

When Disaster Strikes!

2017 Hurricane Experience

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August 14, 2018



What to expect...

1. Sharing 2017 Experience (work, IT, policy)

- ☐ Texas
- ☐ Puerto Rico
- ☐ US Virgin Islands

2. Panel Discussion – Your Questions



GOAL: Share experience and provide insights to help in your disaster preparedness activities.



Or

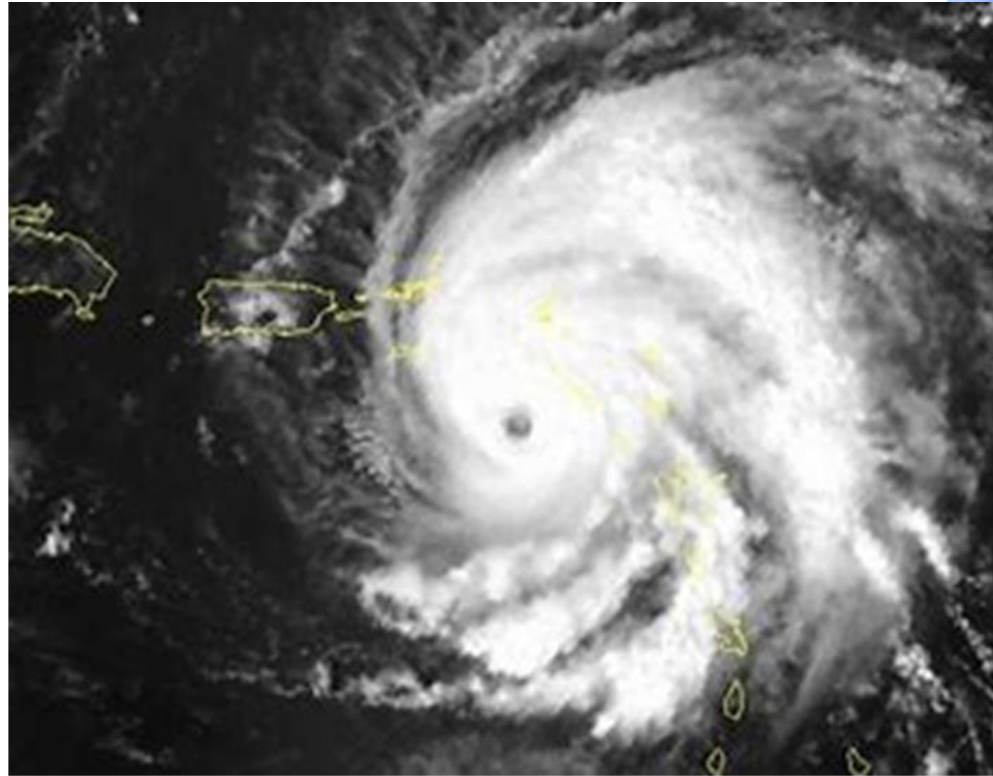


Disaster - Definition

A disaster is a serious disruption, occurring over a relatively short time, of the functioning of a community or a society involving widespread human, material, economic or environmental loss and impacts, which exceeds the ability of the affected community or society to cope using its own resources.



Last Major Storm...

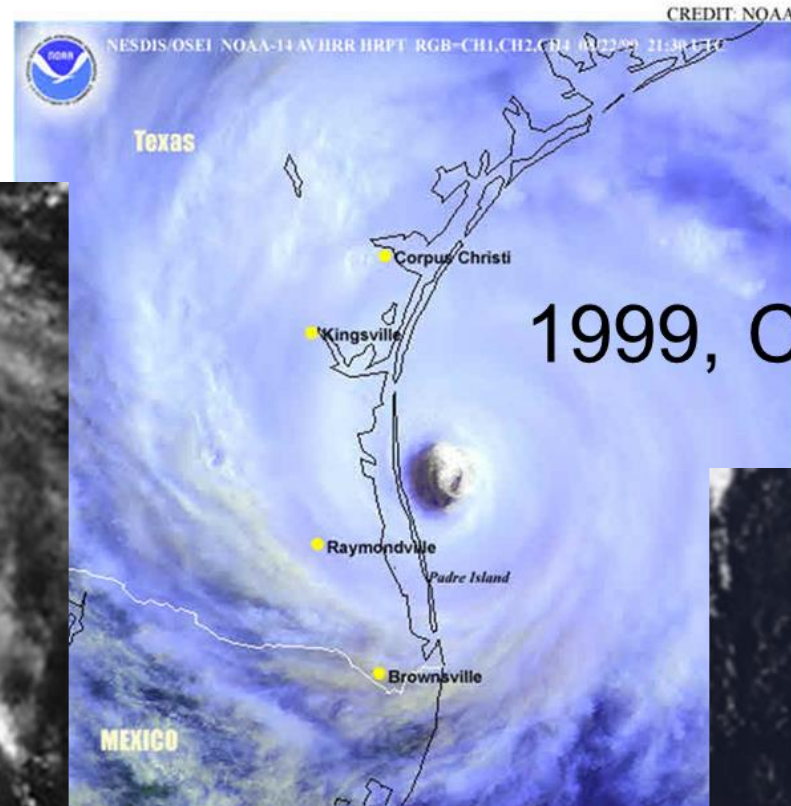


1989, Cat3 Hurricane Hugo – Puerto Rico

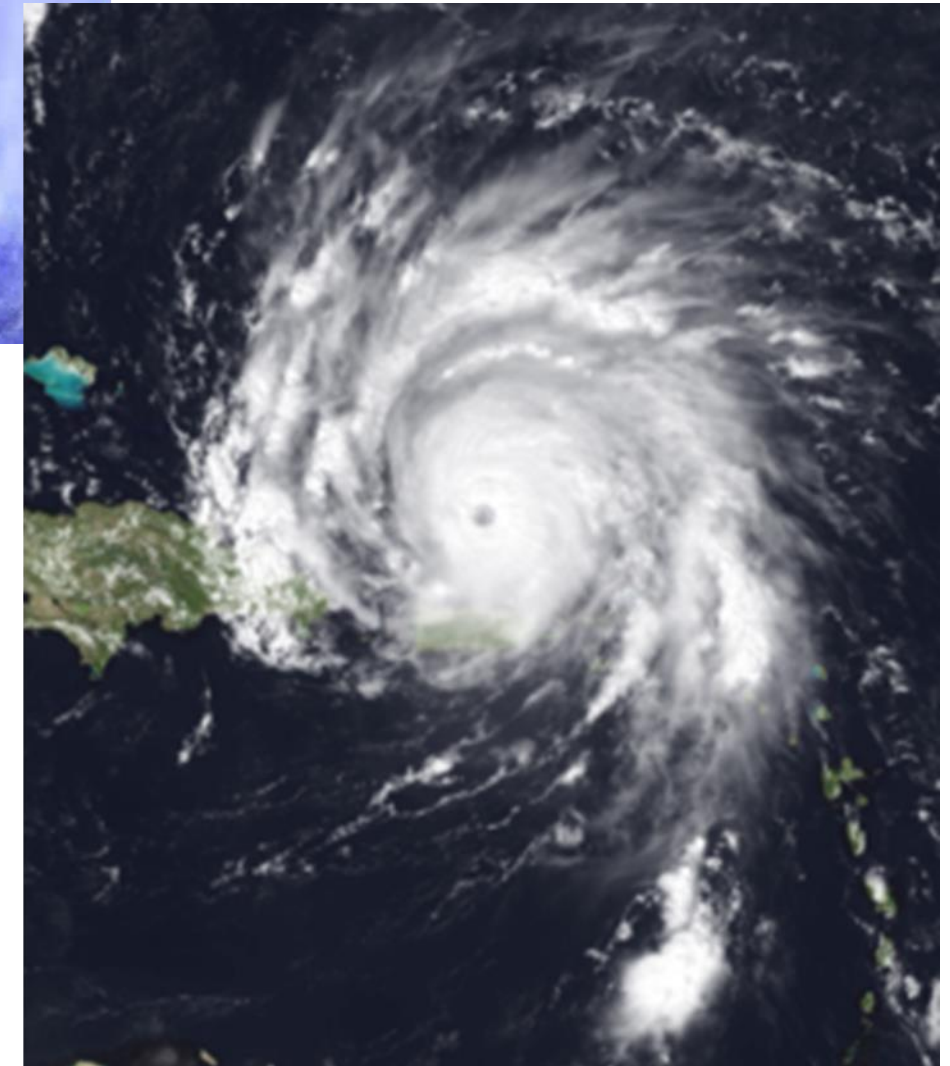
1995, Cat3 Hurricane Marilyn – US Virgin Islands

Think about IIS then...

Hurricane Bret, a powerful Category 4 storm, nears landfall on the coast of Padre Island in southern Texas. Winds associated with the storm are sustained at 120 knots (138 MPH) with stronger gusts.



1999, Cat4 Hurricane Bret - Texas





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Services

**Texas Department of State
Health Services**

Vaccinating in the Aftermath of a Natural Disaster

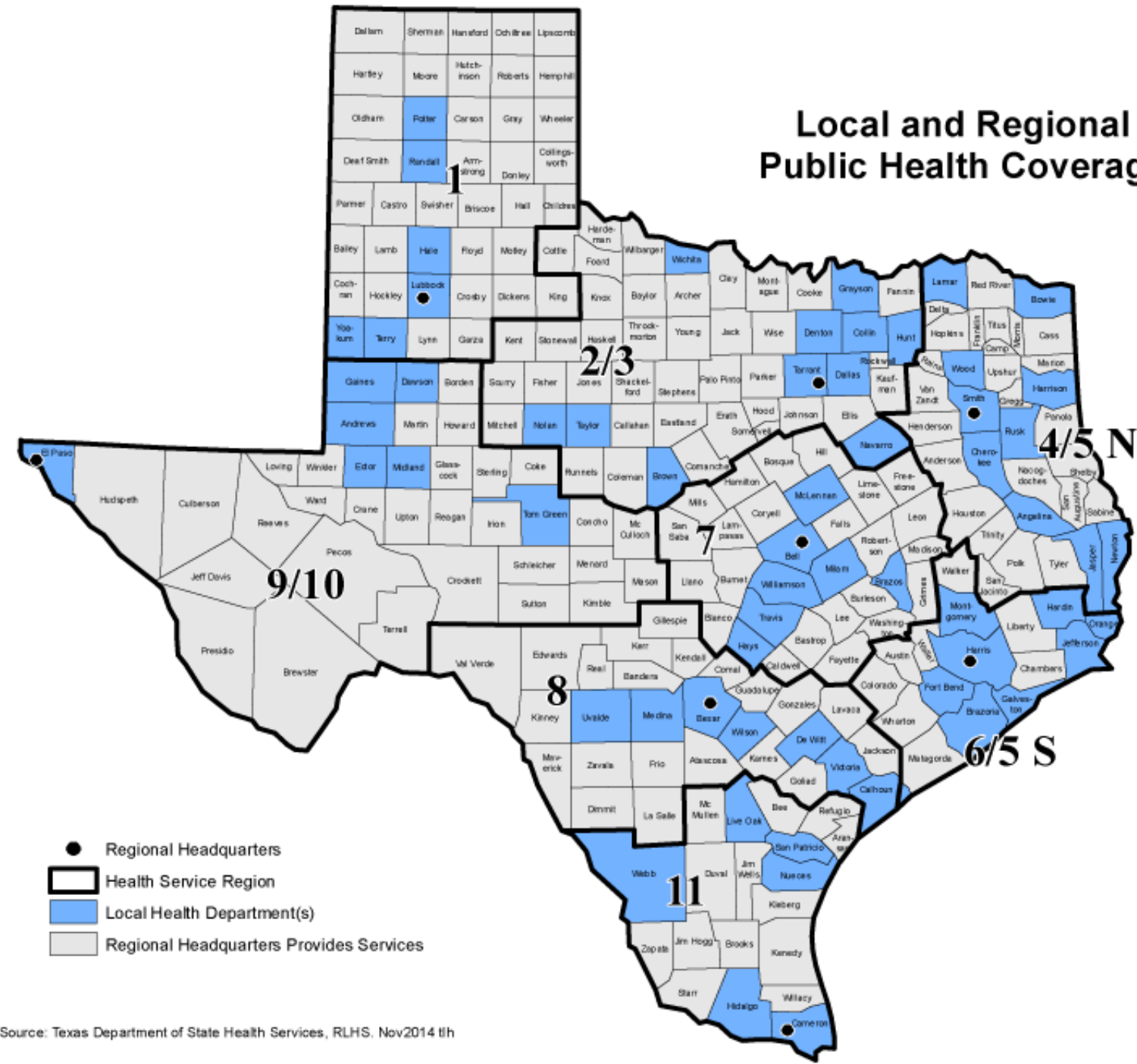
**Texas Immunization Unit's Response to
Hurricane Harvey**



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8/30/2018

Vaccinating in the Aftermath of a Natural Disaster: Texas Immunization Unit's Response to Hurricane Harvey

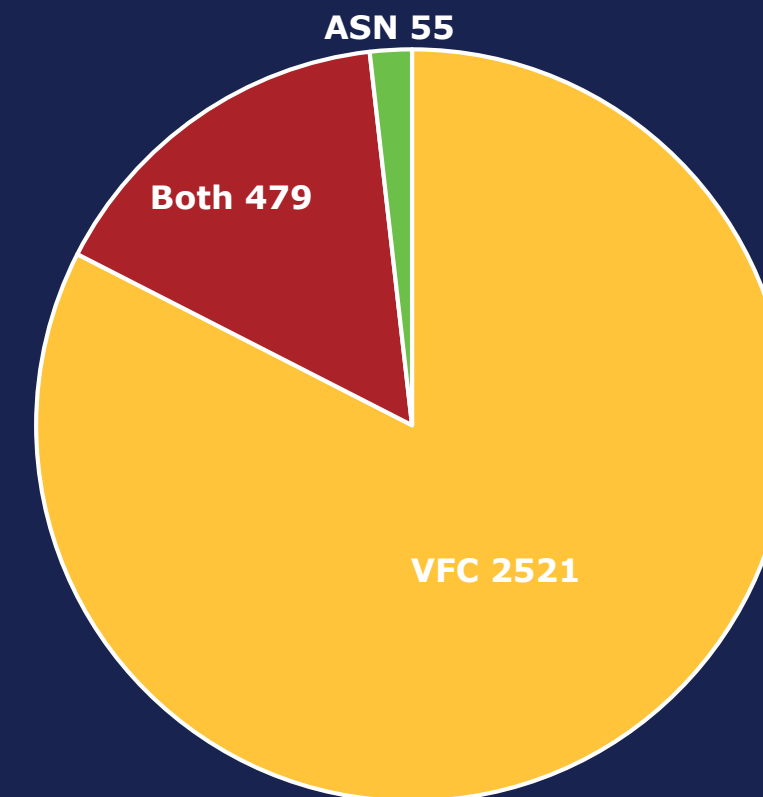
Background: Texas Immunization Unit



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- Texas Vaccines for Children (TVFC) & Adult Safety Net (ANS) Programs
 - Over 3,000 providers enrolled
 - 94 DSHS Clinics
 - 130 Local Health Departments



Background: Hurricane Harvey



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- Category 4 with diameter of 280 miles and winds of 130+ mph
- Affected over 13 million people
- Caused \$180+ billion in damages
- 780,000 people requested FEMA assistance
- 37,000+ Texans in shelters
- 10,000+ people rescued



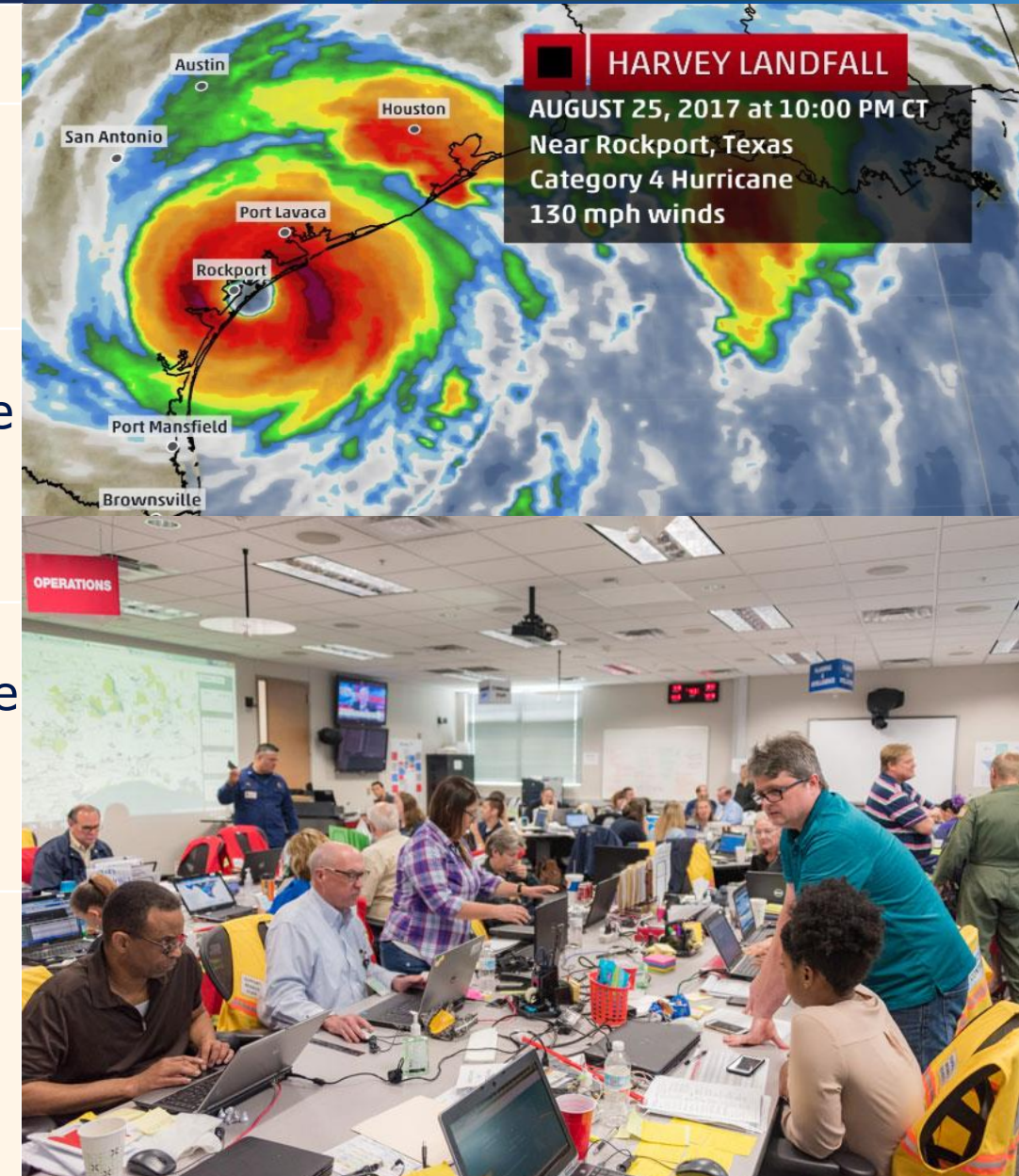
A Texas National Guardsman carries a resident from her flooded home following Hurricane Harvey in Houston, Aug. 27, 2017. Army National Guard photo by Lt. Zachary West

Harvey Response: Timeline



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Date	Event
8/23/2017	Governor issues disaster proclamation for 30 counties. Communication established with target areas
8/25/2017	Hurricane Harvey makes landfall in the late evening hours between Port O'Connor and Port Aransas
9/5/2017	Immunization Cell in conjunction with State Medical Operations Center (SMOC) operations
9/29/2017	Official Hurricane Harvey Response ends for Immunization Unit



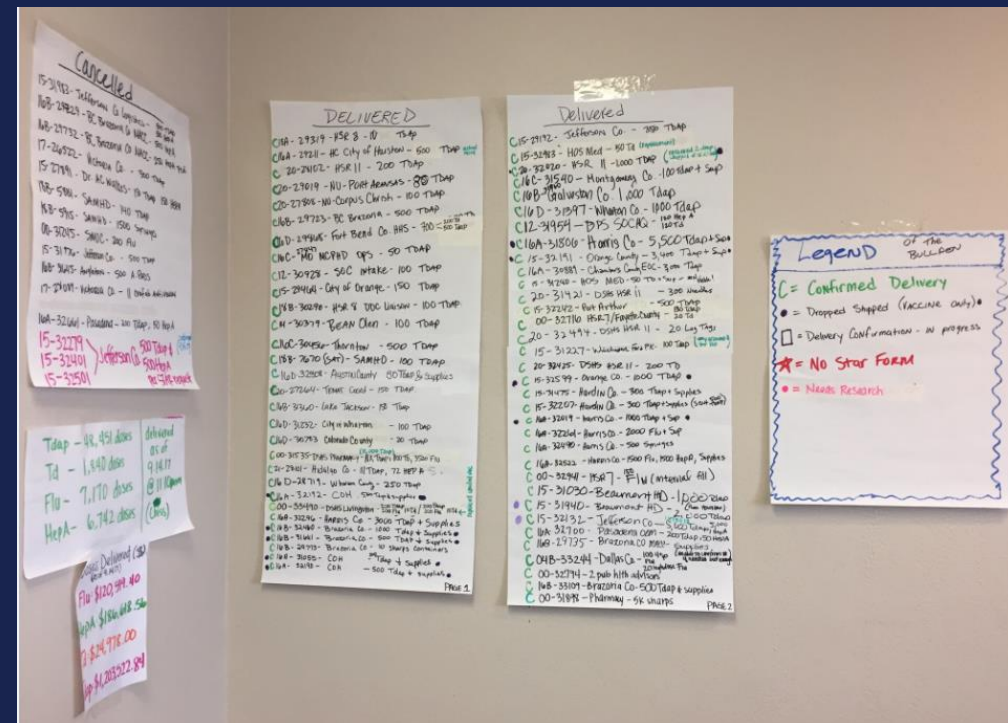
Harvey Response: Immunization Cell

- Round the clock staffed by TVFC Program Staff (including weekends/holidays)
- Data center for vaccine orders, shipment status, receipt status and dose tracking



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Vaccinating in the Aftermath of a Natural Disaster: Texas
Immunization Unit's Response to Hurricane Harvey

Harvey Response: Immunization Cell

- Back-up support for vaccine storage and handling issues (worked with DSHS Pharmacy Branch on vaccine shipments)
- Packed supplies to be sent with vaccine (band-aids, needles, syringes, etc.)
- Provided updates daily to Immunization Unit and Section Staff



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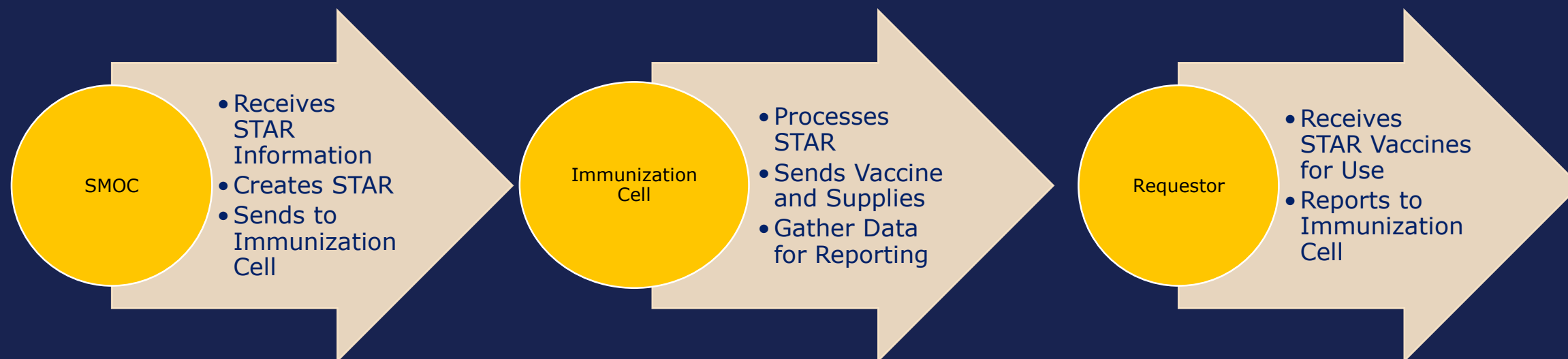
Harvey Response: Filling Texas Assistance Requests (STAR)



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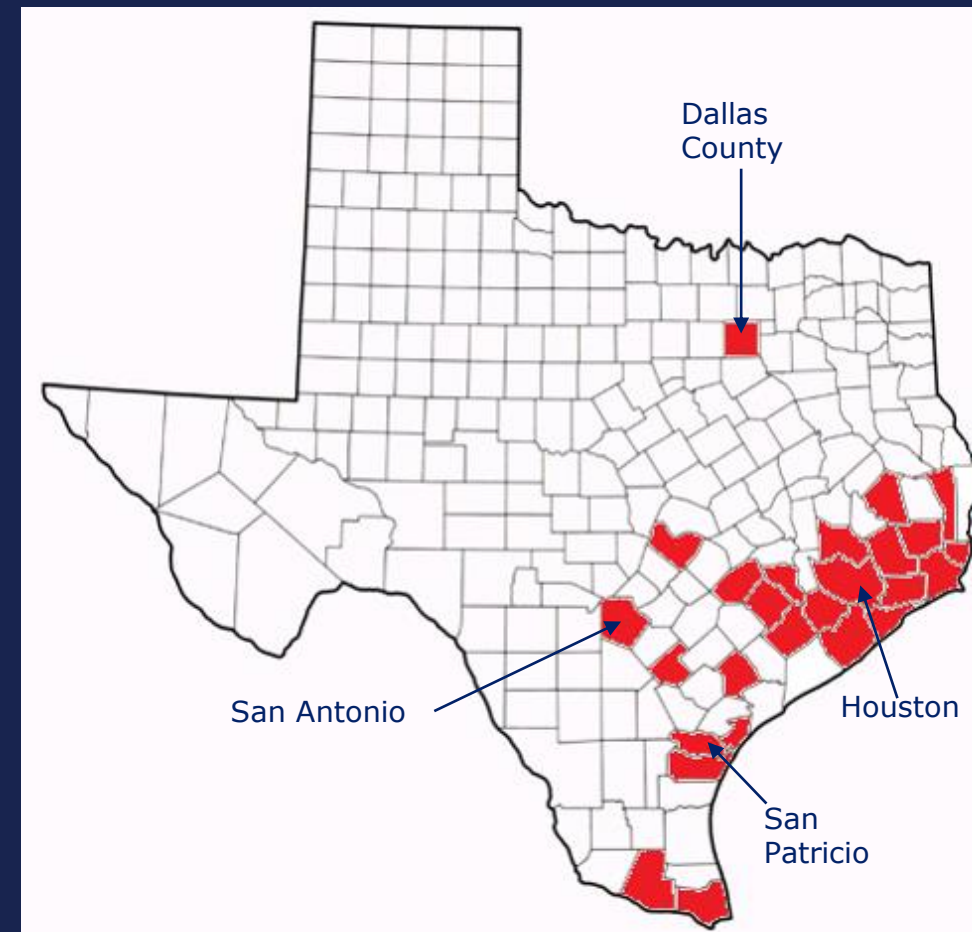
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- Vaccine for First Responders and the general public affected by Hurricane Harvey
- 80 Total State of Texas Assistance Requests (STAR)
 - 65 STAR requests fulfilled
 - 15 STAR requests cancelled



Harvey Response: Geographic Location

- 26 Counties that received vaccines
- Vaccines types requested:
 - Tdap
 - Influenza
 - TD
 - Hepatitis A



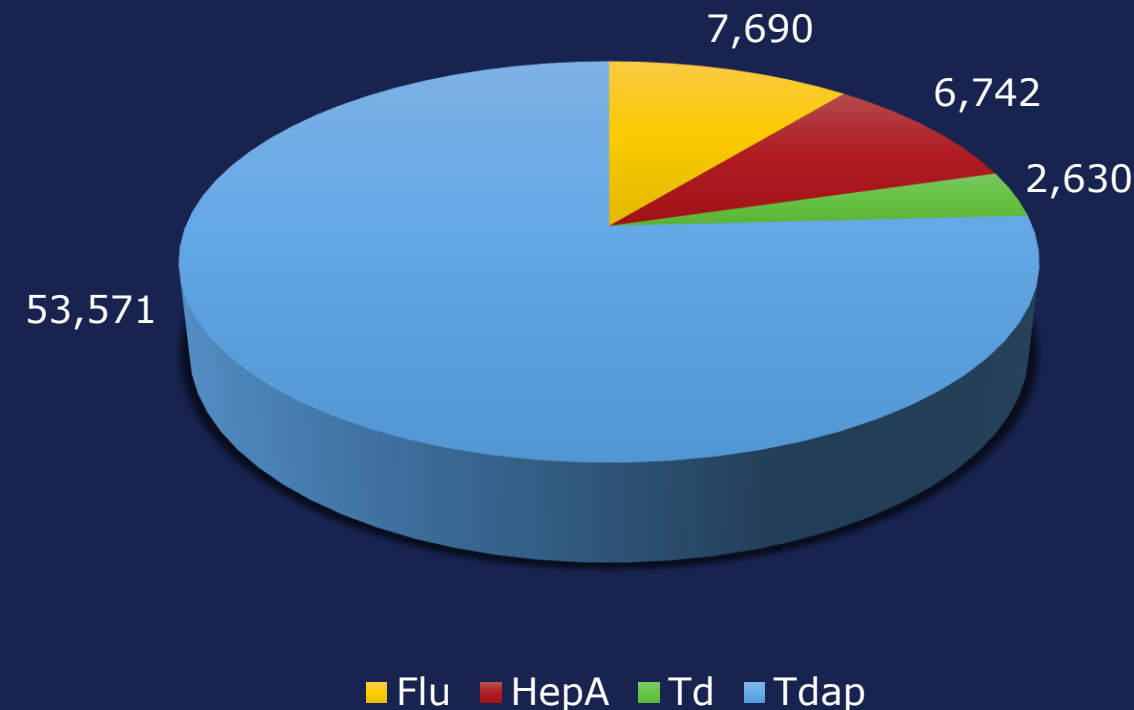
Harvey Response: Vaccines Distributed



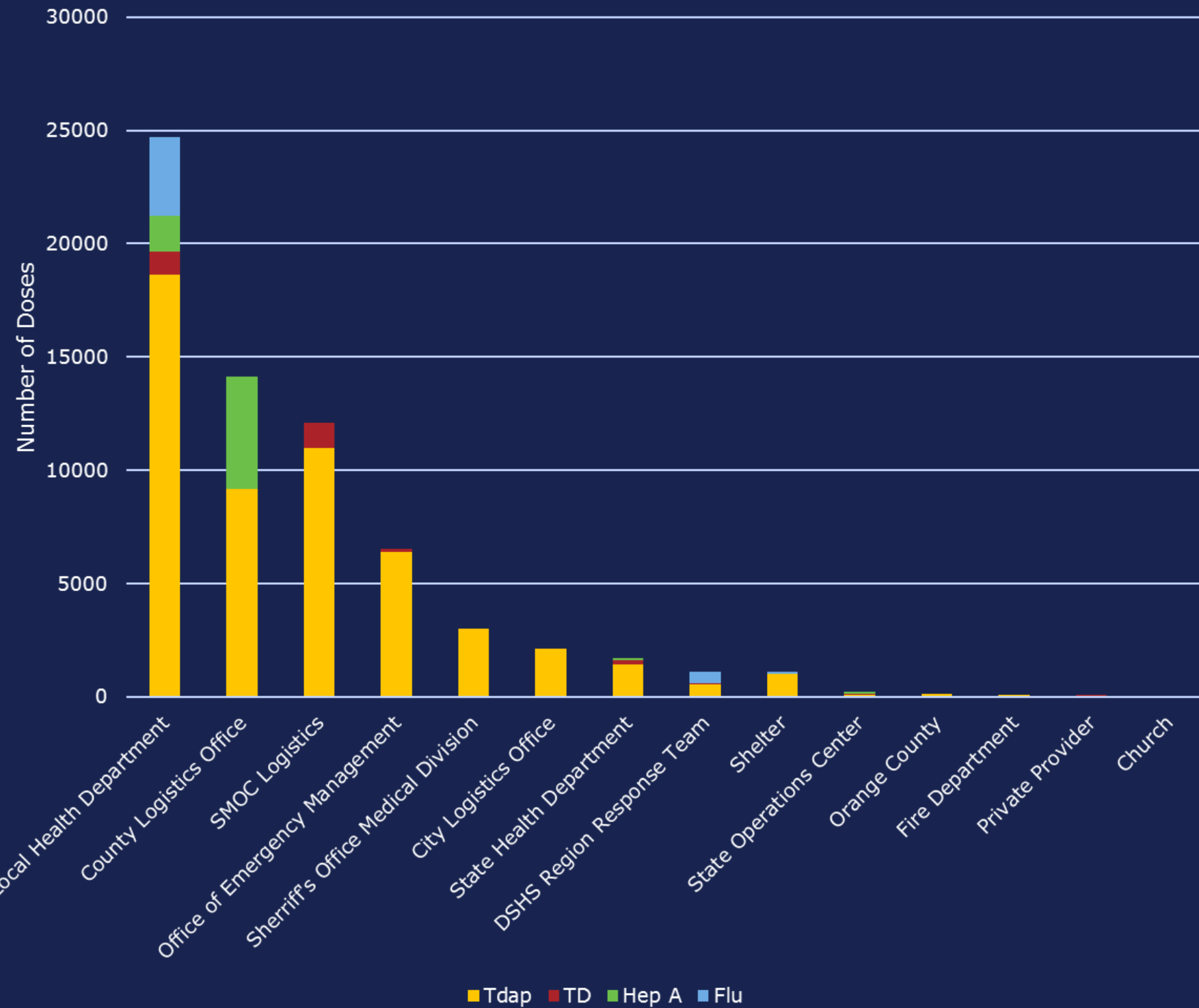
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A total of 70,633 doses of emergency response vaccine were distributed in response to the hurricane



Summary of Locations that Received Vaccines



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Harvey Response: Overview



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Successes

Initiating Immunization Cell to increase response time and create timely solutions to challenges

Collaboration between SMOC, Immunization Cell, and Pharmacy

Combining shipping methods to get vaccine where it was needed most

Met the identified needs of jurisdictions impacted by Harvey

Challenges

Issues establishing a method to tracking status of STAR requests

Purchasing of ancillary supplies

Establishing optimal distribution method during first days of Immunization Cell

Communication with HHSC/IT on support of ImmTrac2 during disasters



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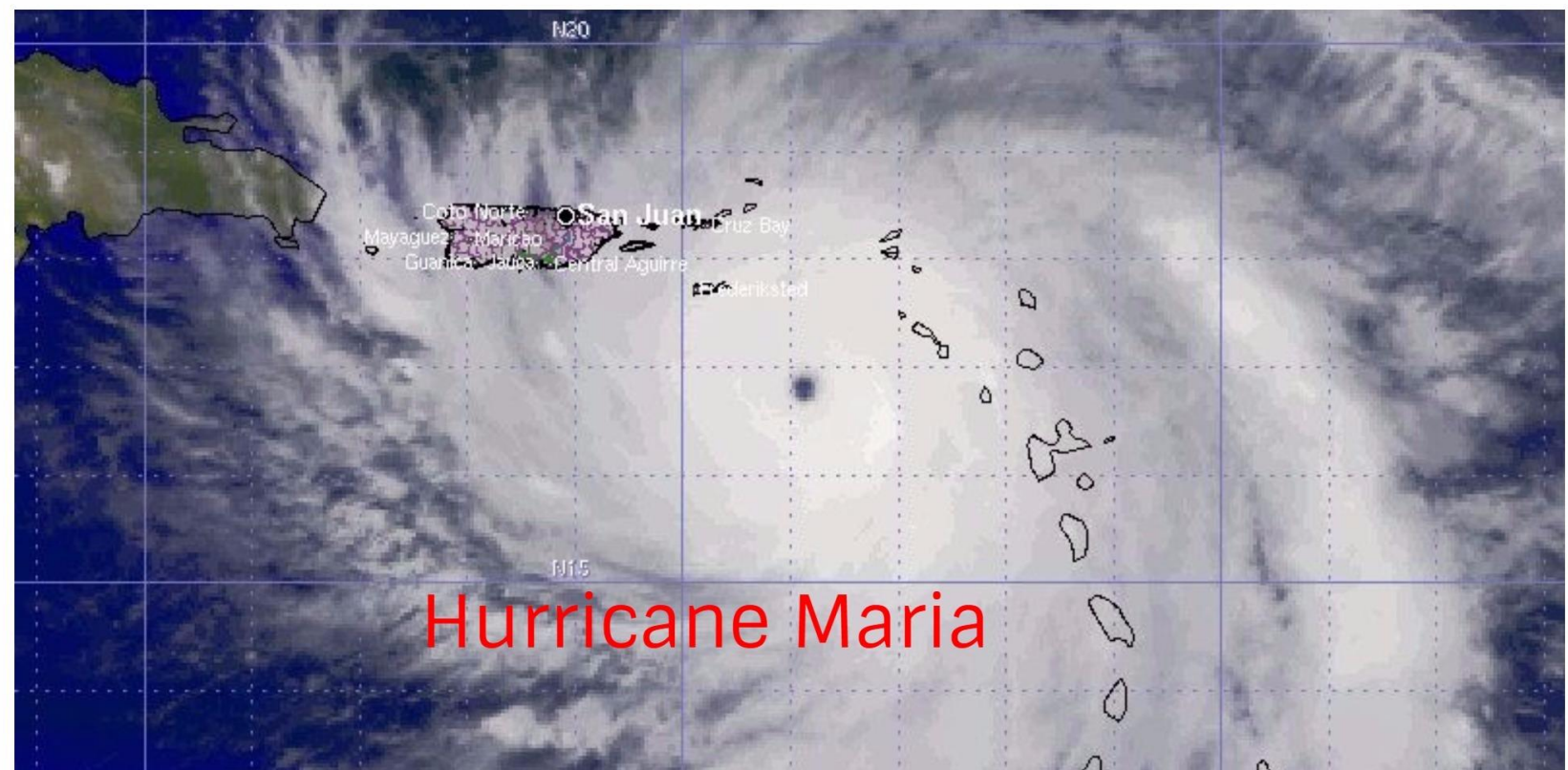
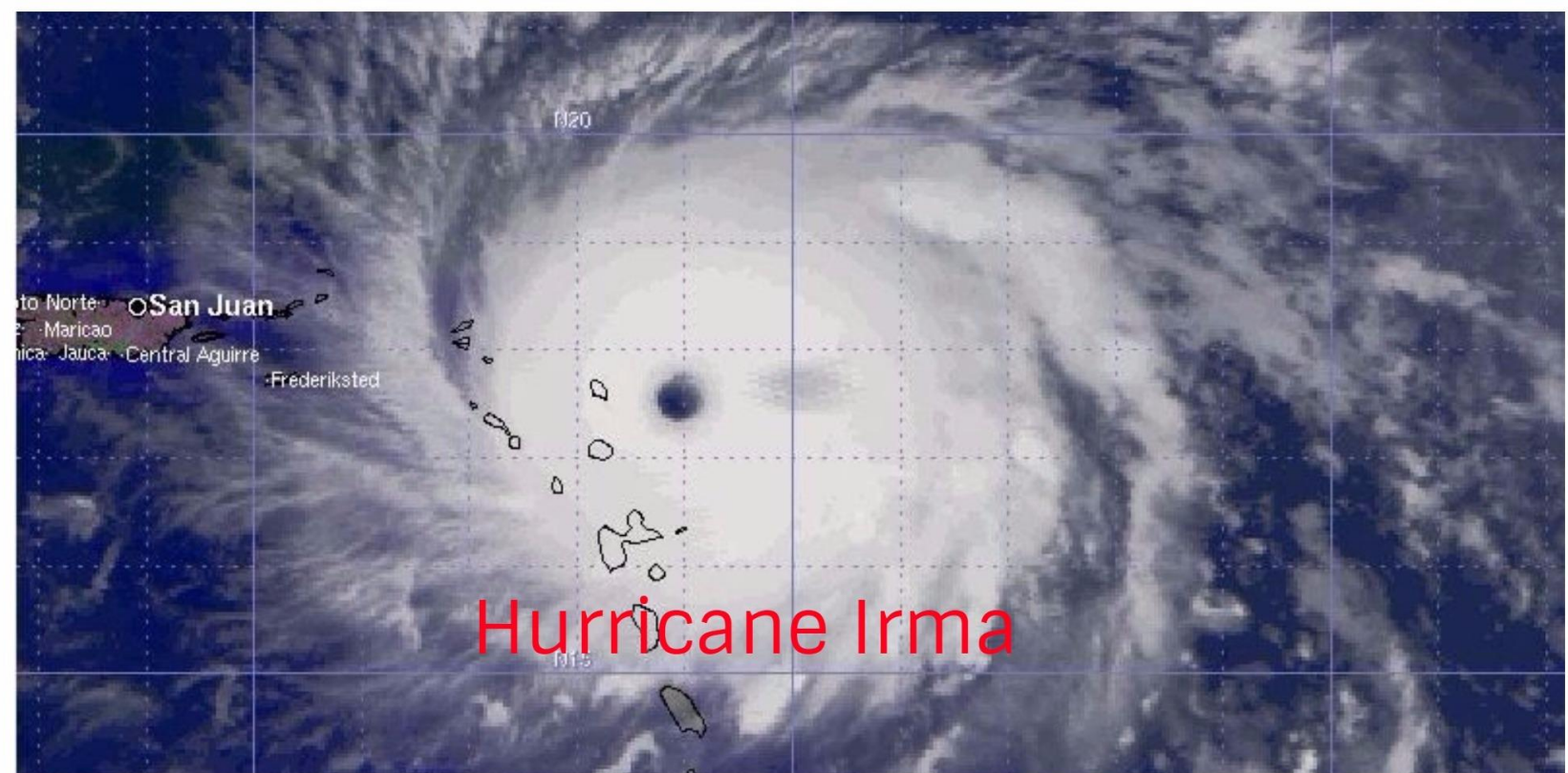
**Texas Department of State
Health Services**

Thank you

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Then came...

Irma and Maria



First...A Geography Lesson



Puerto Rico Demographics

~3.34 million people on Puerto Rico

~2.6 million in Northeast Puerto Rico (San Juan Metropolitan Area)

~1,000 miles from Miami

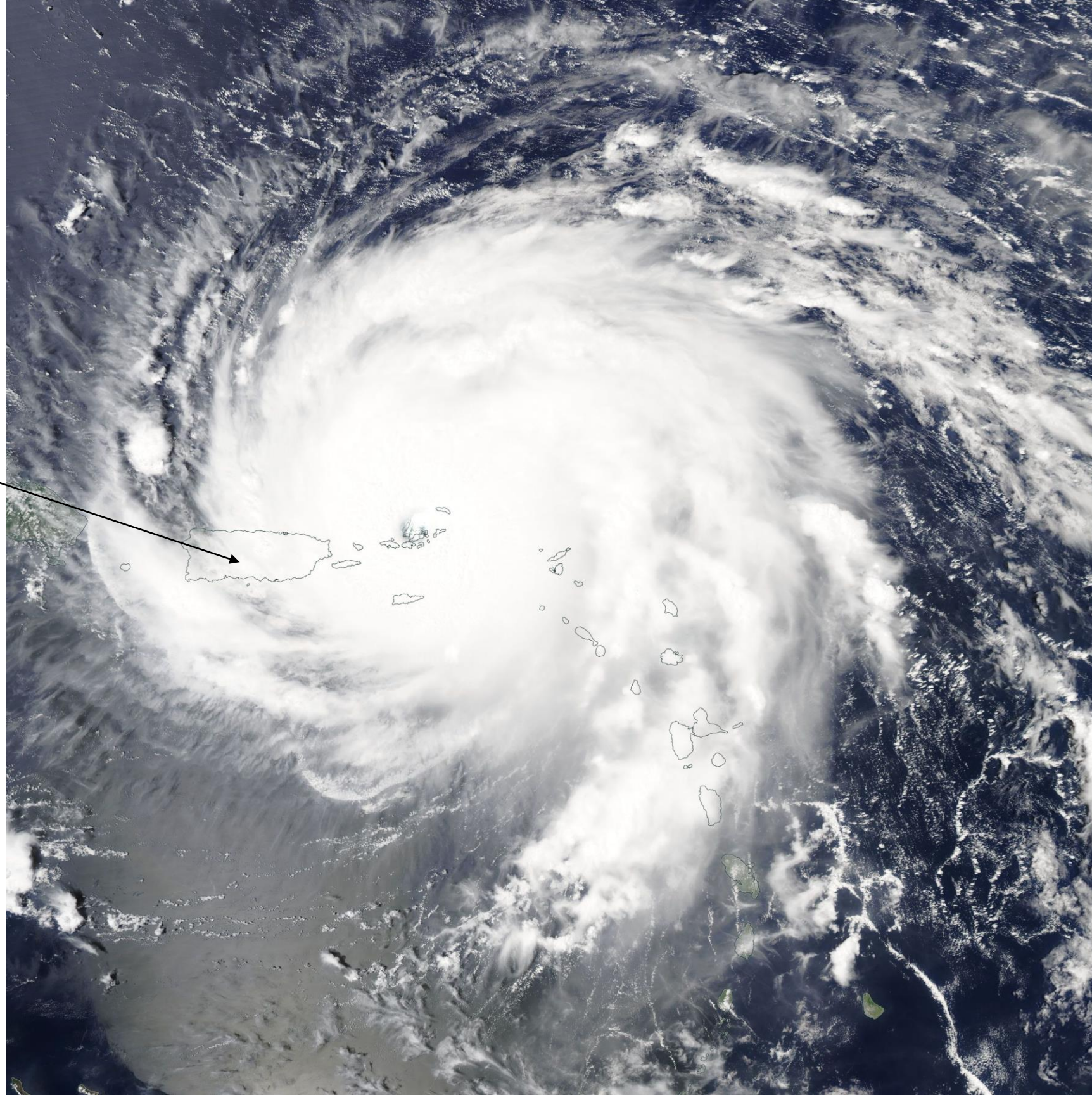
~3,500 square miles

Highest point 4,300 feet



Irma

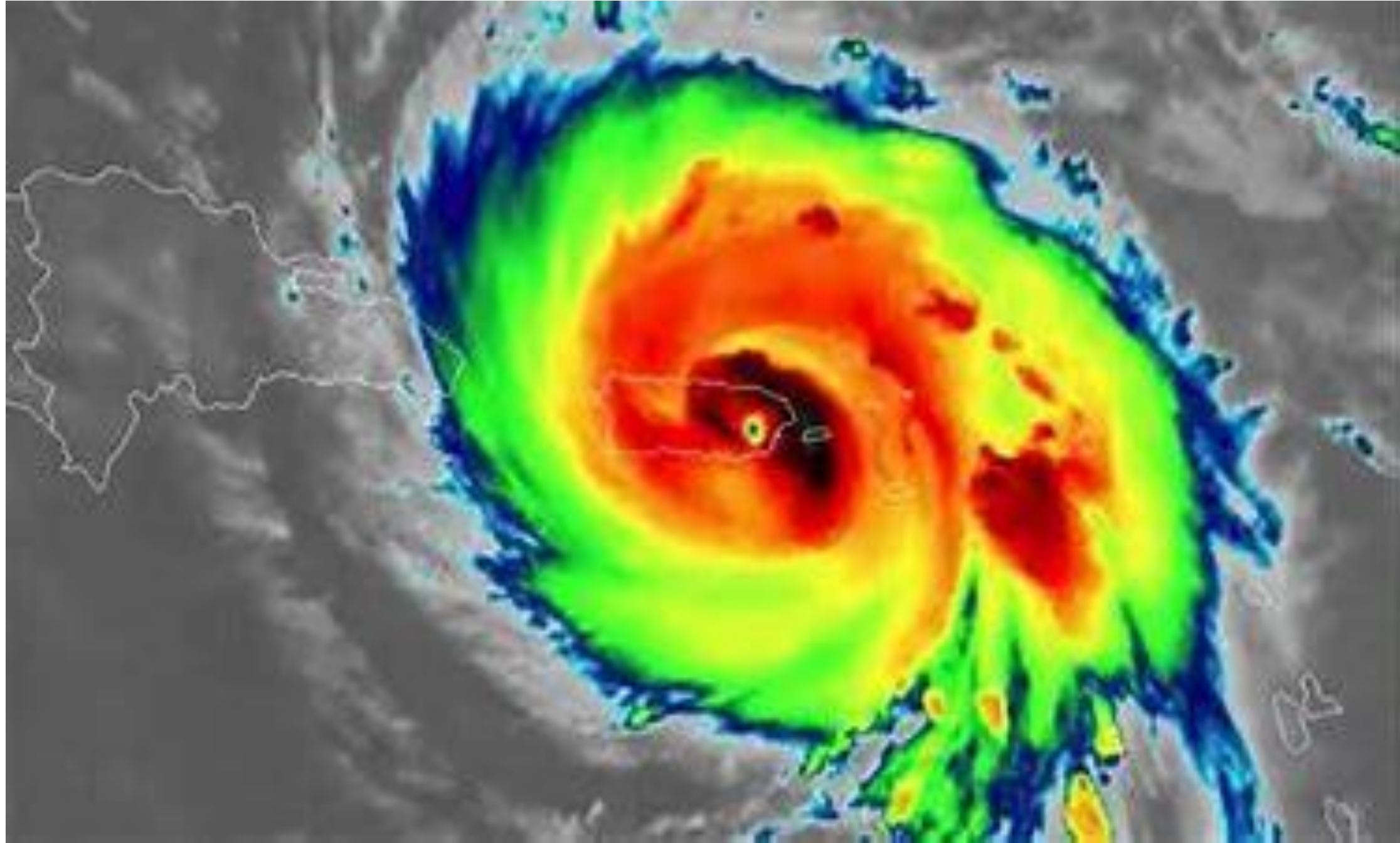
Puerto Rico



- Largest storm in Atlantic Basin History
- Longest Cat 5 storm (3 Days)
- 400 mile diameter
- 185+ MPH Winds for 37 hours

Maria

- Cat 5 Storm
- 160 MPH
- Direct hit to Puerto Rico



Post Irma and Maria – Puerto Rico

➤ Irma - September 6, 2017

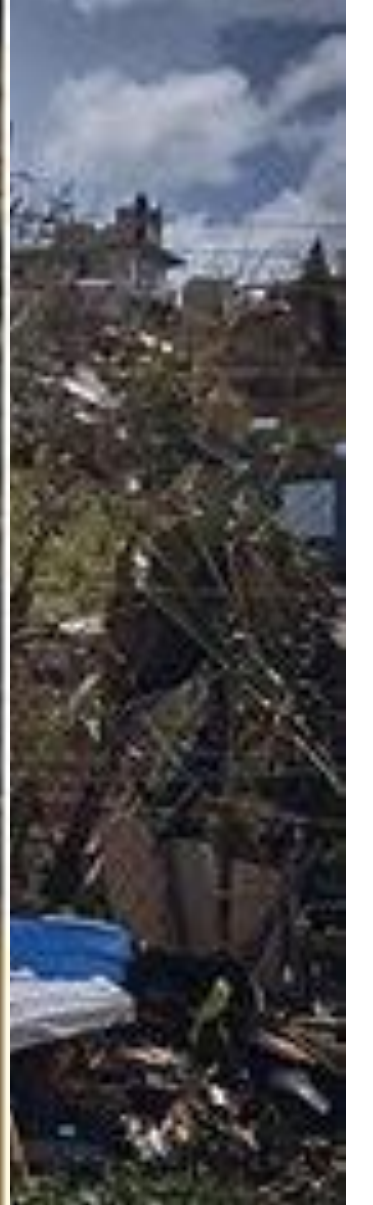
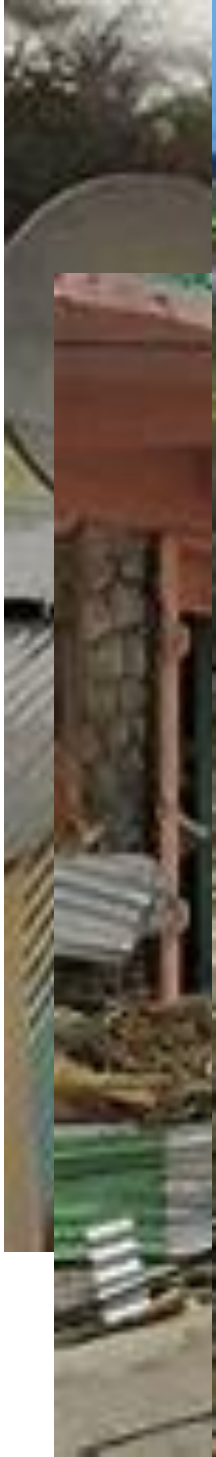
- Minor Damage (indirect hit)
- A few days without power the systems rapidly restored

➤ Maria – September 20, 2017

- Heavy Damage (direct hit)
- Significant property damage and roads blocked
- Communication unavailable – 2+ months to have reliable cell phone and internet
- No Power, some staff waited until December 2017 and February 2018 before residence power restored
- Water/Fuel/Food – People have to wait in long lines to access them

Note: As of August 2018, there are places in Puerto Rico that don't have water and electricity, still with unreliable internet communication network.





Post-Storm Crisis – Puerto Rico

Volunteer groups around the island were organized to help during the crisis. These groups helped provide people with supplies such as: water, food, clothes and filters/pills for drinkable water.



American Red Cross in Puerto Rico

The American Red Cross organized several volunteer groups to distribute food, water, hygiene products, among others. They also distributed pet food.



Working Post-Storm – Puerto Rico



Office of Immunization Program Available 1-week after Maria, initial working limited to 5 hours per day (due to limited power)

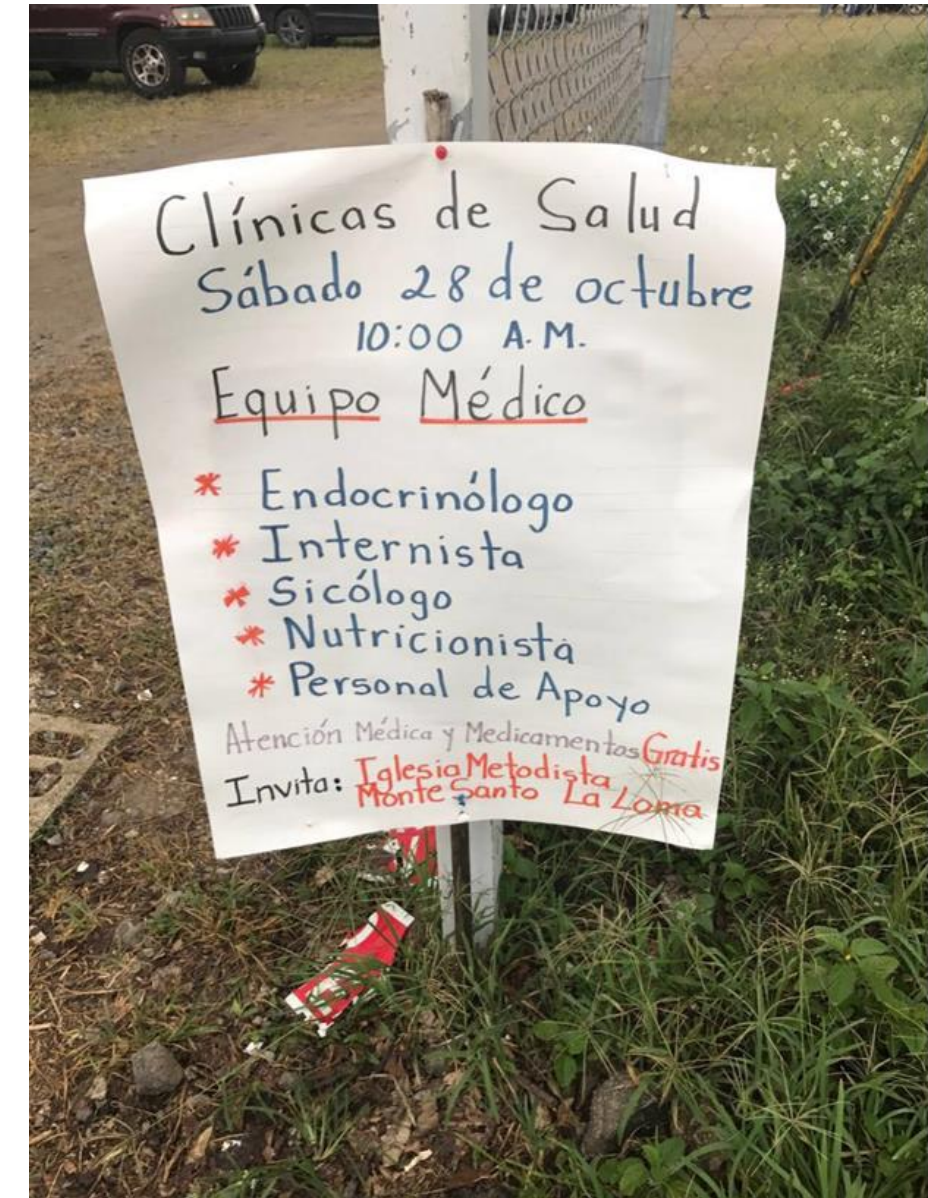
Work related challenges:

- Limited communication
- Limited travel ability
- Balancing work vs. limited working hours
- Not enough fuel, only \$20 per vehicle
- Limited hours to stay outside houses because a curfew was imposed by government. People could stay outside their houses only until 6 p.m.

Post-Storm Personnel Recruitment – Puerto Rico

Puerto Rico received thru CDC Foundation, funding to hire personnel to help with the PRIR's immunization records update and assist in a special vaccination around the islands. Personnel was composed of four data entry and 50 nurses to administer vaccines.

PRIR was updated with a total of 72,937 immunizations, in 7 months: January 1 to July 31, 2018.



Post-Storm Vaccine Donations – Puerto Rico



After Hurricane Maria, Puerto Rico received thru CDC Foundation the following vaccines donations (in doses):

Vaccine Name	Total Doses
Tdap	30,000
Hep A	1,000
Hep B	1,000
Flu	129,970
Pneumo Poly	2,000

Post-Storm Vaccine Orders

Providers that received vaccines orders during October 2017 and July 2018:

Orders By Months	Total Providers
Providers before Hurricane Maria	225
Providers that ordered vaccines after Maria (until October 2017)	8
Providers that ordered vaccines on November 2017.	57
Providers that ordered vaccines on January 2018.	121
Providers that ordered vaccines on March 2018.	171
Providers that ordered vaccines on July 2018.	201

IIS Impact – Puerto Rico



- Minimal damage to on-island hosting facility
- IIS available on October 2nd (5-day outage, communication)
- Back-ups in place and verified pre-storm
- Limited use – communication/internet availability. Main offices were able to access PRIR because it is in the intranet but providers do not
- Primary use post storm – vaccine ordering/approvals (based on facility verification)



Policy Impact – Puerto Rico



- Direct access to PRIR provided to immunization programs
 - IIS Security and Confidentiality Agreement
- Data sharing agreements – existing policy allowing PRIR to share with signed data sharing agreement in place between PR DOH and specific entity.
- PRIR disaster sharing policies - the established policy about rules to share data must be a signed agreement between Puerto Rico Health Department (PR DOH) and specific provider or entity. The Data Agreement must be evaluated by the Health Department Legal Division.
- Prior to hurricane – A double backup of the PRIR (IIS) was performed previous the Hurricane Maria. One in the islands and another external with application vendor.
- When no access to PRIR, providers are able to complete the vaccine administration authorization report manually. They also can produce the vaccine certification manually.



US Virgin Islands Demographics

~ 104,000 people on Virgin Islands

~ 40 miles from Puerto Rico

3 primary islands ~ 134 square miles

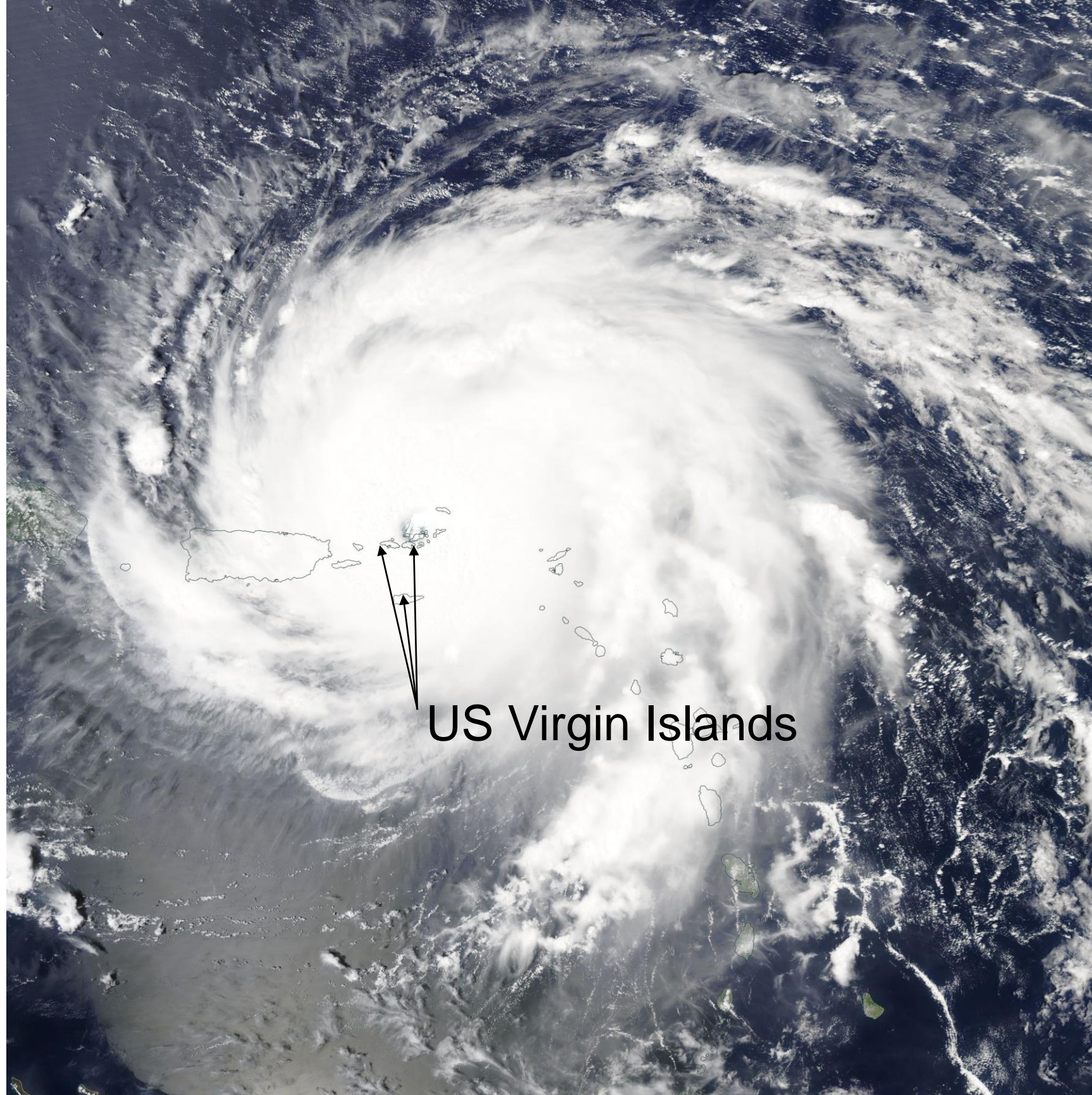
Highest point 1,555 feet

St. Thomas – Primary Cruise Port/Airport and Public Health Offices

St. Croix – IT and government offices



Irma

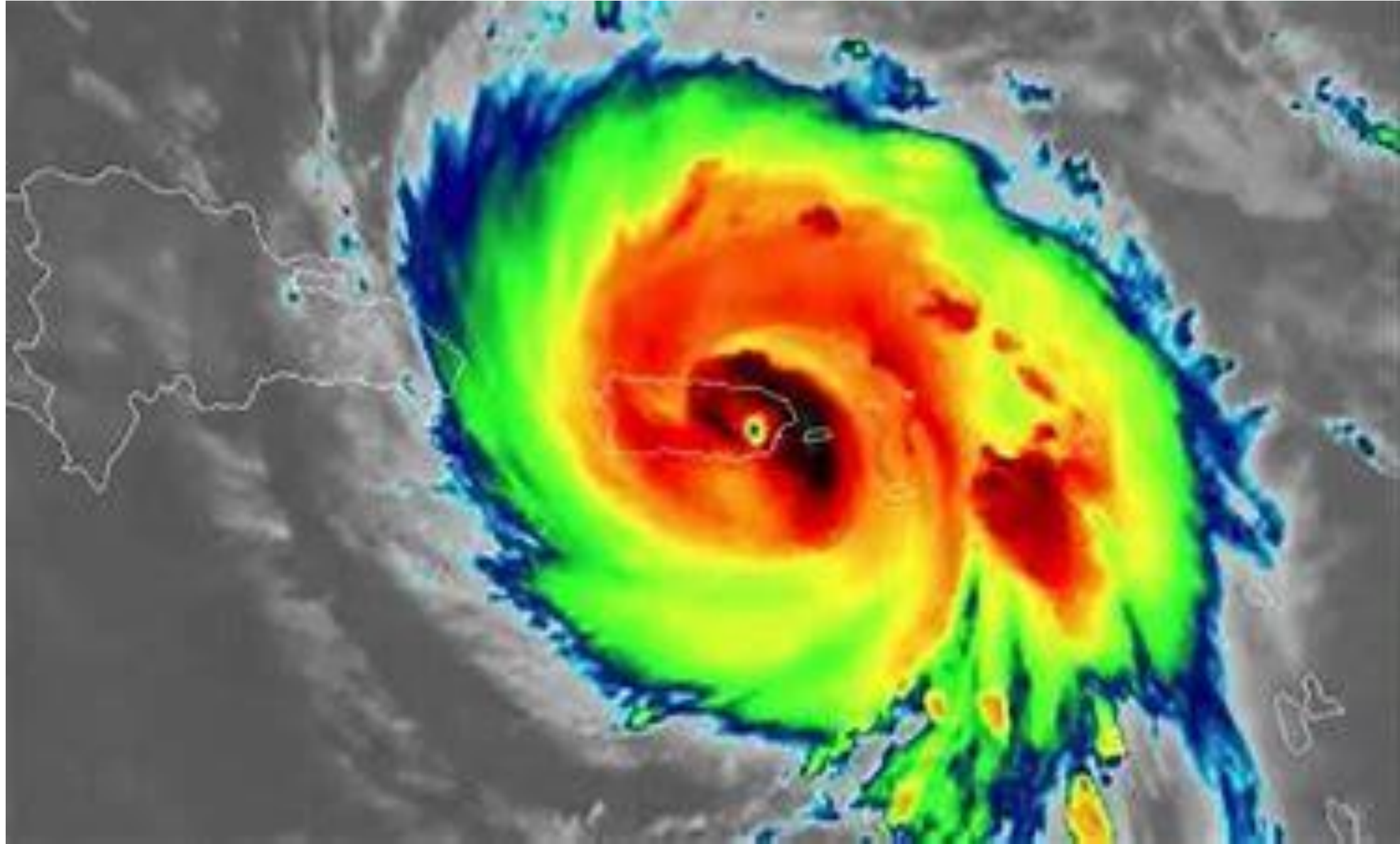


US Virgin Islands

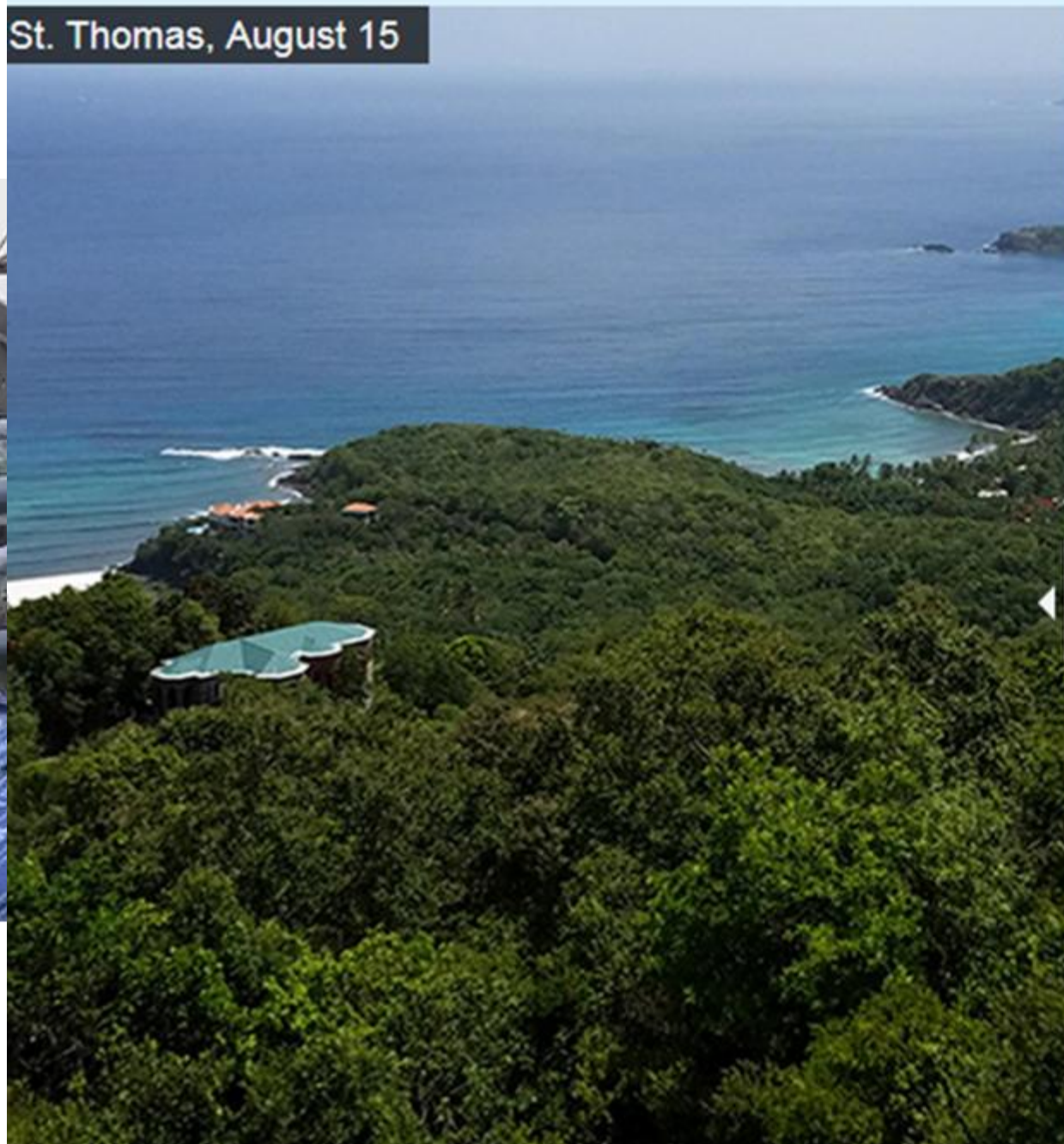
- 10 hours storm duration
- Cat5 storm, 185+ MPH winds recorded in some areas
- St. John and St. Thomas sustained most significant damage

Maria

- Cat 5 Storm, 18 hour duration
- Direct hit to St. Croix, Major damage to St. Thomas and St. John



St. Thomas, August 15



St. Thomas, September 11



Post Irma and Maria – US Virgin Islands

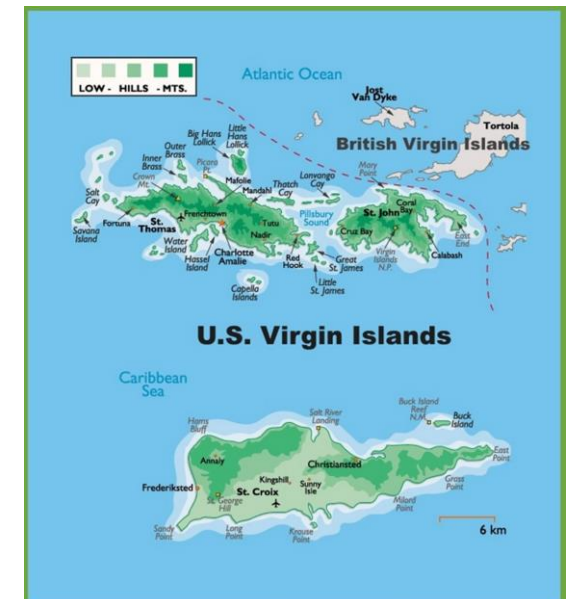


Irma - September 6, 2017

- Direct Hit (St. John/St. Thomas)
- Heavy Damage, Infrastructure Crippled
 - Power, days-to-month restoration
 - Transportation, limited ferry traffic main airport limited to emergency flights
 - Food/Water Distribution, 3-4 days post storm
 - Communication disabled and non-existent
 - Primary hospital severely damaged, patients diverted to St. Croix

Maria – September 19, 2017

- Direct Hit (St. Croix); Severe Damage (St. Thomas and St. John)
- Territory crippled, travel at stand still
- Several weeks before travel and communication resumed



Working Post-Storm – US Virgin Islands

- Accounting for staff (in-person/group chat)
- Staff hours, varied balancing assignments and personal impacts; those assigned to Emergency Operations Center worked 12-hour shifts (others reduced)
- Work Locations, new sites identified and people placed based on assignments – office not used



IIS Impact – Virgin Islands

- Irma, IIS available – however people on islands not working
- Maria, IIS total loss
 - Hosting facility in territory IT total loss
 - Back-ups not available from territory IT
 - Emergency back-up of application and data taken by IIS vendor pre-storm
- IIS recovery, in progress – contract barriers



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Policy Impact – Virgin Islands



- People dispersed, FL, GA, TX, NY, etc. (entire families vs. children)
- Reverted to manual records, where possible
- Policy existed for sharing directly with patients, but not for other jurisdictions – policy/plan since developed
- Vaccine ordering – placed on hold pre-storm and remained on hold until VFC providers storage and handling was assessed and approved post-storm







Key Conclusions – Advice Forward

- Every disaster is different, be prepared to adjust
- Policies are equally critical as IT as part of your planning
- As our reliance on technology changes, our disaster response plans need to evolve
- Communication - plans are critical and prepare for non-traditional methods
- Contracts can be a barrier to recovery
- Think basic, shelter-communication-power-work location...how will your plans work then?

Acknowledgements – THANK YOU!

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