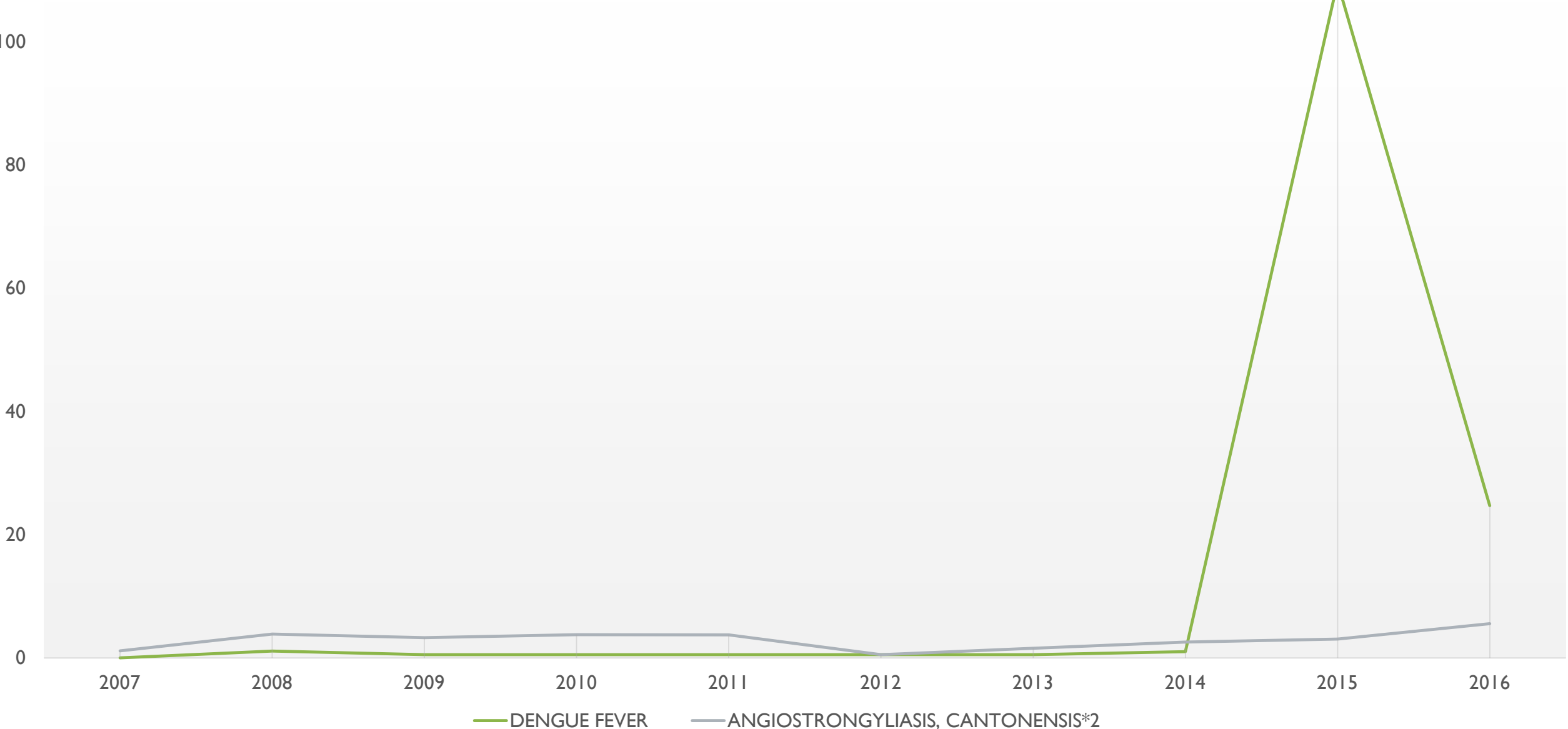
PHP HEALTH EDUCATOR

HAWAII STATE DEPARTMENT OF HEALTH

## Hawaii County, Reportable Infectious Disease Incidence (per 100,000 persons)



Hawaii County, Reportable Infectious Disease Incidence (per 100,000 persons)



# DISEASE REPORTING

- Disease Reporting to DOH
  - East HI 933-0912
  - West HI 322-4877
- Use the *Communicable Disease Report* form:
  - <https://health.hawaii.gov/docd/files/2017/02/Communicable-Disease-Report-Form-Fillable.pdf>

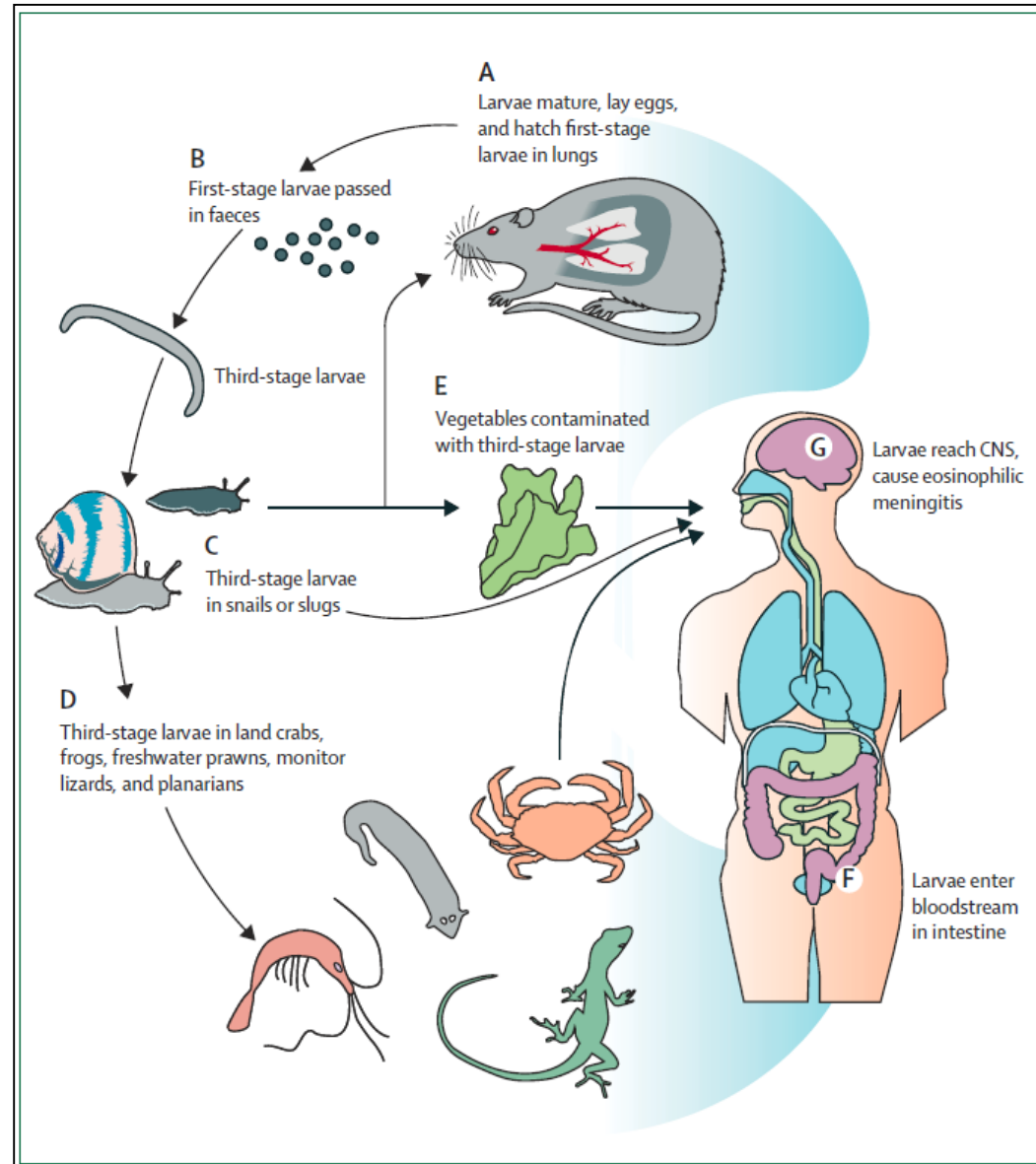


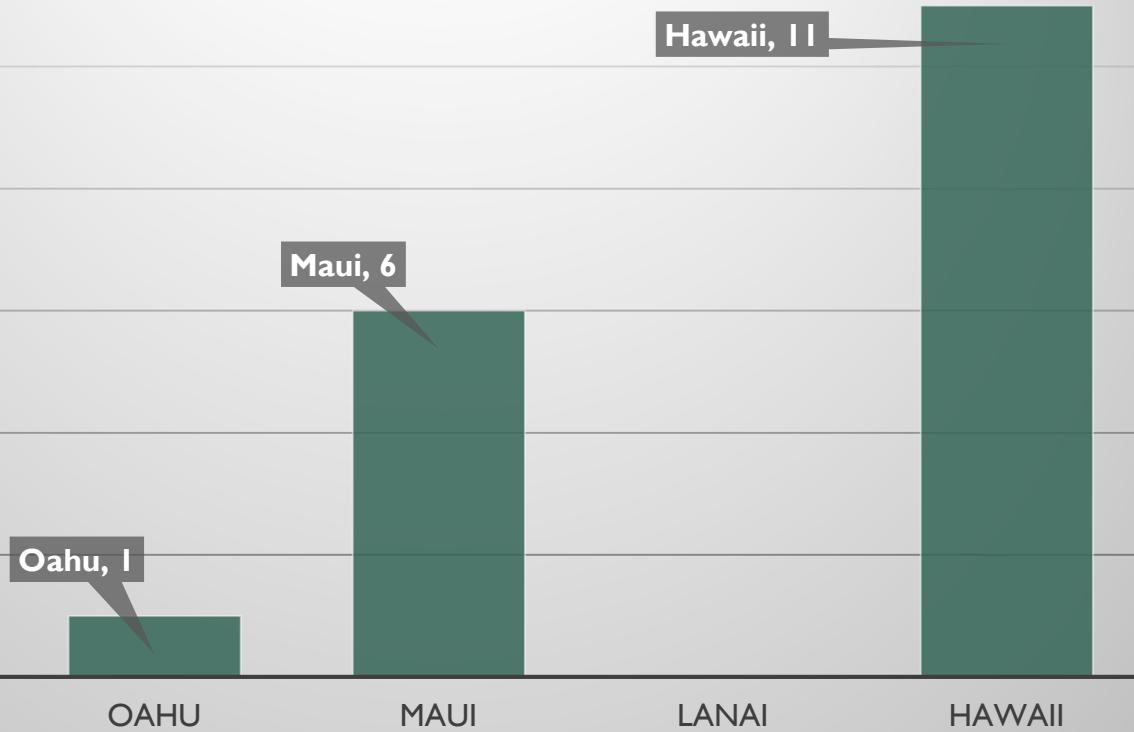
Table 1. Number of Rat Lungworm Disease Cases Reported in the Hawaiian Islands, 1959-2016<sup>a</sup>

Island	1959–1965	1966–2000	2001–2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Kauai	2													1	1	4
Oahu	15		11						1							27
Maui	1		3				1		1				1			7
Lanai			1													1
Hawaii	1		4	5	1	2	7	6	7	7	1	3	5	6	10	65
Total	19	0	19	5	1	2	8	6	9	7	1	3	6	7	11	104

COWIE, R. (2017). ANGIOSTRONGYLUS CANTONENSIS: AGENT OF A SOMETIMES FATAL GLOBALLY EMERGING INFECTIOUS DISEASE (RAT LUNGWORM DISEASE). *ACS CHEM NEUROSCI*. 8(10): 2102-2104.



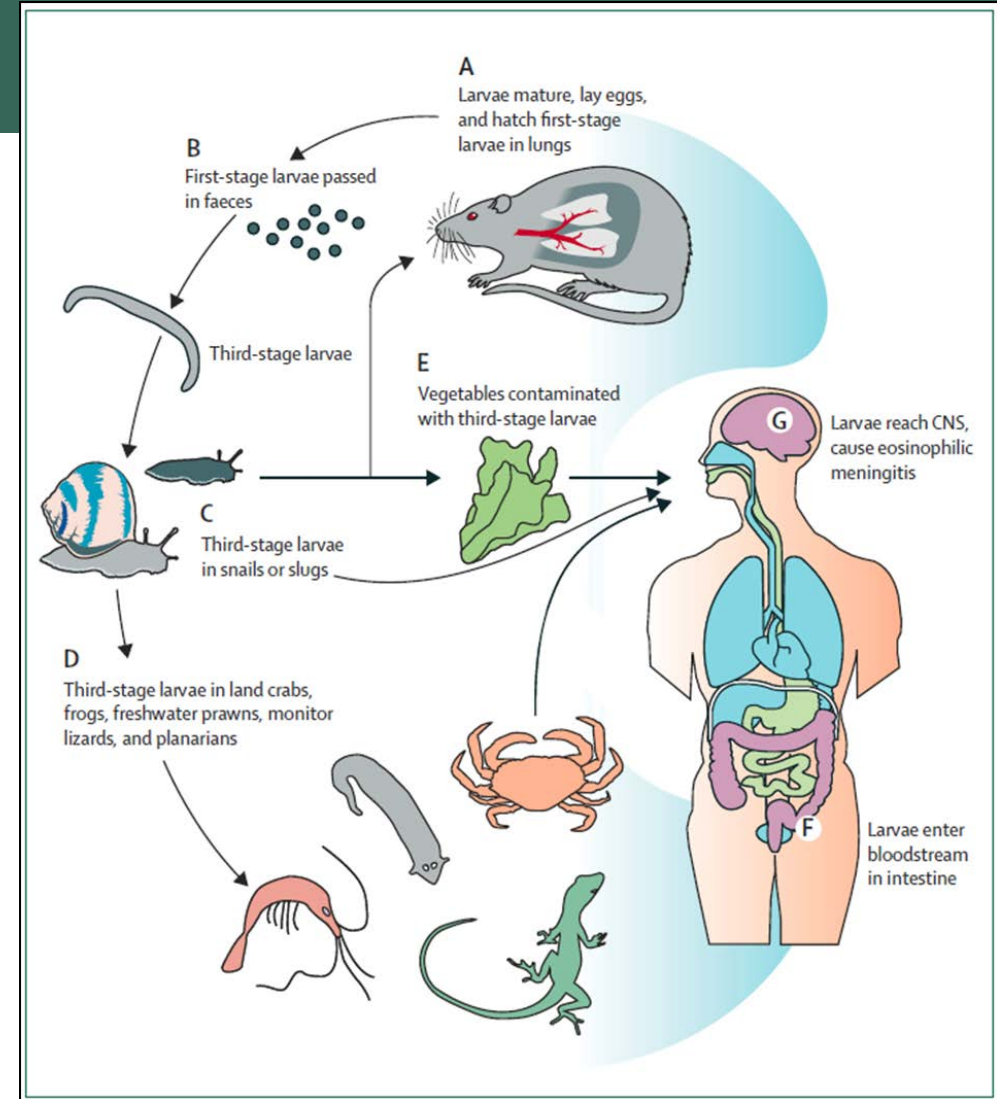
## 2017 RLW Totals (lab confirmed)



[http://kanakakava.com/?page\\_id=737](http://kanakakava.com/?page_id=737)

# RLW: REDUCING THE RISK

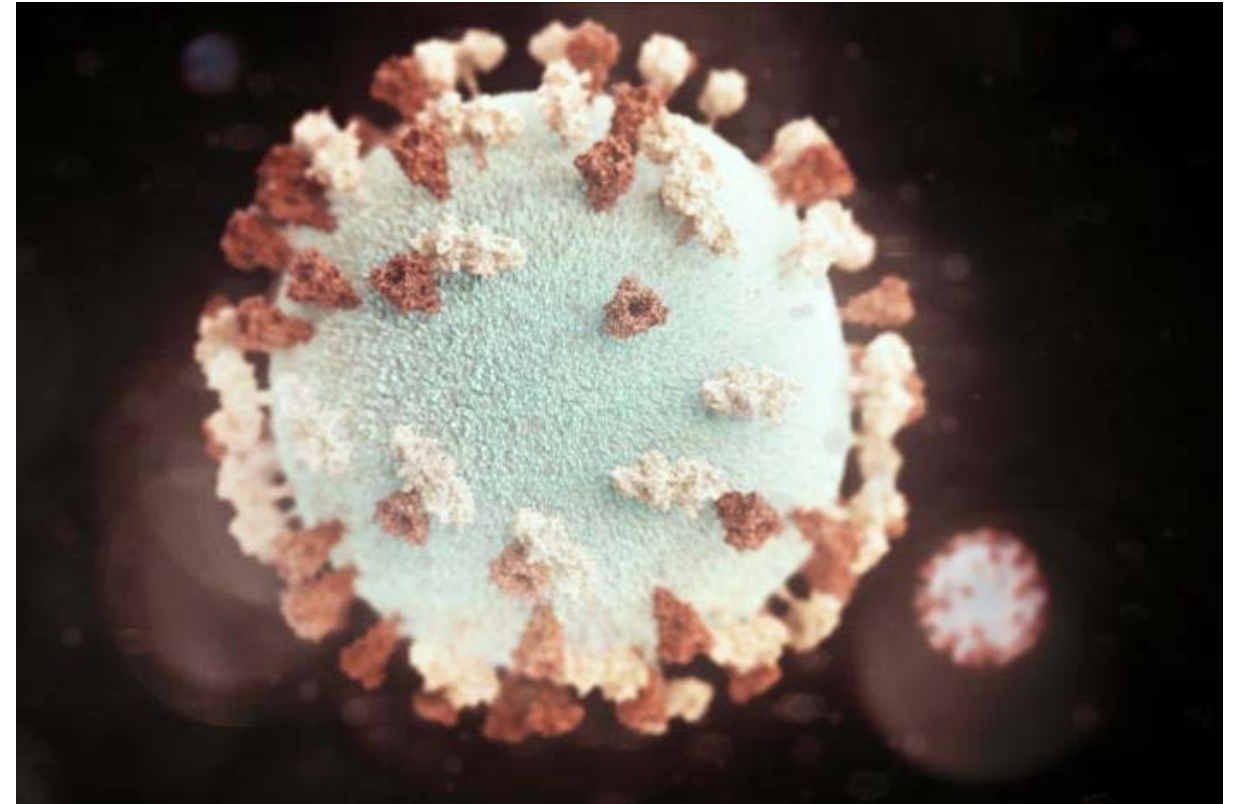
- Breaking the RLW cycle
  - Rat control
  - Snail/Slug control
- Protecting food and water sources
  - Effective washing
  - Cooking
  - Catchment maintenance





# MUMPS VIRUS

- Viral illness caused by a paramyxovirus of the Genus *Rubulavirus*
- Mild disease for children but complications do occur

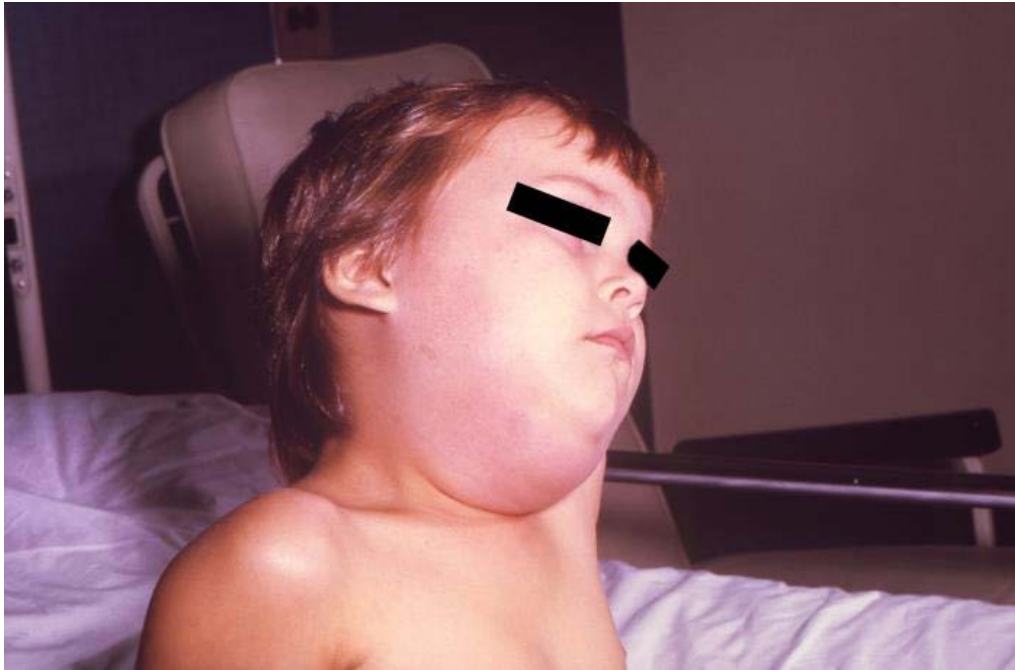


3D graphical representation of a mumps virus particle  
CDC Public Health Image Library, Maiuri, A. M. (2016)



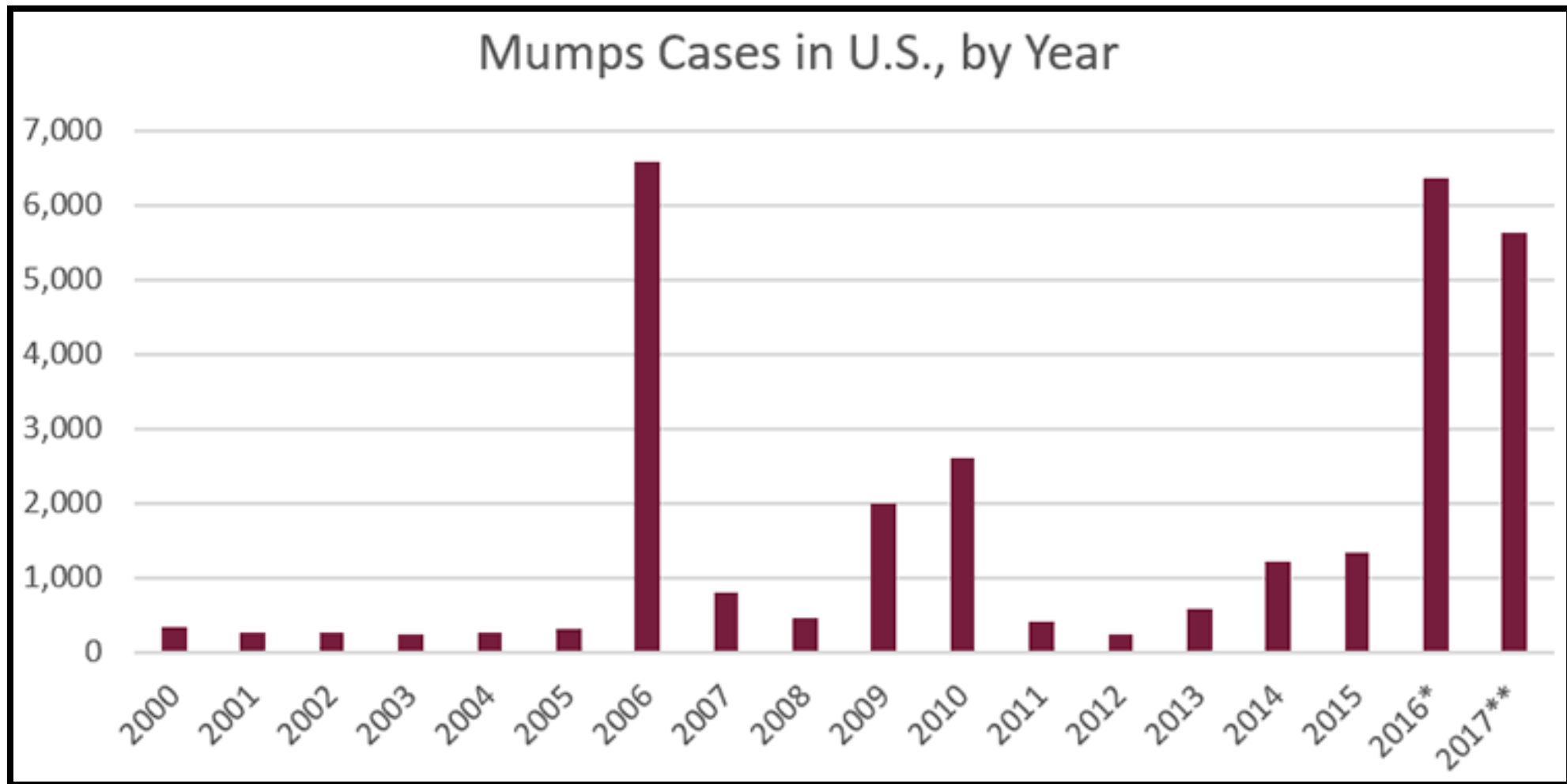
# COMPLICATIONS

- For those symptomatic, most recover within a couple of weeks...



- BUT, could lead to
  - Meningitis
  - Deafness
  - Encephalitis
  - Orchitis
  - Oophoritis/Mastitis

*Mumps infection, enlarged salivary gland*  
CDC Public Health Image Library (1976)



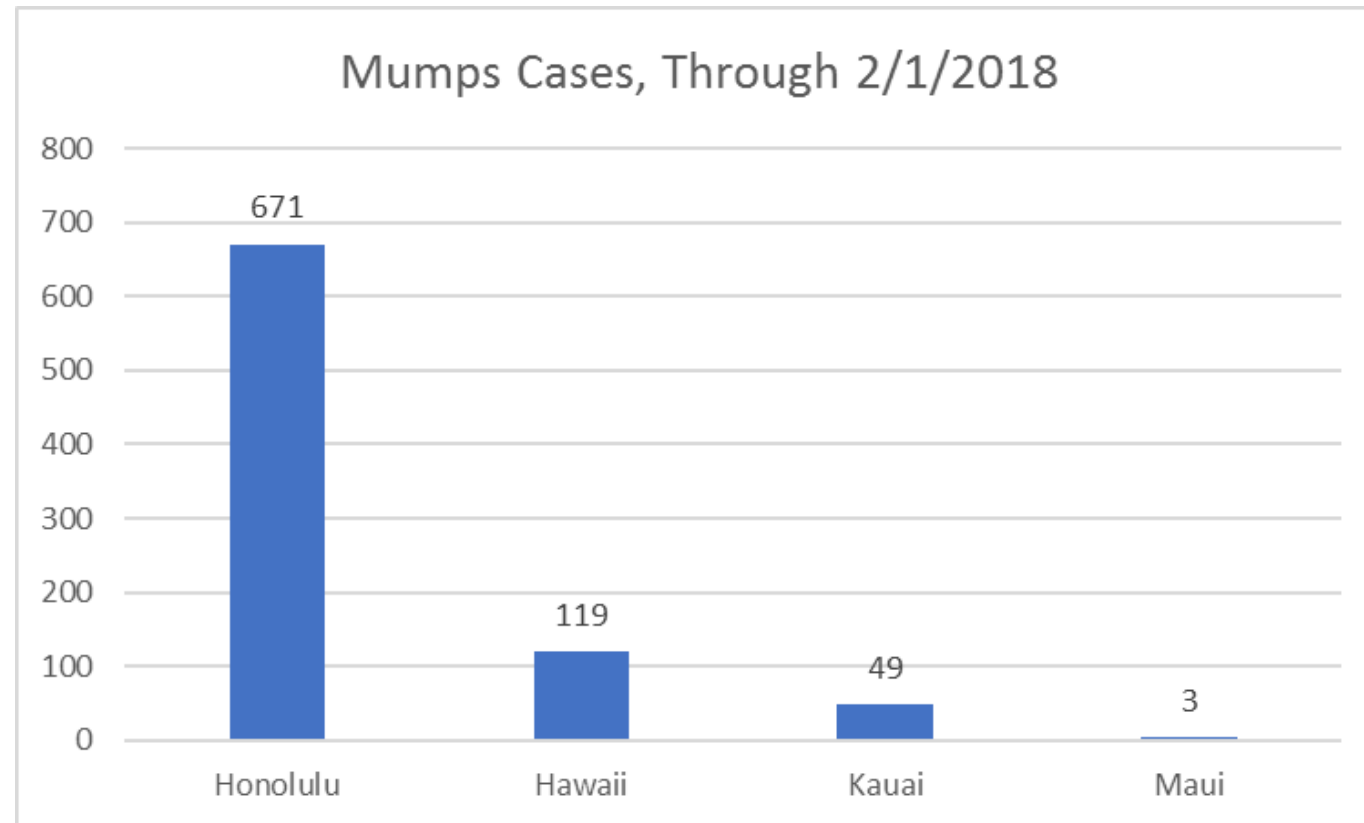
Case count is preliminary and subject to change.

\*\*Cases as of December 30, 2017. Case count is preliminary and subject to change.

Source: Morbidity and Mortality Weekly Report (MMWR), Notifiable Diseases and Mortality Tables




\*\*Preliminary data reported to CDC. Mumps outbreaks are not reportable.



IMPACT IN  
HAWAII

# PREVENTION

- Vaccination (see DOH for [vaccine locator website](#))
- Patients suspected or diagnosed with mumps - Self-isolate and avoid going out and exposing others for **9 FULL days** after onset of *parotitis*
- People who have been exposed to mumps and are not vaccinated should not attend school, work or travel from day 12 through day 25 after exposure.
- See: <https://health.hawaii.gov/docd/files/2017/05/Mumps-Provider-Info.pdf>




**FEVER and SWOLLEN JAW?  
CONSIDER MUMPS**


**Mumps is highly contagious. Please protect yourself and others!**

**Please notify medical staff immediately if you have these symptoms:**

- Swollen glands in front of the ears or jaw
- Fever
- Headache
- Muscle aches
- Tiredness
- Loss of appetite (not wanting to eat)



<http://www.cdc.gov/mumps/infographics/mumps-mmr.html>



*Spread Aloha, not germs!*

Adapted with permission from the Arkansas Department of Health

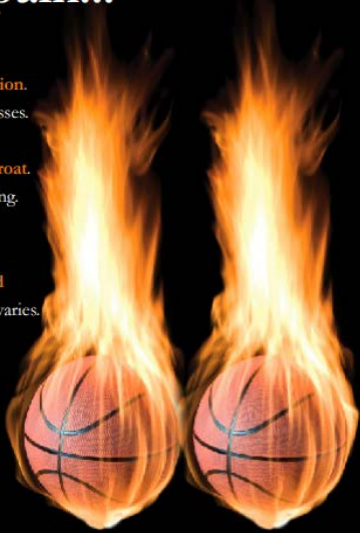
**The swelling's not so bad.  
It's the severe testicular pain...**

Mumps means **9 days in isolation**.  
No parties. No friends. No classes.


Intense **pain in cheeks and throat**.  
Difficulty chewing or swallowing.  
**Weakness. Fever.**

In some cases, **severe pain and swelling** of the testicles and ovaries.  
Mumps can cause sterility, meningitis, and deafness.

The **MMR vaccine** provides the **best protection** against mumps.



**Protect yourself against mumps.  
Get VACCINATED.**



For more information, call 2-1-1 or visit [health.hawaii.gov](http://health.hawaii.gov).

Adapted with permission from the Province of Nova Scotia Department of Health and Wellness

# MMR VACCINATION RECOMMENDATIONS

## ■ ROUTINE MMR VACCINATION RECOMMENDATIONS:

- All children should receive two doses of MMR vaccine. The first dose is typically given at age 12–15 months and the second dose routinely at age 4–6 years.
- All adults born in 1957 or later should receive at least one dose of MMR vaccine (persons at high risk for exposure to mumps, including college students, health care workers, and international travelers, should receive two doses).


During the mumps outbreak in Hawaii, in addition to routine vaccination recommendations, **adolescents** (aged 10-19 years) **and adults** (born in 1957 or later) **should receive an additional MMR vaccine dose now.**

- The outbreak dose of MMR vaccine is recommended, *regardless of*:
  - Previous age-appropriate vaccination; or
  - Documentation of a blood test showing immunity to mumps
- See: <http://www.nejm.org/doi/full/10.1056/NEJMoa1703309>

Cardemil, C.V., Dahl, R. M., James, L., Wannemuehler, K., Gary, H. E., Shah, M., ... & Quinlisk, P. (2017). Effectiveness of a third dose of MMR vaccine for mumps outbreak control. *New England Journal of Medicine*, 377(10), 947-956.



See <https://health.hawaii.gov> for more info, links, FAQs, and information for clinicians



## Suspect MUMPS

### CLINICAL SIGNS & SYMPTOMS

- Parotitis: pain, tenderness, and swelling in one or both parotid salivary glands
- Non-specific prodromal symptoms (low grade fever, myalgia, anorexia, malaise, headache)




Photo courtesy of AAP Red Book

### TRANSMISSION & PERIOD OF COMMUNICABILITY

- Direct contact with respiratory secretions or saliva, or through fomites
- Several days before through nine days after parotitis onset

### BEFORE A SUSPECT CASE PRESENTS IN YOUR OFFICE:

- Ensure appropriate documentation of presumptive evidence of immunity (see attached) for all patients and staff

Note: Exposed healthcare workers without evidence of immunity must be excluded from work from day 12 after first unprotected exposure through day 25 after last exposure, **regardless of receipt of MMR vaccine after exposure**

### WHEN A SUSPECT CASE PRESENTS IN YOUR OFFICE:

Step 1: Promptly **ISOLATE** patient to avoid disease transmission

Step 2: While the patient is still in your office, **IMMEDIATELY REPORT** suspected mumps case to DOH

Dahu (Disease Reporting Line)	(808) 586-4586
Mauai District Health Office	(808) 984-8213
Kauai District Health Office	(808) 241-3563
Big Island District Health Office (Hilo)	(808) 933-0912
Big Island District Health Office (Kona)	(808) 322-4877
After hours on Oahu	(808) 566-5049
After hours on neighbor islands	(800) 360-2575 (toll free)

Step 3: Collect **LABORATORY SPECIMENS**

- Buccal swab** for PCR testing (ideally within 3 days & not more than 8 days after parotitis onset)
  - See attached illustration and instructions for collection of buccal fluid
  - Place synthetic swab in 2 mL of viral transport medium (Keep cold)
  - Send to State Lab for testing (contact HDOH)
- Urine** for PCR testing (may not be positive until >4 days after symptom onset)
  - Collect in sterile container [minimum volume 50 mL] (Keep cold)
  - Send to State Lab for testing (contact HDOH)

**Note:** People with a history of mumps vaccination may not have detectable IgM antibody, regardless of timing of specimen collection. Absence of mumps IgM in a vaccinated person with clinically compatible mumps does **not** rule out mumps.

Step 4: Identify **POTENTIALLY EXPOSED CONTACTS** for presumptive evidence of immunity to mumps:

- All Staff (physician, nurse, medical assistant, receptionist)
- Patients/parent/siblings/caregivers with close exposure (e.g., within 3 feet) to case in waiting room/office

Step 5: Provide patient with **POSITIVE TEST RESULTS and ISOLATION/EXCLUSION REQUIREMENTS**

- Confirmed cases must be restricted from school, work, travel, public places for 9 days after parotitis onset
- See attached isolation/exclusion requirements for contacts of cases, including exposed healthcare personnel

Centers for Disease Control and Prevention Mumps Website, <https://www.cdc.gov/mumps/index.html>  
Hawaii Administrative Rules Title 11, Chapter 156.  
Manual for the Surveillance of Vaccine-Preventable Diseases, 6<sup>th</sup> Edition, 2013.

05/31/2017

### Parotid Gland and Instructions for Collection of Buccal Fluid

Identify the parotid gland area for 30 seconds prior to swabbing the area around the mouth (photo on right), which is the space near the upper rear molars and the teeth. Swab the area between the cheek and gum by using a synthetic swab near the upper molar to the lower molar area. Place the swab in 2 mL of standard viral transport medium (VTM). Urine samples should be maintained at 4°C and shipped on cold packs.

Photo courtesy of the Illinois Dept. of Public Health - Div. of Laboratories (Chicago Virology Section)





Photo courtesy of the Illinois Dept. of Public Health - Div. of Laboratories (Chicago Virology Section)

Collect 50 mL of urine should be collected in a sterile container. Note: urine samples may not be positive until >4 days after symptom onset.


	GENERAL	HEALTHCARE PERSONNEL
ISOLATION	<ul style="list-style-type: none"><li>Persons exposed to case 2 days prior through 9 days (per Hawaii State Law) after onset of parotitis</li></ul>	<ul style="list-style-type: none"><li>Personnel with unprotected exposure to mumps case (e.g., within 3 feet of patient without use of proper personal protective equipment)</li></ul>
EVIDENCE	<ul style="list-style-type: none"><li>Written documentation of receipt of age-appropriate, valid live mumps virus-containing vaccine; or</li><li>Laboratory evidence of immunity; or</li><li>Laboratory confirmation of disease; or</li><li>Birth before 1957</li></ul>	<ul style="list-style-type: none"><li>Written documentation of vaccination with two valid doses of live mumps virus-containing vaccine; or</li><li>Laboratory evidence of immunity; or</li><li>Laboratory confirmation of disease</li></ul>
EXCLUSION	<ul style="list-style-type: none"><li>No</li></ul>	<ul style="list-style-type: none"><li>No</li></ul>
ISOLATION	<ul style="list-style-type: none"><li>No evidence of immunity:<ul style="list-style-type: none"><li>Exclude from school, work, travel, public places from day 12 after first unprotected exposure through day 25 after last exposure</li><li>May resume activities immediately after immunization, if no symptoms of mumps</li></ul></li><li>Educate re: symptoms of mumps</li><li>Presumptive evidence of immunity:<ul style="list-style-type: none"><li>Do not need to be excluded from school, work, travel, public places</li><li>Educate re: symptoms of mumps</li></ul></li></ul>	<ul style="list-style-type: none"><li>No evidence of immunity:<ul style="list-style-type: none"><li>Exclude from work from day 12 after first unprotected exposure through day 25 after last exposure, regardless of receipt of MMR vaccine after exposure</li><li>Educate re: symptoms of mumps, including non-specific presentations</li></ul></li><li>Partial vaccination:<ul style="list-style-type: none"><li>Personnel with written documentation of only one dose of mumps vaccine may continue working following an unprotected exposure to mumps.</li><li>Should receive a second dose as soon as possible, but no sooner than 28 days after first dose</li><li>Educate re: symptoms of mumps, including non-specific presentations</li></ul></li><li>Presumptive evidence of immunity:<ul style="list-style-type: none"><li>Do not need to be excluded from work</li><li>Educate re: symptoms of mumps, including non-specific presentations</li></ul></li></ul>

Centers for Disease Control and Prevention Mumps Website, <https://www.cdc.gov/mumps/index.html>  
Hawaii Administrative Rules Title 11, Chapter 156.  
Manual for the Surveillance of Vaccine-Preventable Diseases, 6<sup>th</sup> Edition, 2013.

05/31/2017








## DON'T LET MUMPS SPOIL YOUR FUN









### MMR VACCINATION IS THE BEST PROTECTION AGAINST MUMPS!

### KEEP FROM SPREADING MUMPS



Don't share drinks or eating utensils   Cover your coughs and sneezes   Stay home when you are sick   Wash your hands often with soap and water   Clean and disinfect surfaces

### SIGNS AND SYMPTOMS OF MUMPS


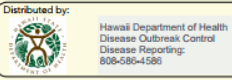



Mumps is best known for the puffy cheeks and swollen jaw that it causes.

Fever   Headache   Loss of appetite   Muscle aches   Tiredness

### THERE IS NO TREATMENT FOR MUMPS

If you have symptoms, stay home and away from others and contact:





# MAHALO



HAWAII STATE  
DEPARTMENT  
OF HEALTH

JASON DELA CRUZ

PHP PUBLIC HEALTH EDUCATOR

HAWAII DISTRICT HEALTH OFFICE

DEPARTMENT OF HEALTH

[JASON.DELACRUZ@DOH.HAWAII.GOV](mailto:JASON.DELACRUZ@DOH.HAWAII.GOV)

OFFICE: (808) 974-6010