Caribbean Climate and Health Responders Course

Healthcare sector mitigation and adaptation – June 1st, 2022

Judith Harvey, Dana van Alphen, Clemens Buter
PAHO Smart Healthcare Facilities in the Caribbean Project

EarthMedic EarthNurse
Promoting Health of People and Planet Together

COLUMBIA
MAILMAN SCHOOL OF PUBLIC HEALTH
GLOBAL CONSORTIUM ON CLIMATE AND HEALTH EDUCATION

Caribbean Institute for Meteorology and Hydrology
CIMH

Learning objectives for this session

A. Apply the concepts of mitigation of and adaptation to climate change in the healthcare sector and explore examples of how healthcare systems can perform both.
B. Identify ways in which health care facilities can become more resilient in the face of increasingly severe and/or frequent climate-related weather extremes. Sensitization to the PAHO SMART Hospital concept and standards
C. Use emergency planning skills to plan for and respond to climate-related extreme weather events, including workforce surge needs, and distinguish the roles of and interactions between agencies involved in emergency care.
D. Describe how health professionals can partner with health care institutions, professional organizations, and advocacy groups to reduce health care sector greenhouse gas footprint.

Learning Objective A

Apply the concepts of mitigation of and **adaptation** to climate change in the healthcare sector and explore **examples** of how healthcare systems can perform both

Healthcare systems are extensive.
The focus here will be on **health infrastructure** and the **health workforce**

Adaptation to climate change in the health sector

Let us look at adaptation in different contexts:

- The staff at health facilities
- Individually owned practices
- Hospitals and health centers
- Institutions including Homes for aged, children, mentally ill
- Medical stores

Central Medical Stores, Dominica after Maria

Photo credit: PAHO Technical Consultant Shalini Jagnarine-Azan

Adaptation to climate change in the health sector

Common themes:

- Building structure
- Building services including electricity, water, communications, HVAC
- Other non-structural aspects of the building envelope and grounds
- Functional readiness of the staff
- Each facility is part of a network. Linkages are important during emergencies

Defining functional resilience

George Walker, Chairman ISO TC59/SC15 Performance Description of Houses, defines Resilience

"three parts, one defining the **object**, including its **scale**, which is being described as resilient, one specifying the **impact** type, including its **magnitude** for which it is being applied, and one defining **which form of resiliency** is being described and its **measurement**."

Taken from his "Discussion Paper on Resilience and International Standardisation"

Defining system resilience

George Walker, Chairman ISO TC59/SC15 Performance Description of Houses, defines Resilience

"three different forms of system resilience,

1. the ability to resist an adverse impact,
2. the ability to recover from an adverse impact, and
3. adaptive capacity to cope with a changing environment"

Taken from his "Discussion Paper on Resilience and International Standardisation"

Learning Objective B

Identify **ways** in which health care facilities can become more resilient in the face of increasingly severe and/or frequent climate-related weather extremes. Sensitization to the PAHO **SMART** Hospital **concept and standards**

Resistance or resilience?

Introducing the Smart Hospitals Project:

- "The project aims at both **resistance** and **resilience**.
- Critical facilities which are required to operate seamlessly during and immediately after severe natural hazard events must be resistant. Resilience is not sufficient.
- For those facilities which need to be able to recover quickly after severe natural hazard events, resilience may be sufficient."

Quoting The Hon Tony Gibbs CHB FREng: Check Consultant on the Smart Hospitals Project

Health staff can become more resilient

Some key words:

- Climate-related extreme weather events, natural hazards and disasters

To preserve lives and property requires:

  - Accurate forecasts and warnings that are understood
  - Knowledge of how to prepare against the hazard

The magnitude of the event is important – How “extreme” is the occurrence?

Adaptation also encompasses evacuation or retreat from the threat

Reference: World Meteorological Organization link accessed 15th May 2022.
https://public.wmo.int/en/our-mandate/focus-areas/natural-hazards-and-disaster-risk-reduction

Functional preparedness measures

Smart Hospitals Training:

- Contingency Planning
- Simulations

Team building and
Provision of supplies / equipment
for emergency use

Mon Repos Wellness Centre

CONTINGENCY PLAN

Health infrastructure can become more resilient

Examples

- Building structure
- Building services including electricity, water, communications, HVAC
- Other non-structural aspects of the building envelope and grounds

Photo credits: St Lucia Ministry of Health Media and Communications Department

Form of resiliency and its measurement

Smart Hospitals Toolkit:

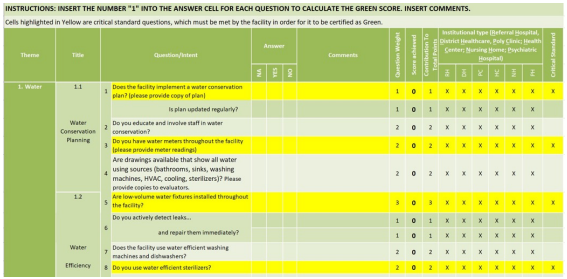
- Hospital Safety Index
- Green checklist
- Baseline Assessment tool

How to assess your current status

Apply the Hospital Safety Index

Apply the Green Checklist and Baseline Assessment Tool

Smart rating and recommendations for retrofitting



INSTRUCTIONS: INSERT THE NUMBER "1" INTO THE ANSWER CELL FOR EACH QUESTION TO CALCULATE THE GREEN SCORE. INSERT COMMENTS.

Cells highlighted in Yellow are critical standard questions, which must be met by the facility in order for it to be certified as Green.

Theme	Title		Question/Intent	Answer NA	Answer YES	Answer NO	Comments	Question Weight	Score achieved	Contribution To Total Score	Institutional type (Referral Hospital, District Healthcare, Poly Clinic; Health Center; Nursing Home; Psychiatric Hospital) PH	DH	HC	NH	PH	Critical Standard
1. Water	1.1	1	Does the facility implement a water conservation plan? (please provide copy of plan)					1	0	1	X	X	X	X	X	X
	Water Conservation Planning		Is plan updated regularly?					1	0	1	X	X	X	X	X	
		2	Do you educate and involve staff in water conservation?					2	0	2	X	X	X	X	X	
		3	Do you have water meters throughout the facility (please provide meter readings)					2	0	2	X	X	X	X	X	X
		4	Are drawings available that show all water using sources (bathrooms, sinks, washing machines, HVAC, cooling, sterilizers)? Please provide copies to evaluators.					2	0	2	X	X	X	X	X	
	1.2	5	Are low-volume water fixtures installed throughout the facility?					3	0	3	X	X	X	X	X	X
		6	Do you actively detect leaks...					1	0	1	X	X	X	X	X	
			and repair them immediately?					1	0	1	X	X	X	X	X	
	Water Efficiency	7	Does the facility use water efficient washing machines and dishwashers?					2	0	2	X	X	X	X	X	
		8	Do you use water efficient sterilizers?					2	0	2	X	X	X	X	X	X

Examples


Making Healthcare Facilities in the Caribbean
S M A R T
A platform for integrating Disaster Risk Reduction, Climate Change Adaptation, Environmental Management, and Conservation Efforts
RESILIENCY
SAFE
Sound Roof & Foundation
Improved Security & Signage
Secured Equipment & Fuel Storage
Protected & Efficient Doors and Windows
Good Drainage
Back-up Power
Water Reserve
Disaster Management Plans
Comprehensive Maintenance Planning
Disability Access
SMART HOSPITAL
Hospital safety Index – Score A
Green checklist – Scores above 70%
ENVIRONMENTALLY SOUND
GREEN 70+
Water Efficiency
Waste Minimization & Management
Pollution Reduction
Rain Water Harvesting
Alternative Power Using Renewable Energy
Efficient Lighting & Cooling
Improved Indoor Air Quality
SUSTAINABILITY
SMART
Reduced Downtime
Resilient Structure
Reduced Operating Cost
Improved Safety
Satisfied Patients and Staff
Environmentally Sound Operations
Improved emergency care and services for the community
Pan American Health Organization
World Health Organization
Americas
UKaid
Implemented by: Pan American Health Organization (PAHO/WHO)
Funded by: the UK Department for International Development (DFID)
SMART HOSPITAL
SAFE + GREEN = SMART
Smart Healthcare Facilities in the Caribbean
Providing safer greener health facilities to deliver care in disasters

Zoom poll question 1

The PAHO Smart Hospital Program aims to make healthcare facilities

a) Safe
b) Green
c) Well maintained
d) All of the above

SMART = SAFE + GREEN + WELL MAINTAINED

- Health care facilities are environmentally friendly and **resistant or at least resilient**;
- A70 standard for Resistance
- Scores associated with Resilience
- Retrofit and Maintain the facility
- Re-assess the facilities every 5 years

Takeaway

Study your surroundings at work and identify aspects of the building infrastructure or the operations that are vulnerable to climate related hazards.

EarthMedic EarthNurse
Promoting Health of People and Planet Together

COLUMBIA
MAILMAN SCHOOL OF PUBLIC HEALTH
GLOBAL CONSORTIUM ON CLIMATE AND HEALTH EDUCATION

Caribbean Institute for Meteorology and Hydrology
CIMH

Learning Objective C

Use emergency planning skills to **plan for** and **respond to** climate-related extreme weather events, including workforce surge needs, and distinguish the roles of and interactions between agencies involved in emergency care.

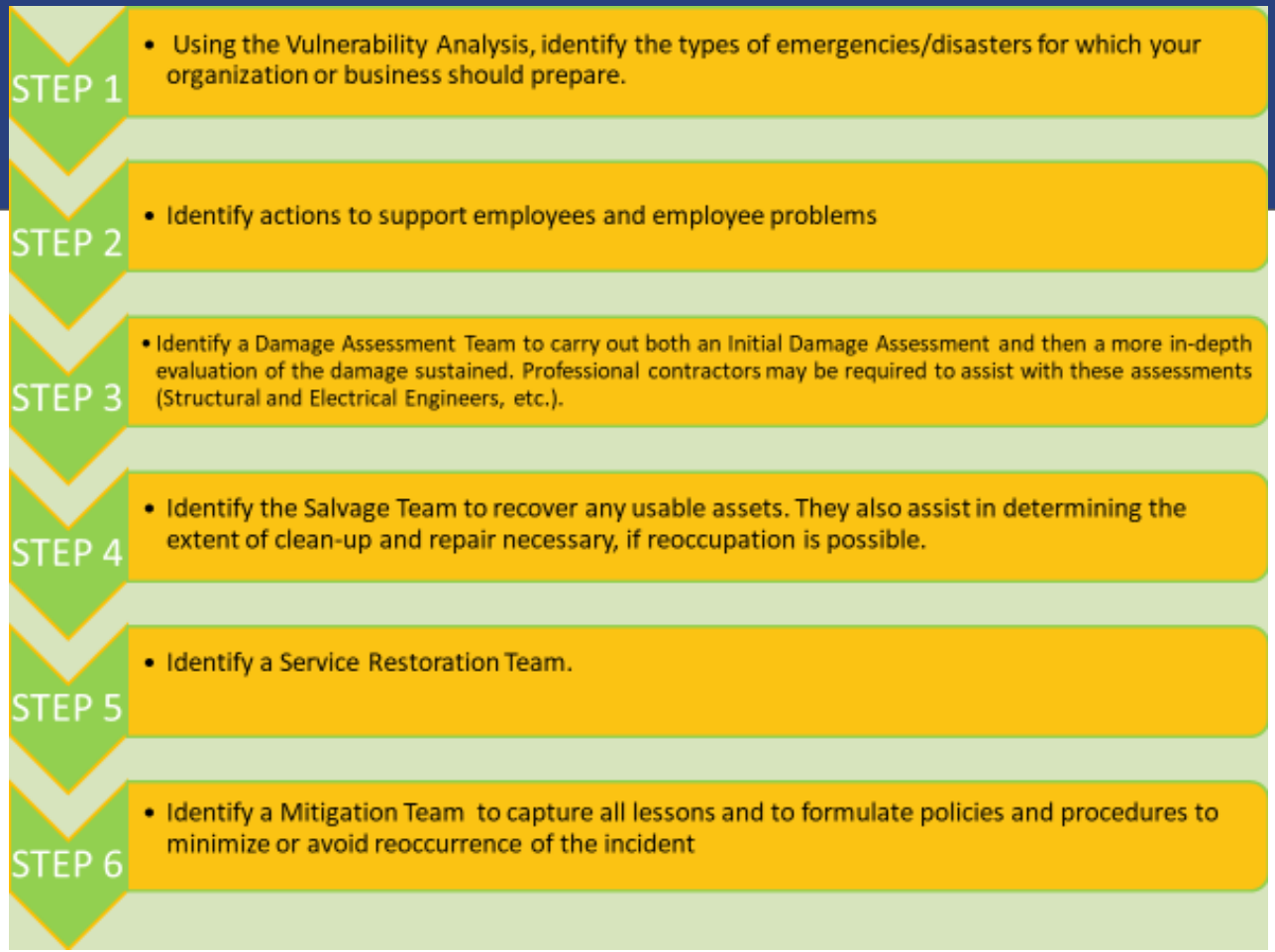
Resilience in the context of Emergency Planning

- Response focuses on immediate needs
- Planning includes recovery phase
- Build back better implies:
  - Repair to a higher standard of resilience
  - Rebuild new and SMART

Diagram taken from: PAHO Smart Technical Implementation Team meeting 2019 presentation by Sharleen DaBreo-Lettsome, BVI DDM

Disaster management cycle

- Mitigation
- Preparedness
- Response
- Recovery



Taken from PAHO Smart Hospitals Contingency Planning Course by Sharleen DaBreo-Lettsome and Sheniah Armstrong, BVI DDM

Health systems and disaster management

- Following a disaster, the focus is on acute care needs and specialist interventions; chronic and pre-existing conditions may be neglected

- Developing adaptable and resilient health care systems requires:
  - **Surge Capacity**: Health care systems prepared to cope with large numbers of patients.
  - **Flexibility in Health Care Systems**: Flexibility to deliver different functions
  - **Continuity Planning**: Plans to maintain the continuity of health sector operations, e.g., identifying priority services and building community linkages for a coordinated response

Taken from PAHO Smart Hospitals Contingency Planning Course by Sharleen DaBreo-Lettsome and Sheniah Armstrong, BVI DDM

Workforce surge needs

Disaster during working hours – employees can't leave

- How will they be accommodated?

Disaster occurs after-hours – do employees report to work?

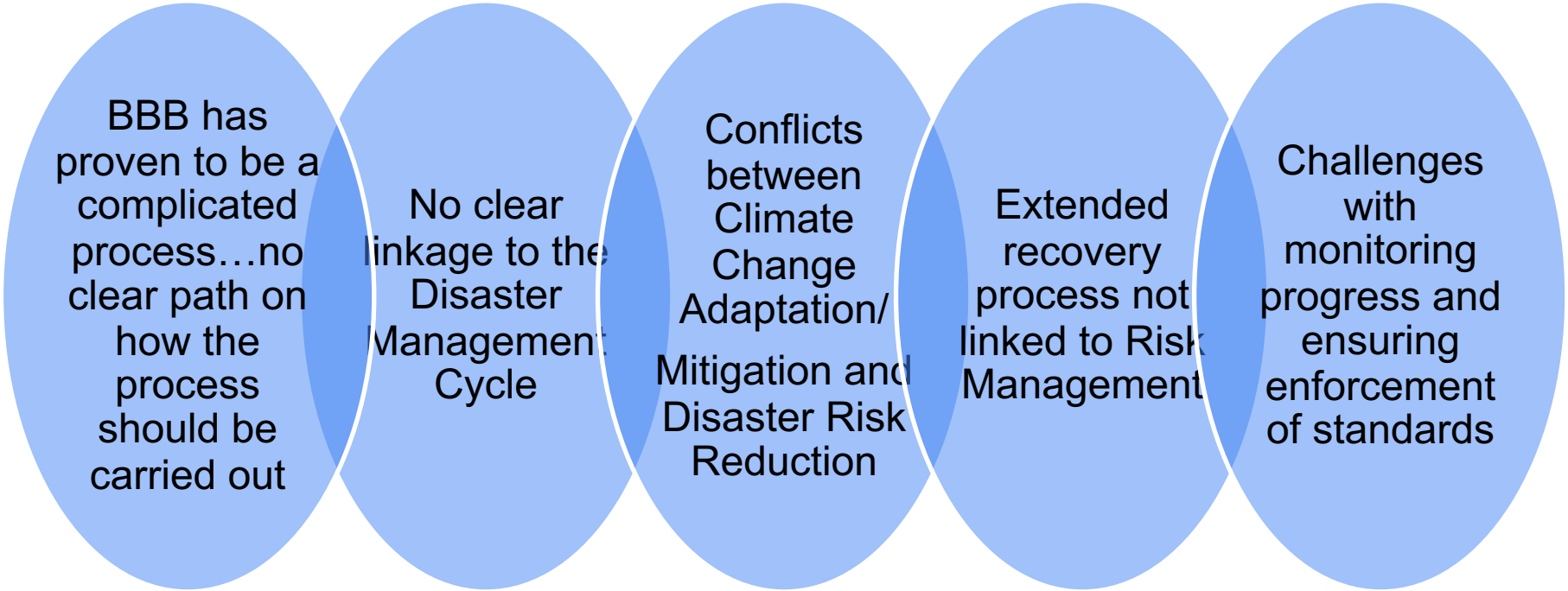
- What if the facility or work area has sustained damage?
- What if their home is damaged and they need to relocate or do repairs?

Expanding the capacity of the existing workforce includes:
Cancelled vacation time, lengthened working hours, incorporating new staff.

Volunteers, people from overseas, students, retired practitioners

- How to manage and coordinate them
- Attention to the mental wellness of the team members

Problems with trying to Build Back Better (BBB)



Source: PAHO Smart Technical Implementation Team meeting 2019 presentation by Sharleen DaBreo-Lettsome, BVI DDM

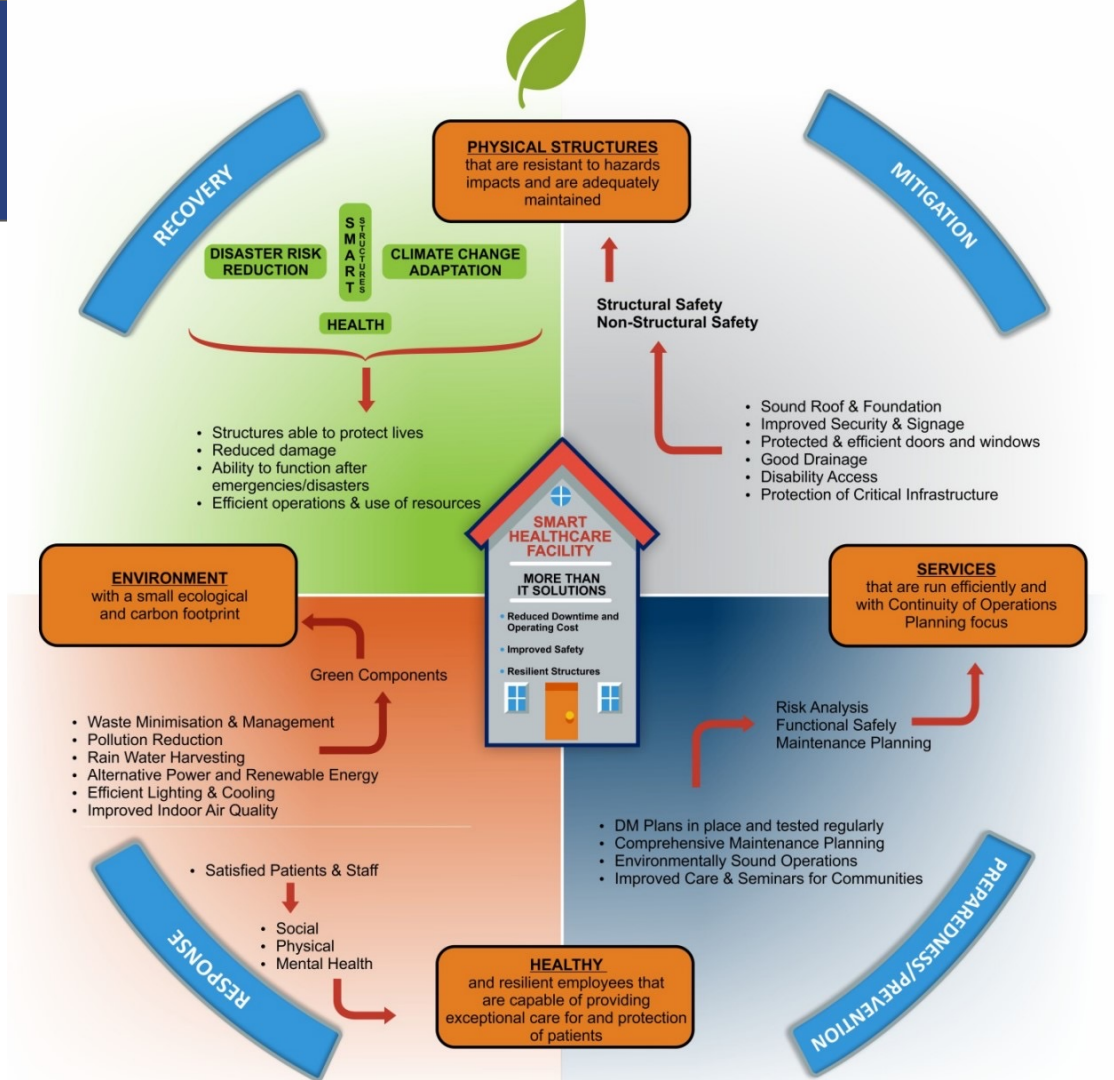
Plan for & respond to emergencies

Reading assignment / reference:

A Conceptual and Adaptable Model of disaster management in the Caribbean

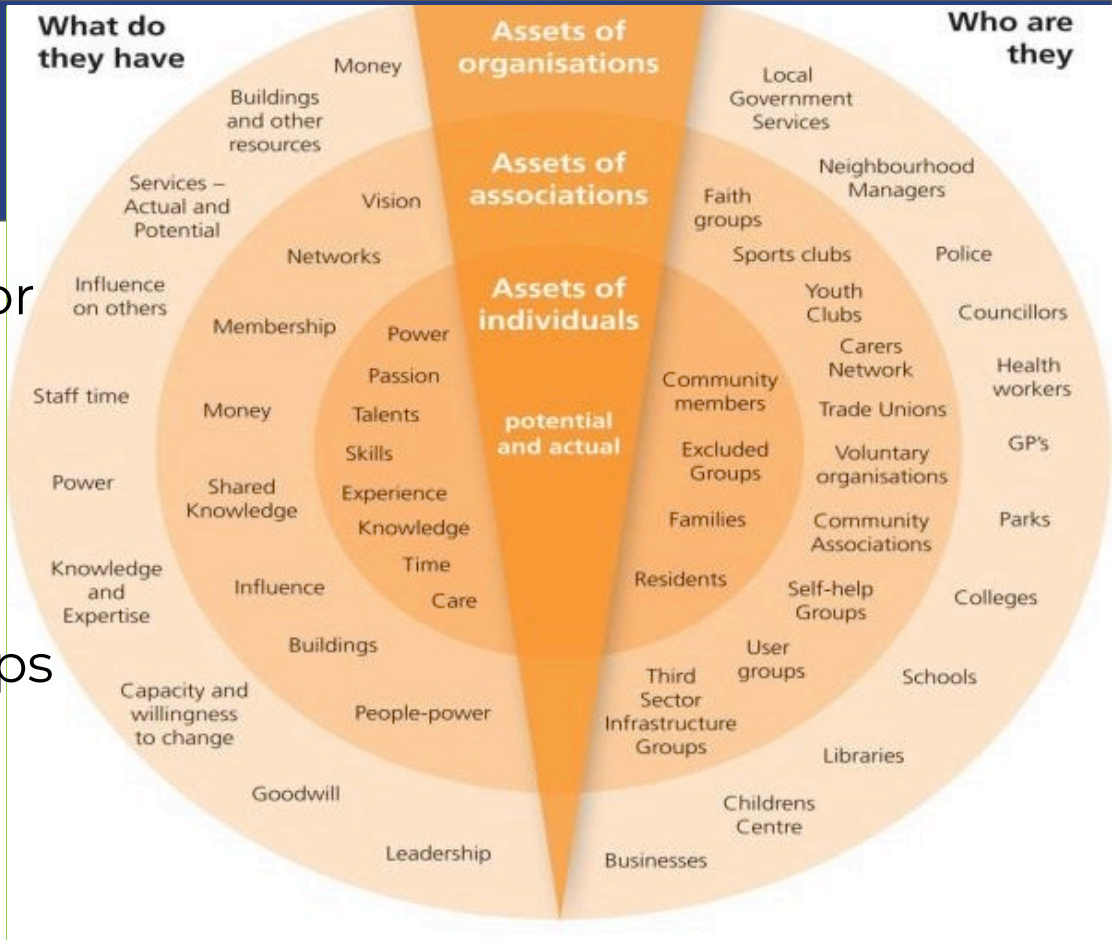
Prepared by S. DaBreo-Lettsome for PAHO, 2018

https://www.paho.org/en/documents/conceptual-and-adaptable-model-disaster-management-caribbean



Agencies involved in emergency care

- Health disaster coordinator
- Health disaster risk management committee
- National emergency Management organisation
- NGOs and volunteer groups



Sources: PAHO Smart Hospitals Contingency Planning Course by Sharleen DaBreo-Lettsome and Sheniah Armstrong, BVI; Implenting the PAHO Plan for Disaster Risk Reduction 2016-2021 by Dr Glensford Joseph, SLU

References

PAHO Smart Hospitals Toolkit

https://www.paho.org/en/health-emergencies/smart-hospitals/smart-hospitals-toolkit

Penn State University College of Earth and Mineral Sciences

https://www.e-education.psu.edu/geog30/node/374

World Meteorological Organisation

https://public.wmo.int/en/our-mandate/focus-areas/natural-hazards-and-disaster-risk-reduction

FEMA Natural Hazards Part 2

https://www.fema.gov/pdf/areyouready/natural_hazards_1.pdf

George Walker. Discussion paper on resilience and international standardization.

Sharleen DaBreo-Lettsome and Sheniah Armstrong. PAHO Smart Hospitals Contingency Planning Course. BVI DDM

A Conceptual and Adaptable Model of Disaster Management in the Caribbean. 2018. Prepared for PAHO by S. DaBreo-Lettsome. https://www.paho.org/en/documents/conceptual-and-adaptable-model-disaster-management-caribbean

Acknowledgments

- Technical Implementation Team on the Smart Hospitals Project Phase 2
- Ministry of Health, Wellness and Elderly Affairs, St Lucia
- UK Government Foreign Commonwealth and Development Office