

III Global Conference on Climate Change

Climate Resilient Health Sector Case Study- Dominica

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Chair – CARPHA TAC on Climate Change & Health

With commentary by Dr James Hospedales, ED/CARPHA

Grenada
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Overview

- ▣ **Acknowledgements: Hon Minister Dr Darroux**
- ▣ **Vulnerabilities of Dominica to climate change and variability**
- ▣ **General responses**
- ▣ **Impact of Hurricane Maria**
- ▣ **Resilience/ Policy imperatives**

Dominica's vulnerabilities



Dominica's vulnerabilities to climate change

- Dominica, the most mountainous of the Windward Islands.
- The island's peaks, each with its radial drainage system, challenge the construction of a safe build environment.
- Most people have settled along the coast.
- These features render the population vulnerable to:
 - Inland flooding from run-off from the hills and mountains
 - Storm surge and coastal flooding.
- In common with other SIDS, conventional economic and social development indicators - e.g. GDP per capita (high middle income), human development index (96th of 188 countries in 2016) - do not capture climate- and capacity-related vulnerabilities
- In "Hurricane Alley": Repeated impact of severe weather events (e.g. David 1979, Erika 2015) and general susceptibility to climate-related disease, e.g. vector-borne disease, gastroenteritis

Slide 4

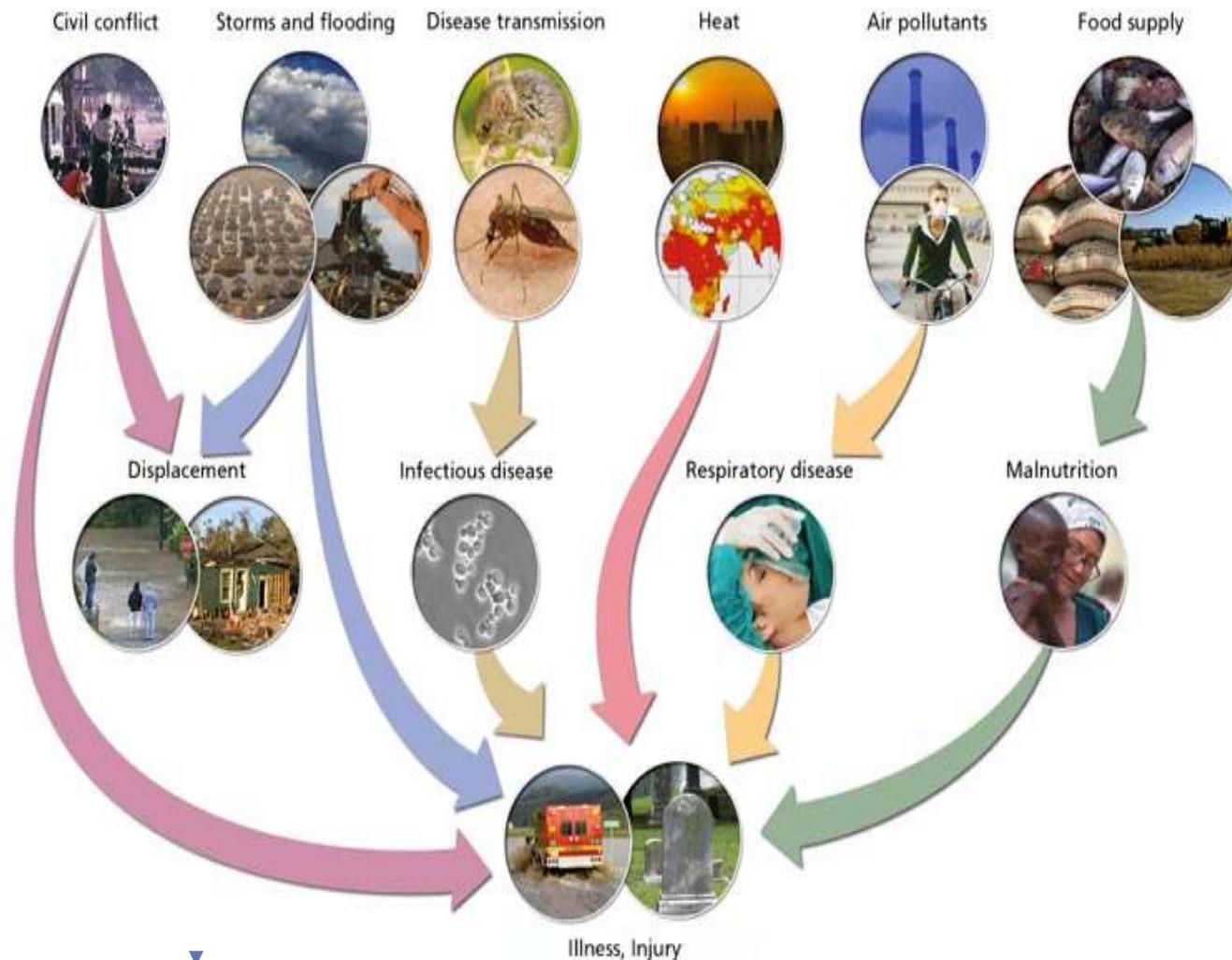
CA2

I reworked this slide to get to the point about vulnerabilities immediately

Caroline Allen, 10/16/2018

General impact of climate on health

Climate Change Effects on Human Health



Slide 5

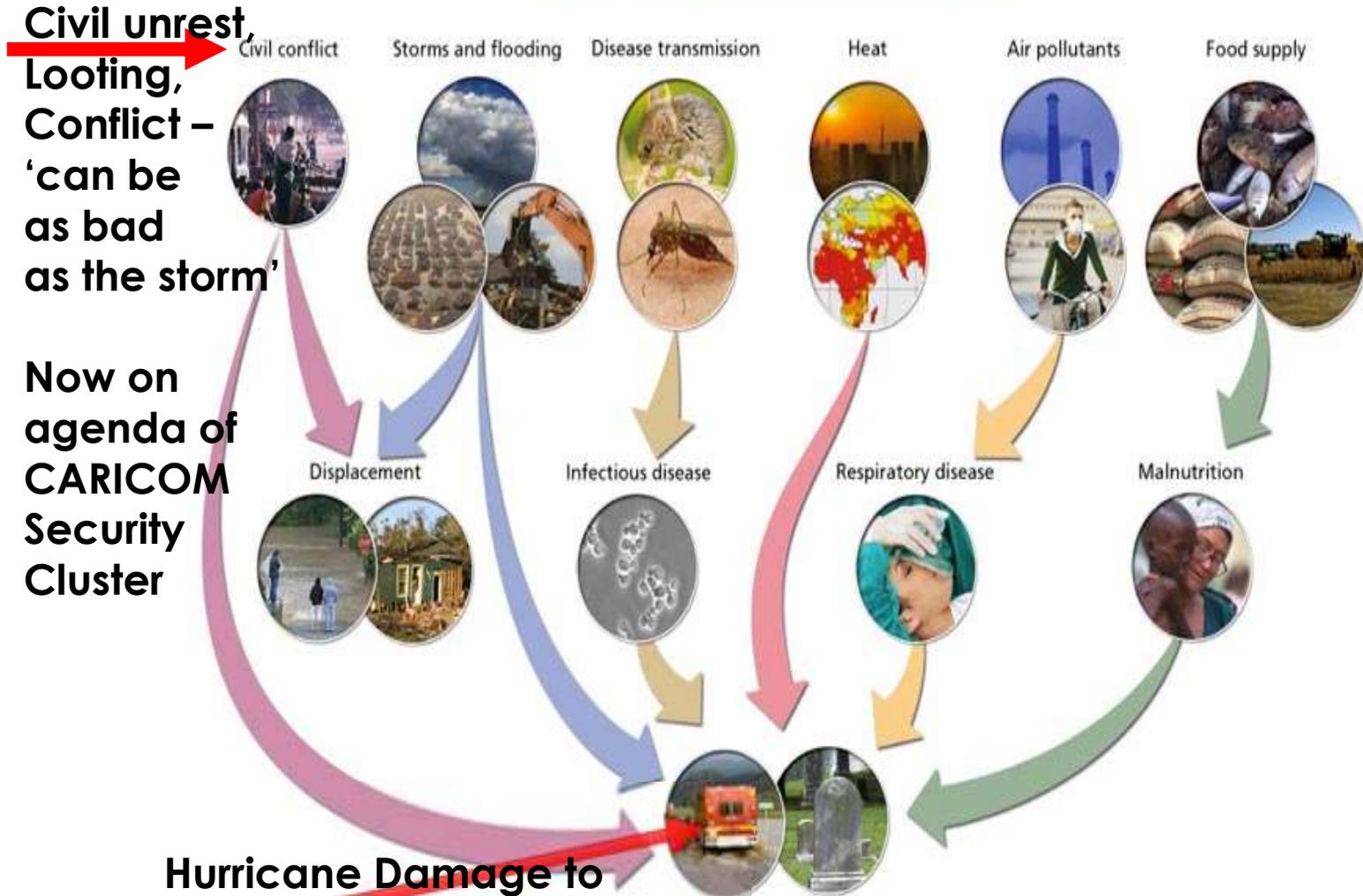
CA4

I moved this to near the beginning as it frames the whole presentation

Caroline Allen, 10/16/2018

General impact of climate on health

Climate Change Effects on Human Health



Civil unrest, Looting, Conflict – ‘can be as bad as the storm’

Now on agenda of CARICOM Security Cluster

Hurricane Damage to official vehicles can severely hinder response and recovery (BVI)

Slide 6

CA4

I moved this to near the beginning as it frames the whole presentation

Caroline Allen, 10/16/2018

Initiatives in Dominica

- ▣ 1994- ratified the UN Framework Convention on Climate Change (UNFCCC)
- ▣ 2012- Second National Communication on Climate Change of Dominica
- ▣ Pilot adaptation measures under the Special Program on Adaptation to Climate Change (SPACC).
- ▣ Implemented a Sustainable Land Management (SLM) project.
- ▣ April-July 2017: Spatio-temporal probabilistic forecasts for *Aedes aegypti* proliferation (with CIMH and SUNY, funded by CARICOM under the programme for Building Regional Climate Capacity in the Caribbean (BRCCC)).

CA1

Slide 7

CA1

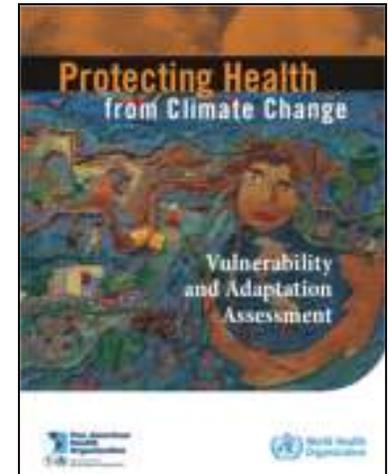
Did these arise from the 2012 communication? What is the status of these initiatives now?

Caroline Allen, 10/16/2018

Vulnerability and adaptation assessment (2016)

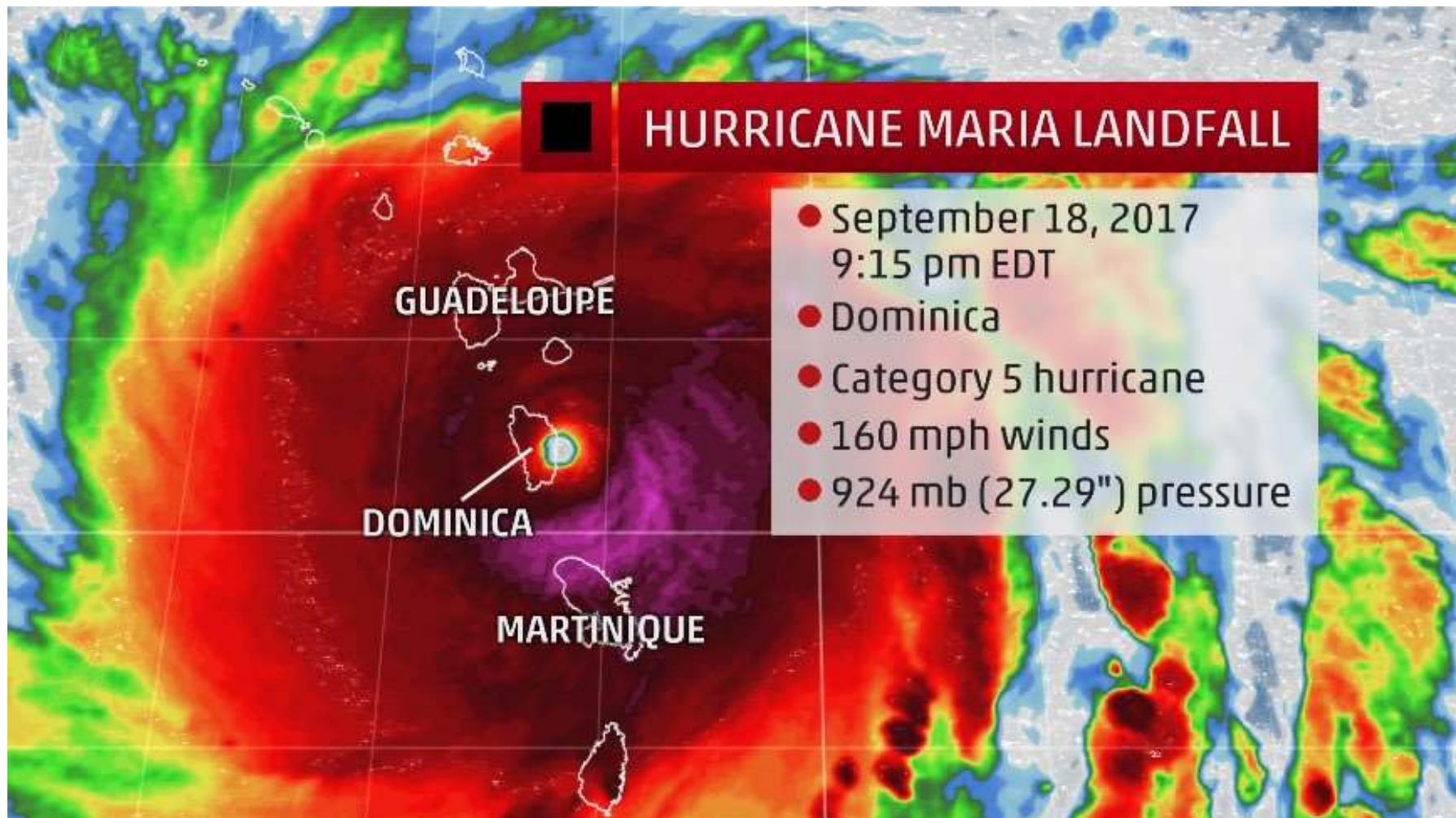
Informed by the WHO/PAHO Assessment Guidelines **Priority areas examined in the assessment**

1. Vector-borne diseases
2. Waterborne and water-related diseases
3. Foodborne diseases
4. Food Security
5. Extreme weather events (Case Study: Tropical Storm Erika)



https://en.wikipedia.org/wiki/Tropical_Storm_Erika#Dominica

Severe weather events: Case study of impact of and responses to Hurricane Maria



STATE OF PUBLIC HEALTH IN THE CARIBBEAN 2017: CLIMATE AND HEALTH

AVERTING AND RESPONDING TO AN EVOLVING HEALTH CRISIS

CARPHA 2019 (in draft)

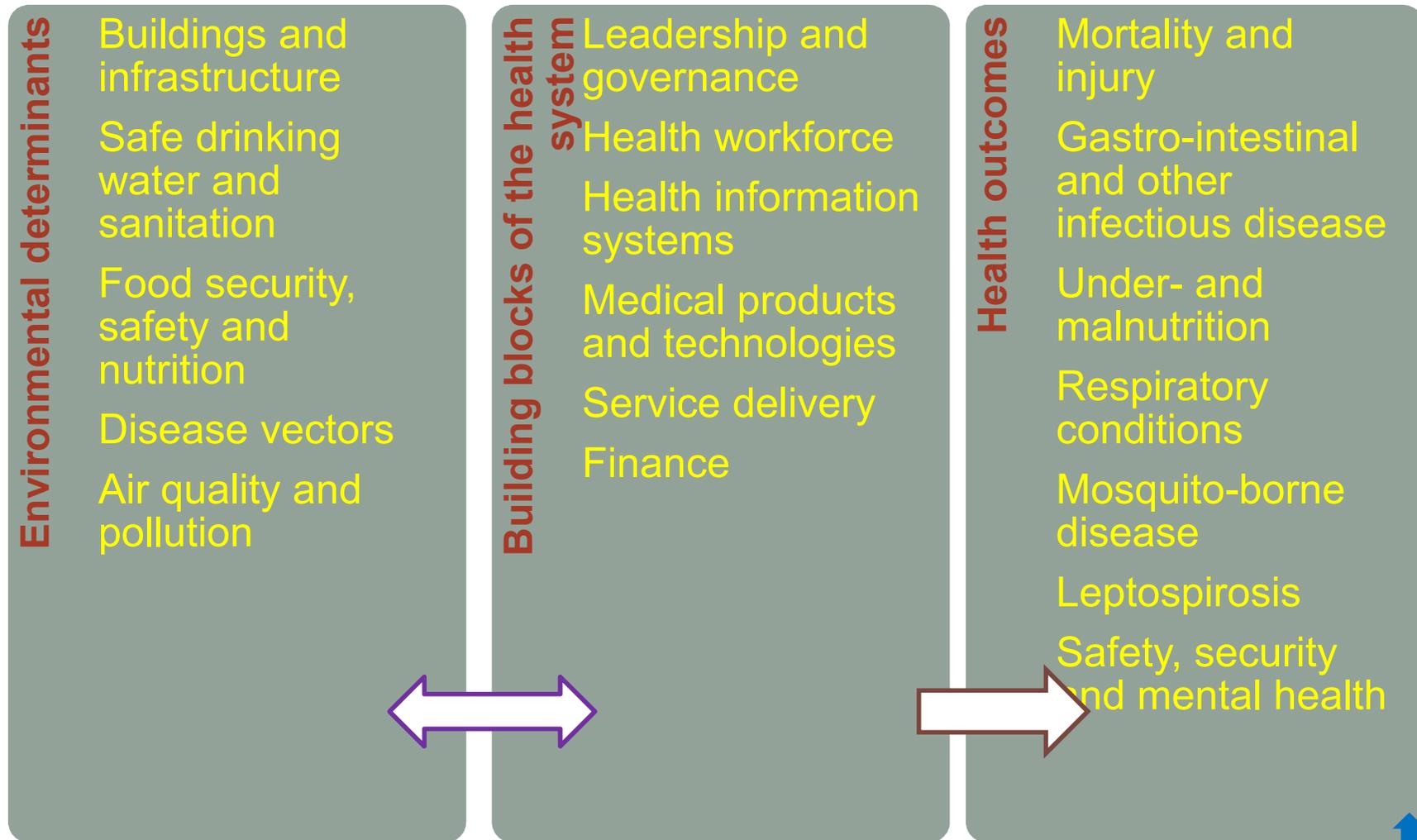
Consultants: Caroline Allen and Renee West

Oversight Committee:

Chair: Dr David Johnson, Chief Medical Officer, Dominica

Reps from CARICOM, CARPHA, CCCCC, CERMES, CIMH, NIEHS, WHO, PAHO, UWI

Impact of severe weather events



Source: CARPHA State of Public Health Report 2017 on Climate and Health

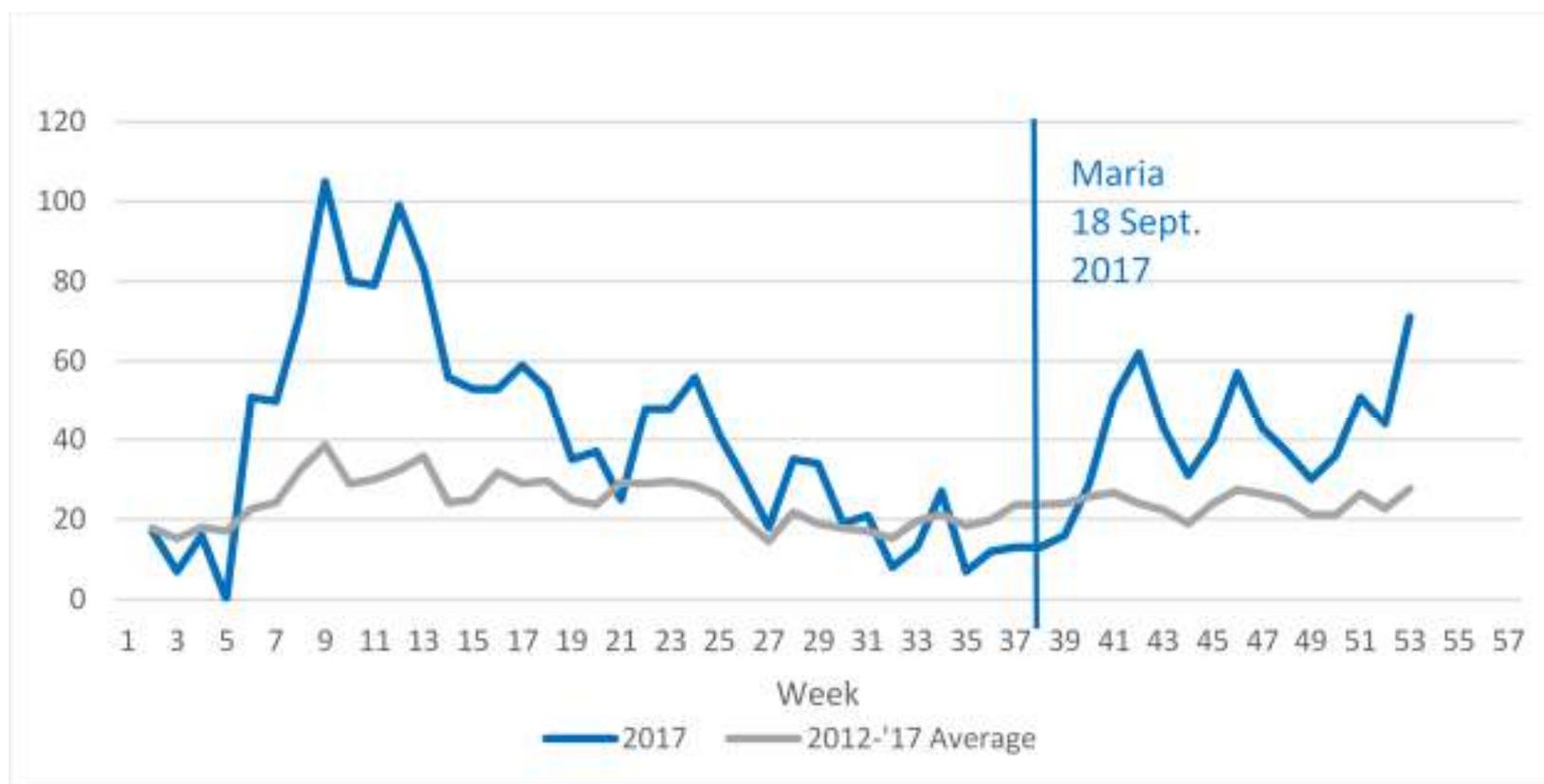
Environmental determinant: Safe drinking water and sanitation



Safe drinking water and sanitation

- Cuts in water supply and risk of exposure to sewage, as water and sewage pipes were broken.
- In first few days, hygienic conditions in shelters for displaced people were poor, with no potable water, very little food and few toilet facilities.
- Forest coverage and shade of watersheds was reduced as 80 to 90% of trees were defoliated. Led to algal blooms.
- Accumulation of waste. Garbage collection vehicles, equipment and roadways damaged/ destroyed.
- By the end of 2017, estimated 1.5 million cubic metres of debris had been created by Hurricane Maria (Source: Dominica Solid Waste Management Corporation)

Number of gastroenteritis cases per week in Dominica in 2017 (Hurricane Maria), compared with six-year average 2012-17



Source: Syndromic data reported to CARPHA

Note: The increased number of cases in early 2017 was a common pattern across Caribbean countries but the increase after September 18 was not

Safe drinking water and sanitation

- Water, Sanitation and Health (WASH) programme: collaboration between UN agencies (led by PAHO and UNICEF) and Ministry of Health and the Environment:
 - Community mobilization on trucks with loudhailers and in community centres– to clean up and use safe water/ handwashing
 - Mass distribution of water and sanitation tablets
 - Education and supplies to clean up mould
 - Testing of water quality restored with CARPHA/CARIPHLN
- Dominica Solid Waste Management Company launched an initiative to de-centralize solid waste management
 - Avoided risk of trucks/ equipment being unable to reach communities
 - Increased access to local dumps with community management and technical assistance

Environmental determinants: buildings and infrastructure



<https://www.theguardian.com/global-development/2017/nov/01/it-feels-like-dominica-is-finished-life-amid-the-ruins-left-by-hurricane-maria>

Buildings and infrastructure

- Housing damage amounted to 38% of all the costs of hurricane damage
- Of the 10 parishes, 7 had non-functional health facilities
- Of the 50 health facilities, 13 (26%) were not functional, of which one was completely destroyed by a landslide.
- A further 15 (30%) were partially functional, with either no water or no electricity.
- Bed capacity at the island's only main Hospital was decreased by 95 beds(42.2%).
- Severe damage; and restoration of laboratory at PMH – role of CARPHA, CARIPHLN

Damage to Princess Margaret Hospital Laboratory



RESTORATION OF SERVICE



Building blocks of the health system: health workforce

- Staff stranded could not access hospital for days and weeks put strain on few staff who were on duty at time of hurricane
- Health care workers had to deal with trauma and damage to their homes and communities
- The hurricane highlighted existing staff shortages caused by migration of health care workers
- Dominica State College training infrastructure damaged
- Ross University had provided technical support to the government but moved out of the country following the hurricane
- Responses included provision of greater job security, allowances and training of community members as Health Aides
- Community Mental Health Team trained professionals outside the health sector in mental health first aid



Conclusion

“We can’t change our geographical location but we can build resilience to climate change” David Johnson, 2016

Building back better

Must address:

Environmental determinants of health (not just infrastructure)

Social determinants of health: multisectoral approach

Building blocks of the health system: Information systems, HRH, Training (incl VR), \$ Fund, SMART facilities, Medicines

Health outcomes

Region-wide, sustained public education, e.g.,

A “Get The Message” 2.0 SMS Campaign on Climate & Health

Current responses

- Review of health policies, strategies and legislation
- Reassessment of Primary Care services
- Integration of Climate Change and Disaster Management
- Health Adaptation Plan (part of a National Adaptation Plan)
- The digitization of health and climate data
- Self-sustainable health facilities (particularly remote facilities)
- Building upon the Smart Hospital Initiative to ensure that health care facilities, Shelters, schools are **Climate Smart**