

Experiences in Pacific Islands with
Understanding and Managing the Health
Risks of Climate Change

GUAM

Climate on Guam

- Warm and humid throughout the year
- Temperature range is from low 70s to middle 80s
- Coolest and least humid months are December - February
- Warmest months are March – August
- Two seasons
 - Dry – December to June
 - Rainy – June to December

What Climate Change Means for Guam

- Coral Loss
 - 2013 analysis of coral in Guam waters – about 53% of staghorn corals had died (habitat for baby fish)
 - Key concern is how reef damage could affect tourism which is 60% of Guam's revenue



- Tropical Storms – Guam lies within the typhoon belt
 - Since 1962, 9 major disaster declarations were due to typhoons
 - ✓ Super Typhoon Karen – 1962
 - ✓ Typhoon Pamela – 1976
 - ✓ Typhoon Roy – 1988
 - ✓ Typhoon Russ – 1990
 - ✓ Typhoon Yuri – 1991
 - ✓ Super Typhoon Omar – 1992
 - ✓ Super Typhoon Paka – 1997
 - ✓ Typhoon Chata'an – 2002
 - ✓ Super Typhoon Pongsongwa - 2002





Cont'd – What Climate Change Means for Guam

- Rising Sea Level and Coastal Flooding
 - Homes, businesses, roads, and the Port of Guam are vulnerable to the impacts of storms and sea level rise
- Rainfall and Water Supplies – impact of warmer temperatures that tend to make both rainstorms and droughts more intense
 - Potential for more inland flooding
 - Droughts could make fresh water less available – 80% of Guam's water supply comes from ground water
- Inland Plants and Animals – many tropical plants and animals could be threatened by warmer temperatures
- Human Health

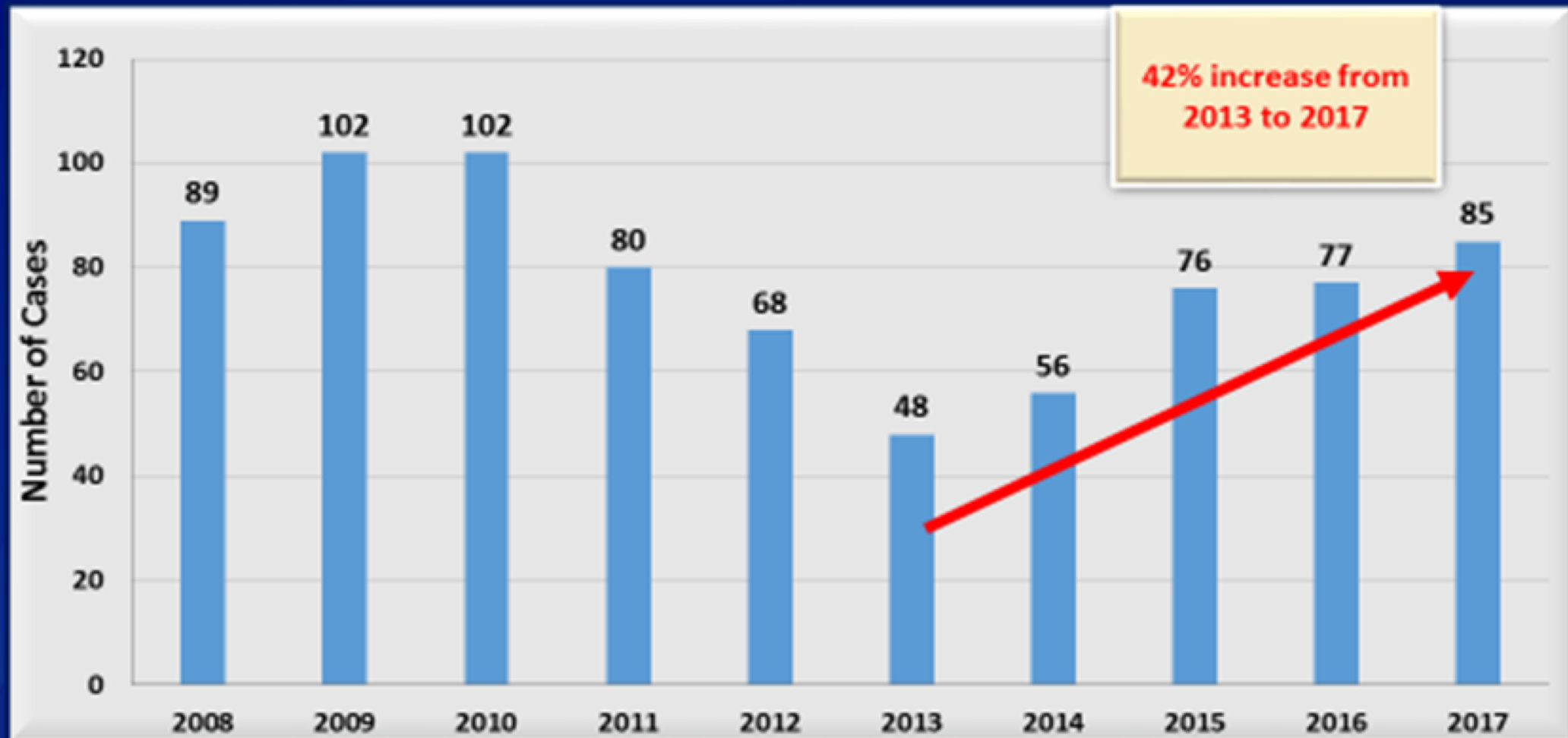
Leading Causes of Death

	2017	2016	2015	2014	2013	2012
1	Cardiovascular Diseases	Disease of heart (Heart Disease)	Data N/A	Diseases of the heart	Data N/A	Disease of the heart (Heart Attack)
2	Malignant Neoplasms	Malignant Neoplasms (Cancer)	Data N/A	Malignant Neoplasms	Data N/A	Malignant Neoplasms (Cancer)
3	Diseases of the Genitourinary System**	Chronic Lower Respiratory Disease	Data N/A	Cerebrovascular Disease	Data N/A	Cerebrovascular Disease (Stroke)
4	Sepsis	Accidents (Unintentional Injuries)	Data N/A	Accidents	Data N/A	*Diabetes
5	Cerebrovascular Diseases	Cerebrovascular Diseases (Stroke)	Data N/A	Septicemia	Data N/A	Septicemia (Blood Infection)
6	Disease of the Digestive System	Alzheimer's Disease	Data N/A	Diabetes Mellitus	Data N/A	Chronic Lower Respiratory Disease
7	Pneumonia	Diabetes Mellitus	Data N/A	Influenza and Pneumonia	Data N/A	Suicide
8	Suicide	Influenza and Pneumonia	Data N/A	Suicide	Data N/A	Certain conditions originating in the perinatal period
9	Diseases of the Nervous System	Nephritis, Nephrotic Syndrome and Nephrosis (Kidney Disease)	Data N/A	Chronic Lower Respiratory Diseases	Data N/A	Diseases of the Liver
10	Diseases of the Respiratory System	Intentional Self-Harm (Suicide)	Data N/A	Nephritis, Nephrotic Syndrome and Nephrosis	Data N/A	Accidents

Major Challenge -Tuberculosis (TB)

- The number of TB cases on Guam is rising.
- From 2008 - 2017, a total of 783 cases of TB were diagnosed and treated
- Most of the cases are imported from countries like the Philippines and FSM
- **As of April 25, 2018, 53 active TB cases** are under the care of DPHSS

Ten Years of TB in Guam



TB Patients are developing more Drug Resistance

- From 2014 to present, 10 patients are classified as Multi-Drug Resistant (MDR) TB on Guam.
 - Of the 8 cases, TWO are classified as **pre-XDR TB**

Rising cost of Treating TB

Type of TB	Length of Treatment	Cost
Non-MDR	9 months	\$1,200
MDR	20-26 months	\$138,700
XDR	32 months	\$430,000

Surveillance of Arboviral Diseases

- Guam is currently free of endemic mosquito-born diseases
- Mosquitos – *Ae. Albopictus* and several Anopheles species
- No outbreak of Dengue, Zika, Chikungunya
- Imported cases of Dengue
 - From 2007 – 2016 a total of 23 cases diagnosed

Building Capacity in Surveillance and Early Detection

- Guam Public Health Laboratory
 - PCR testing capability for Dengue, Zika and Chikungunya
 - Testing extended to USAPI
- Mosquito Lab built with DOI – Division of Environmental Health
 - Mosquito Surveillance and Control Program in it's infancy stage
 - One goal is to become a regional laboratory for the USAPIs and the Pacific region

Governance

- 2015 – Governor Calvo by Executive Order established the Climate Change Advisory Committee and Guam Climate Change Task Force
- June 8, 2017 – Passage of P.L. 34-017 that established the Guam Council on Climate Change Preparedness and Resiliency
 - Sole purpose of developing policy direction and recommendations relative to ensuring that the GovGuam focus its vast resources on preparing and planning for, and mitigating, adverse impacts of climate change on Guam
 - Membership Composition: 4 from Legislature; UOG President; chairperson from Governor's Task Force; Chairperson of the Consolidated Commission on Utilities; Executive Director of the UOG Center for Island Sustainability

Future and Challenges

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