Caribbean Health Climatic Bulletin

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This bulletin is a joint effort between the CARPHA, the PAHO and the CIMH to help health professionals identify and prepare for favourable or inclement climate conditions in the Caribbean. Use of this information can help to inform strategic and operational decisions related to the management of health care systems.

What are the Key Climate Messages for May to July?

- Heat stress will become a concern as of May when temperatures and humidity begin to increase. In addition, there is the possibility of heat waves in **Belize** and **Trinidad** in May during dry spells and in July in **The Bahamas** and the **Greater Antilles**.
- Along with the heat, we expect the wet season to start in May or June. Rainfall and water availability are likely to increase, along with some concern of flash flooding. Environmental conditions are becoming more conducive to mosquito proliferation. Finally, there is a peak in UV radiation on sunny days and Saharan dust intrusions at this time of year.

What are the Health Implications for May to July?

Respiratory Illness

- There may be an increase in symptoms in persons with **asthma**, as well as persons with **allergies to dust** as episodes of Saharan dust incursions into the Caribbean will be frequent.
- The surface dryness before the wet season may lead to greater levels of dust in the atmosphere.

- There may be an increase in symptoms for persons with **allergies to pollen** until the dry season comes to an end.

- There may be increased risk of **Legionella** growth in water systems due to higher temperatures.

- There may be increased risk of **ENT** (ear, nose and throat) infections due to contact with flood waters contaminated with faeces.

Gastrointestinal Illness

- Cases of **gastroenteritis** may increase in frequency. Increased temperatures may accelerate proliferation of pathogens.

- In the event of flash floods, contamination of food and water supplies might occur.

Physical Injury or Death

- There is the possibility of persons suffering **injury or death**. Flash flooding may lead to cases of drowning, persons being swept away by flood waters, physical trauma by debris in the flood water, possible land slides, and electrocution.

Non-communicable Diseases

- Morbidity from **heat stress** is likely to increase, especially in persons with **pre-existing chronic non-communicable disease**.
- There is an increasing risk of **dehydration**, possibly leading to apathy, general weakness, dizziness, fainting, and kidney failure.

- Increased temperatures may lead to **heat rash** in vulnerable persons, including babies, young children, the obese and the elderly.

- There is an increased risk of **skin damage**, due to the very intense UV radiation at this time of year on sunny days.

- There is the possibility of **skin infections** due to contact with flood waters contaminated with faeces.

Mental Health and Well-Being

- There may be increased mental stress, and resulting violence, due to higher temperatures.

- **Mental stress** may be brought on by loss of property due to flash flooding.

Vector-Borne Illness

- With the increasing heat and return of the wet season, there may be an increase in cases of vector borne diseases such as **Dengue**, **Chikungunya**, **Zika** and **Yellow Fever**.
- The increased temperatures may shorten the generation time for mosquitoes and the maturation time for pathogens to fully develop inside the mosquito.

- In addition, increased rainfall may create more breeding places for mosquitoes.
- Some mosquito eggs laid last year may still be present in breeding areas and may become activated by settling rain water, thus later contributing to increased mosquito populations.
- However, note that in case of flash floods, flood waters may sweep away mosquito eggs, larvae and pupae, potentially reducing the number of cases.

- There is also the possibility of the impact of new and re emerging diseases related to *Aedes aegypti*, for example, **Mayaro Virus Disease**.

- There may be mosquito proliferation during drought in areas where water is stored in containers without protective mesh.

- During the wet season, there is increased risk of **Leptospirosis** due to human contact with flood waters contaminated with the urine of infected animals, as well as food or soil exposed to these contaminated flood waters.

Contact Information

For More Information Contact:

Mrs. Shermaine Clauzel
Email: clauzesh(at)carpha.org

Dr. Avery Hinds
Email: hindsave(at)carpha.org

Ms. Sally Edwards
Email: edwardss(at)paho.org

Mr. Adrianus Vlugman
Email: vlugmana(at)paho.org

Mr. Wayne Depradine
Email: wdepradine(at)cimh.edu.bb

Dr. Cédric J. Van Meerbeeck
Email: cmeerbeeck(at)cimh.edu.bb

For More Health Information:

CARPHA
http://carpha.org

PAHO
http://www.paho.org

For More Climate Information:

Caribbean Regional Climate Centre (RCC)
http://rcc.cimh.edu.bb

More on Climate

Looking Back: January to March

Temperature

- Most countries were warmer than average, especially in The Bahamas, W Cuba and Guadeloupe (more than 0.75°C above average).

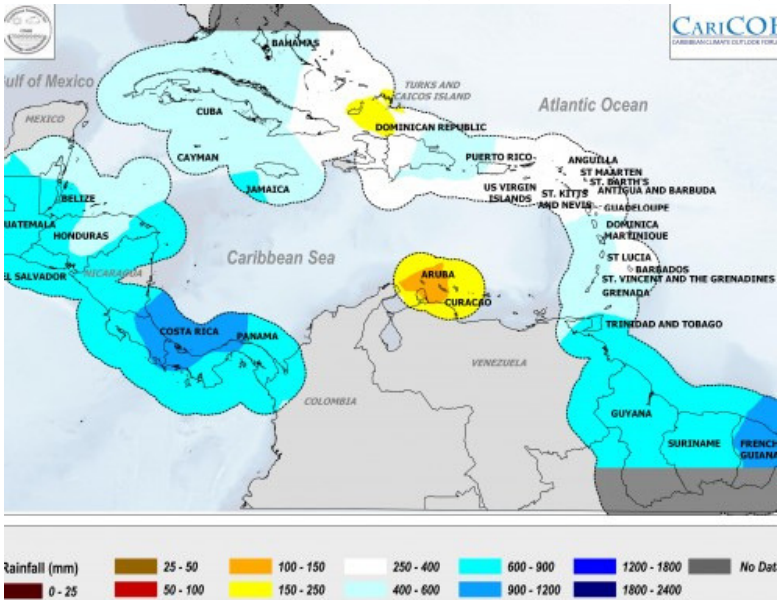
Rainfall

- In January, SE Barbados, N Martinique were very dry while S Guyana, SW Suriname were very wet.
- In February, Antigua, NE Dominica, St. Lucia and St. Vincent were very dry. The interior Guianas were very wet.
- In March, Dominica, N Dominican Rep., interior of Guianas, NE Puerto Rico, Tobago and US Virgin Islands were very wet.

What do we Usually Expect for May to July?

Rainfall

- Typical rainfall patterns for this transition period between the dry and the wet season are illustrated in the Figure below (Historical Averages). Click on the image to see a larger map.



Temperature

- Temperatures tend to plateau between May and October, which constitutes the warmer half of the year.

How will May to July Look This Year?

Temperature

- We forecast that nighttime and daytime temperatures in the Caribbean will generally be higher than usual, or usual for this time of the year, with the possible exception of the daytime temperatures in the Leeward Islands.

Rainfall

- We forecast that rainfall totals will be higher than usual, or usual in The Bahamas, Belize, Cayman, Cuba and the W Guianas, but drier than usual or usual in the ABC Islands, Belize, S Hispaniola and US Caribbean Territories. Not much can be said for other locations at this time.

Wet Days and Wet Spells

- We expect decreasing surface dryness and increasing water availability as we are moving into the wet season, due to an increase in wet days and wet spells towards June. Flash flooding becomes a concern, especially in the Guianas.

Drought

- Short-term drought has developed in northern Bahamas and St. Barth's, but is not expected to become a major concern. Long term drought is likely to continue to improve in Cayman and improve in Belize. It remains possible in Trinidad & Tobago, and is also possible in Antigua, St. Kitts and St. Lucia.

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