

# Tourism Health Information, Monitoring and Response Surveillance System (THMRS)

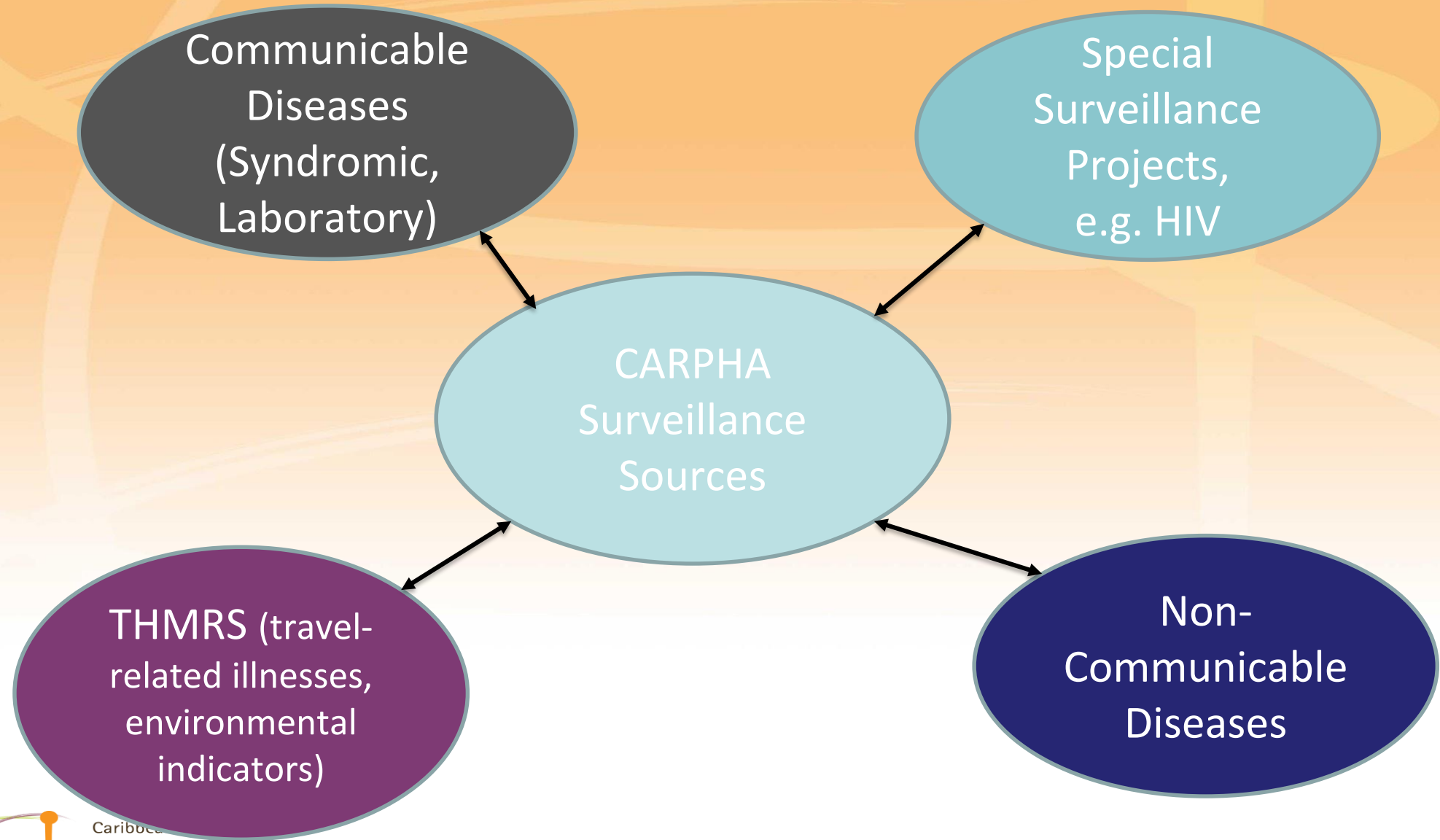
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Tourism & Health Programme and Foodborne Diseases Unit  
CARPHA

*Regional Tourism and Health Stakeholders Workshop, Miami, FL*  
Wednesday October 4, 2017



Preventing disease, promoting and protecting health





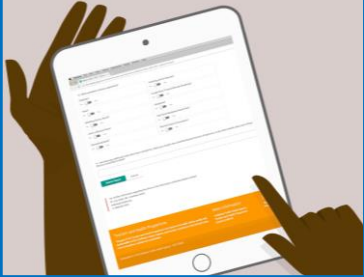


**Partners:**  
International public health and tourism agencies

Caribbean Public Health Agency  
Tourism and Health Programme



Tourism and Health Information System



**Tourism & Health Information System (THIS) web app for syndromic surveillance:**

- stay-over facilities (hotels)
- Self-reporting

## The Tourism Health Information, Monitoring and Response System (THMRS)



**Environmental Indicators**



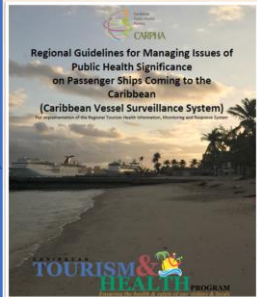
**Media Reports**



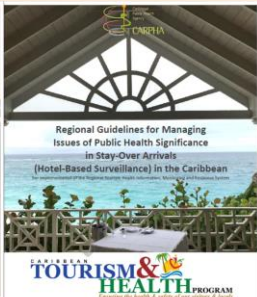
**CARPHA Laboratory Data**



**Passenger Ship Surveillance Data**



Regional Guidelines for Managing Issues of Public Health Significance on Passenger Ships Coming to the Caribbean (Caribbean Vessel Surveillance System)



Regional Guidelines for Managing Issues of Public Health Significance in Stay-Over Arrivals (Hotel-Based Surveillance) in the Caribbean

**Regional Surveillance Guidelines (stay-over arrivals and passenger ships)**

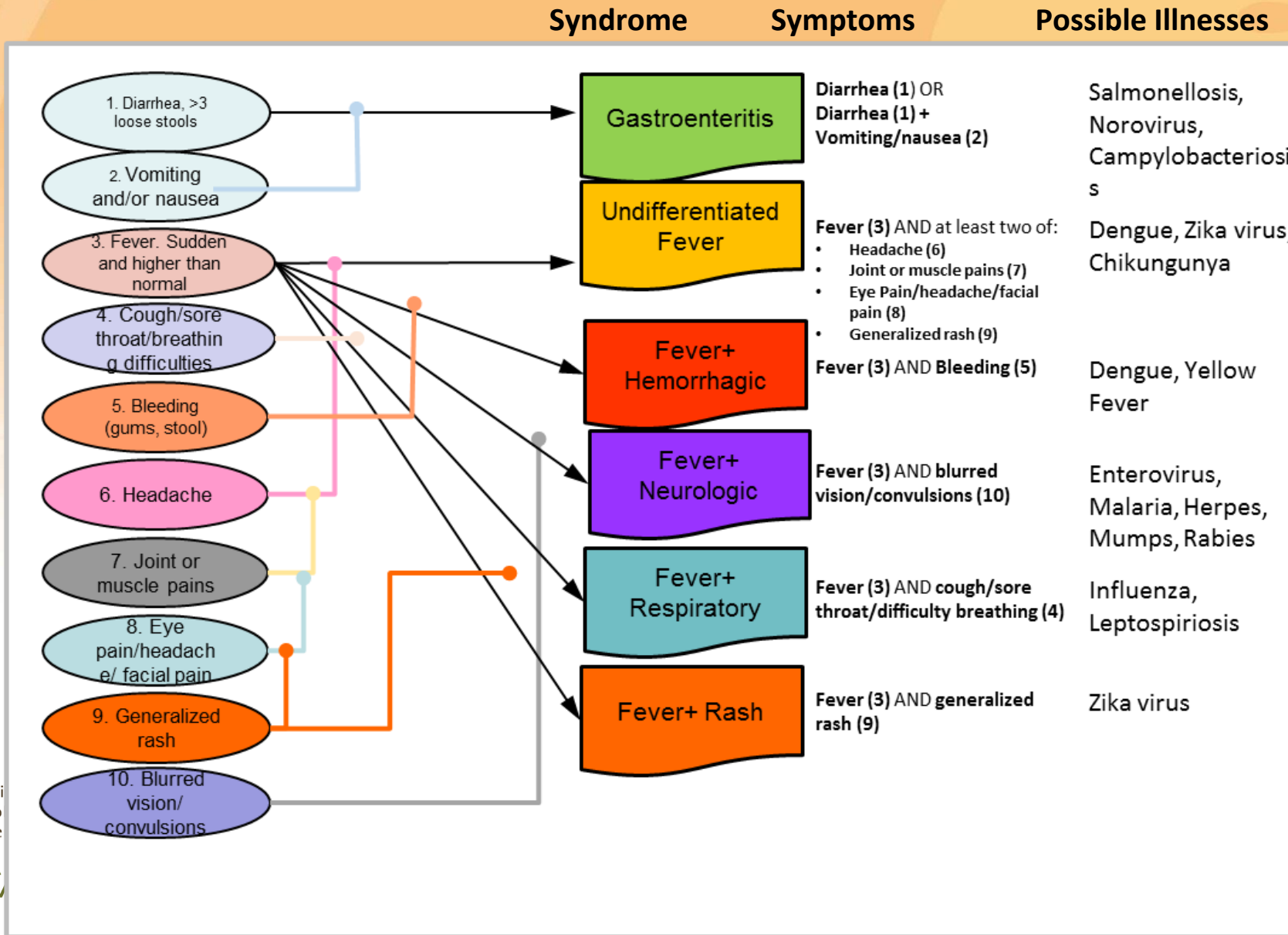
# The Tourism & Health Information System (THiS)

- **Objective:** monitor and respond efficiently to health threats in Caribbean hotel facilities to prevent and minimize the spread and impact of disease
- A web-based application designed for hotels/guest houses and public health agencies to monitor and provide alerts in real-time on the health of guests and staff members

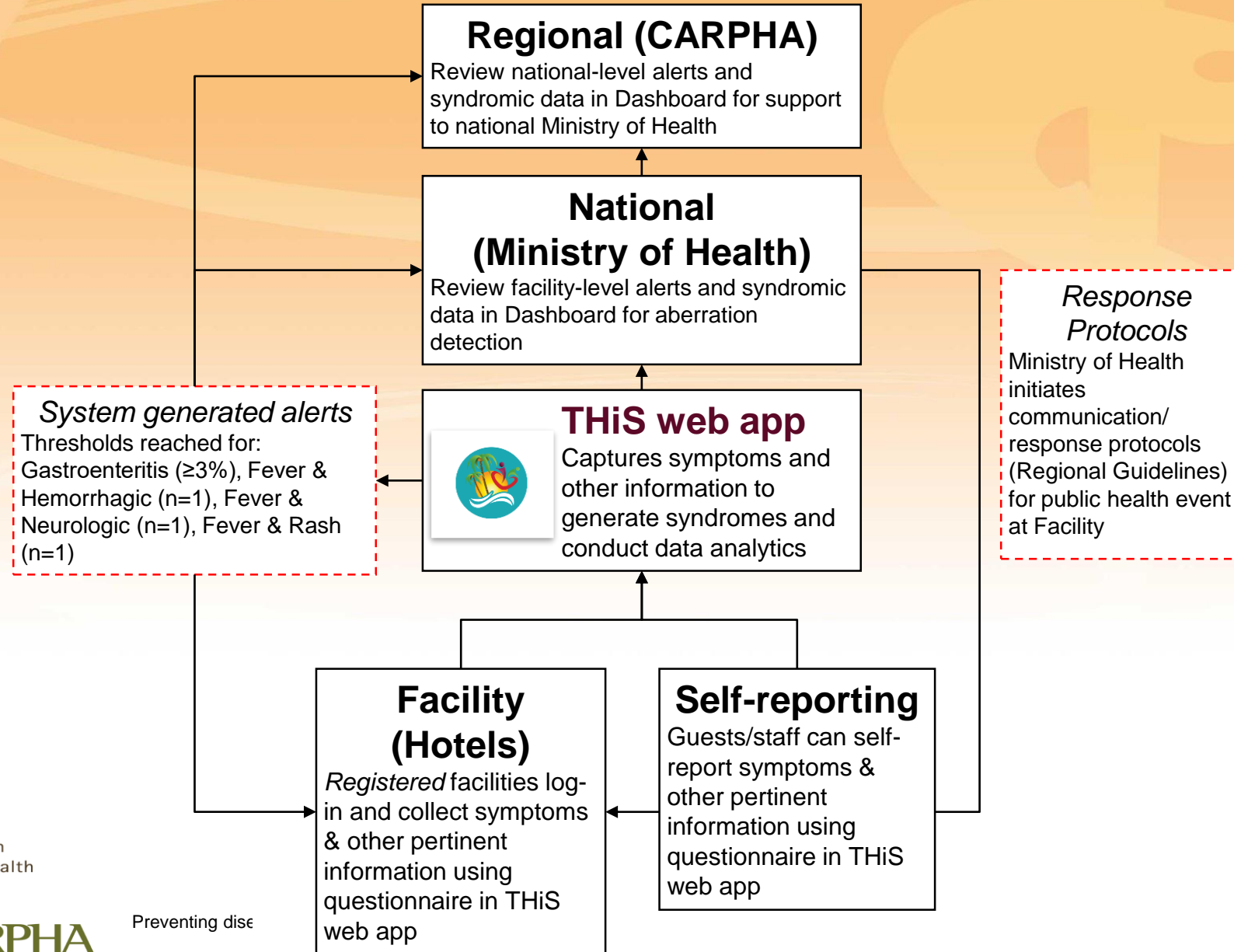


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# Converting Symptoms to Syndromes



# THiS Surveillance Pathway



# Key Advantages

1. Surveillance tool freely available for national public health surveillance efforts for millions of tourists and staff members in the Caribbean
2. Quick and easy real-time reporting of illnesses
3. Real-time collation and analysis - alerts for public health action
4. Self-reporting option (anonymous reports, non-registered hotels, other tourist establishments, persons reporting illness after trip)

# Alert Thresholds

Syndrome	Threshold	Alert	Response
Gastroenteritis	Attack Rate $\geq 2\%$	Flag in THiS web app and email notification	Response is established between Facility- and National-level using the:  <i>'Regional Guidelines for Managing Issues of Public Health Significance in Stay-Over Arrivals (Hotel-based Surveillance) in the Caribbean'</i>
Undifferentiated Fever	Aberration detection by Ministry of Health		
Fever & Hemorrhagic Symptoms	1 case	Flag in THiS web app and email notification	
Fever & Neurologic Symptoms	1 case	Flag in THiS web app and email notification	
Fever & Respiratory Symptoms	Aberration detection by Ministry of Health		
Fever & Rash Symptoms	1 case	Flag in THiS web app and email notification	



# Development of THiS (Jan 2016 to date)

Stage	Timeline	Developmental Items
Phase 1	Jan-Jul 2016	<ul style="list-style-type: none"> <li>• <b>Country visits # 1 (diagnosis &amp; gap analysis): <i>Bahamas, Barbados, Trinidad/Tobago, Belize, Guyana, Jamaica</i></b></li> <li>• Concept design and mock up</li> </ul>
Phase 2	Aug-Dec 2016	<ul style="list-style-type: none"> <li>• Revisions</li> <li>• Develop User Manual</li> <li>• <b>Launch THiS web app 1.0 (beta)</b></li> <li>• <b>Country visits # 2 (training and consultations): <i>Trinidad/Tobago, Belize, Barbados</i></b></li> </ul>
Phase 3 (to date)	Jan-Jun 2017	<ul style="list-style-type: none"> <li>• <b>Continued country visits #2: <i>Bahamas, Guyana</i></b></li> <li>• Upgrades to IT infrastructure for security/functionality</li> <li>• Revise THiS 1.0 based on in-country feedback, i.e.:</li> <li>• <b>Launch THiS web app 2.0 (beta)</b></li> </ul>
Phase 3 (ongoing)	Jul-Dec 2017	<ul style="list-style-type: none"> <li>• Initiate 'nil' case confirmation</li> <li>• Develop aberration alert mechanisms</li> <li>• <b>Continued country visits #2: <i>Jamaica</i></b></li> <li>• Further modifications based on in-country feedback</li> </ul>

# Country Implementation of THiS

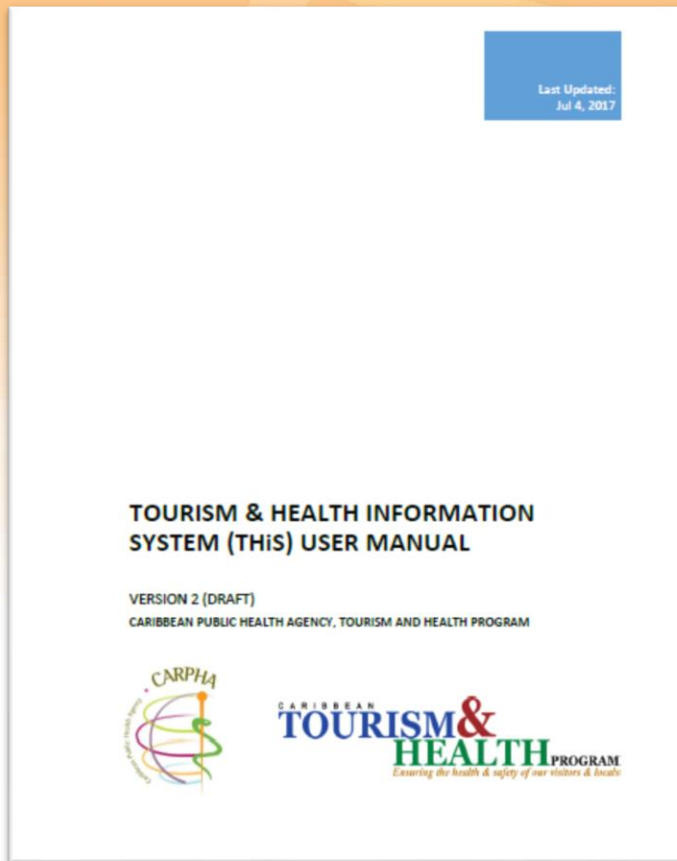
	Number of hotels in country (listed)	Number of hotels visited/engaged	Number of hotels registered	Proportion Registered
<b>Bahamas</b>	36	6 visited, 2 engaged	0	0.0%
<b>Barbados</b>	63	14 engaged	4	6.3%
<b>Belize</b>	840	25 visited, 90 engaged	8	1.0%
<b>Bermuda</b>	40	12	6	15.0%
<b>Guyana</b>	109	0	0	0.0%
<b>Trinidad</b>	53	3	2	3.8%
<b>Tobago</b>	111	15	8	7.2%
<b>Turks &amp; Caicos Islands</b>	45	30	13	28.9%

## Progress & Challenges

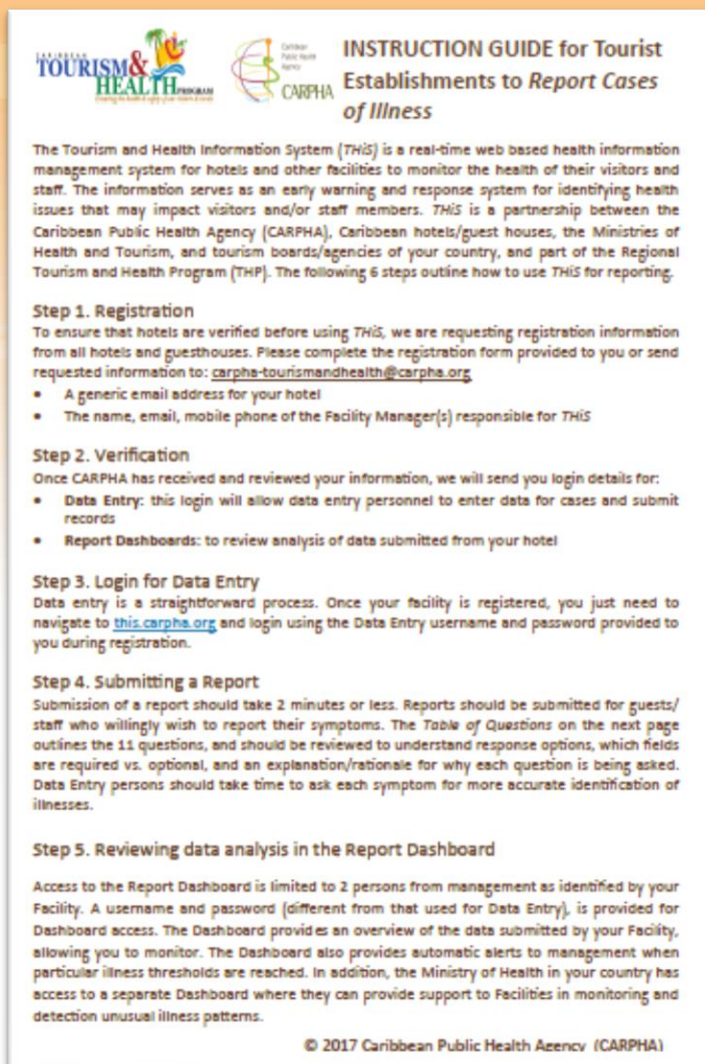
- 59 registered hotels/guest houses across 8 countries in less than a year of implementation
- Limited reporting of illness in the web application
  - Nil case confirmation necessary
- Loss of engagement of users
- Limited capacity for expansion/training in some countries

# Resources Developed

## User Manual



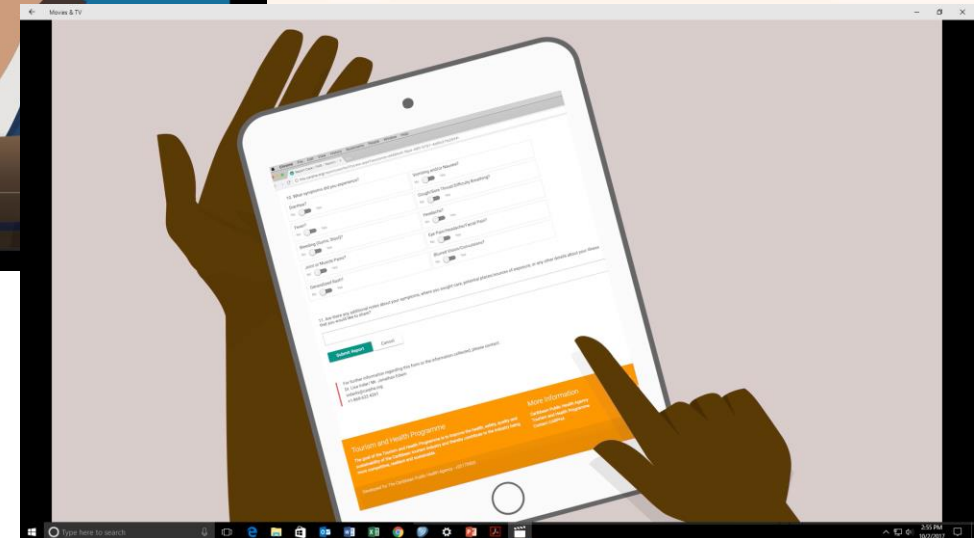
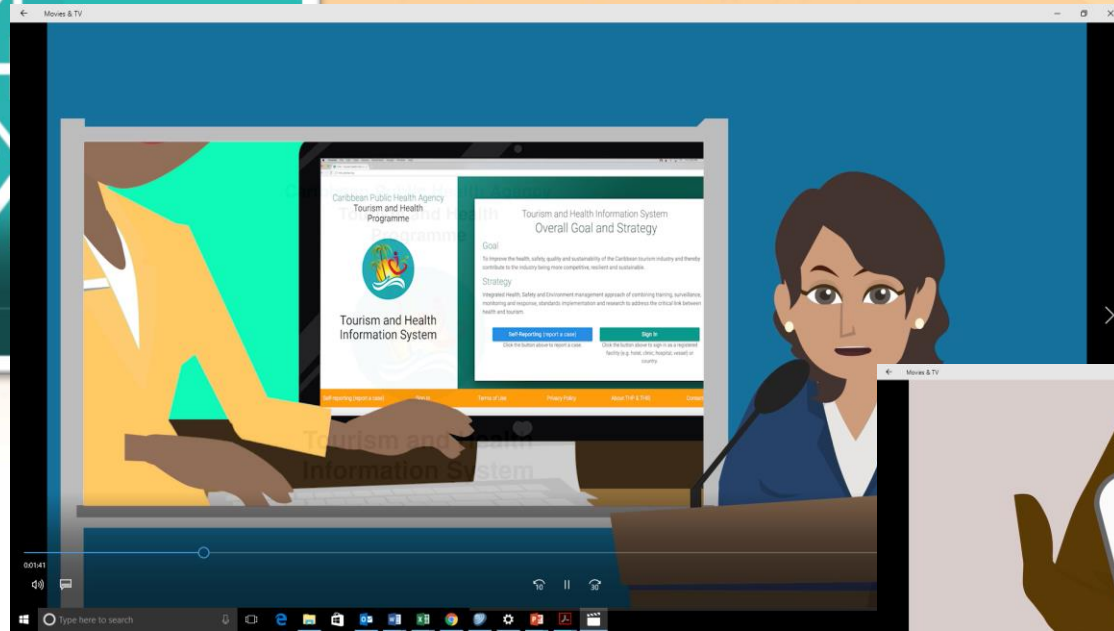
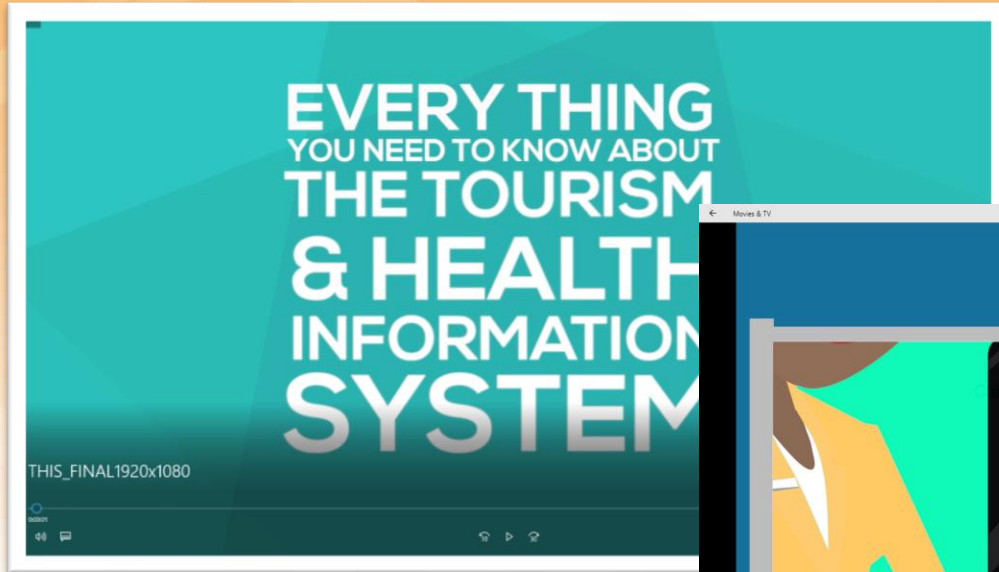
## Instruction Pamphlet for hotel staff



## Information Pamphlet for visitors in hotels



# Instructional Video for Hotels




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# Home Page

URL: [This.carpha.org](http://this.carpha.org) (no 'www.')

The screenshot shows a web browser window with the URL [this.carpha.org](http://this.carpha.org). The page features the Caribbean Public Health Agency logo, which includes palm trees, a sun, and a stylized figure. The main heading is "Tourism and Health Information System". Below this, the page is divided into two columns. The left column contains the agency name and logo. The right column, set against a dark green background, contains the title "Tourism and Health Information System Overall Goal and Strategy". Underneath, there are sections for "Goal" and "Strategy". The "Goal" section states: "To Improve the health, safety, quality and sustainability of the Caribbean tourism industry and thereby contribute to the industry being more competitive, resilient and sustainable." The "Strategy" section states: "Integrated Health, Safety and Environment management approach of combining training, surveillance, monitoring and response, standards implementation and research to address the critical link between health and tourism." At the bottom of the right column, there are two buttons: a blue "Self-Reporting (report a case)" button and a green "Sign In" button. Below each button is a small instruction: "Click the button above to report a case." and "Click the button above to sign in as a registered facility (e.g. hotel, clinic, hospital, vessel) or country." The footer of the page is orange and contains links for "Self-reporting (report a case)", "Sign In", "Terms of Use", "Privacy Policy", "About THP & THiS", and "Contact THP". The Windows taskbar at the bottom shows the time as 3:16 PM on 7/4/2017.

Caribbean Public Health Agency  
Tourism and Health Programme



Tourism and Health Information System

## Tourism and Health Information System Overall Goal and Strategy

### Goal

To Improve the health, safety, quality and sustainability of the Caribbean tourism industry and thereby contribute to the industry being more competitive, resilient and sustainable.

### Strategy

Integrated Health, Safety and Environment management approach of combining training, surveillance, monitoring and response, standards implementation and research to address the critical link between health and tourism.

[Self-Reporting \(report a case\)](#)  
Click the button above to report a case.


[Sign In](#)  
Click the button above to sign in as a registered facility (e.g. hotel, clinic, hospital, vessel) or country.

[Self-reporting \(report a case\)](#)   [Sign In](#)   [Terms of Use](#)   [Privacy Policy](#)   [About THP & THiS](#)   [Contact THP](#)

# Self-reporting

The screenshot shows a web browser window with the URL `this.carpha.org`. The page features the Caribbean Public Health Agency logo, which includes palm trees, a sun, and a stylized figure. Below the logo is the text "Tourism and Health Information System". The main content area is titled "Tourism and Health Information System Overall Goal and Strategy". It contains a "Goal" section stating the aim to improve the health, safety, quality, and sustainability of the Caribbean tourism industry. A "Strategy" section describes an integrated approach of combining training, surveillance, monitoring, and response. Two buttons are present: a blue "Self-Reporting (report a case)" button and a teal "Sign In" button. A mouse cursor is hovering over the "Self-Reporting" button. The footer contains navigation links: "Self-reporting (report a case)", "Sign In", "Terms of Use", "Privacy Policy", "About THP & THiS", and "Contact THP". The Windows taskbar at the bottom shows the time as 3:16 PM on 7/4/2017.

Caribbean Public Health Agency  
Tourism and Health Programme



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Self-reporting (report a case)    Sign In    Terms of Use    Privacy Policy    About THP & THiS    Contact THP

u0p\_rm0X1NiSU4ie...gif    Show all

Type here to search    3:16 PM 7/4/2017

# Self-reporting questionnaire

ortcase/publiccase.aspx?sessionId=0fe35c2b-9297-45e9-bfec-0dd024459df0

SharePoint OneDrive Documents Lib Syndromic Surveillan Scotiabank T&T CARPHA Proj Propos

## Self-reporting (report a case) - General Public Home

**Instructions:** Please complete the following questions to reflect your experience as accurately as possible and to answer factual questions to the best of your knowledge.

Some fields are optional (required fields to submit a report are questions 1, 2, 10). All information submitted will be kept strictly confidential.

1. Are you a guest?


Please select... ▼

2. In which country is the facility that you were staying when you began to feel unwell in?

Please select... ▼

3. Which type of facility is this? Facility Name

Please select... ▼ Please select... ▼



Any guest or staff member can self report their illness using the online questionnaire.

Option to select location from a list of hotels in Caribbean countries



# Login for registered users

The screenshot shows a web browser window at the URL [this.carpha.org](http://this.carpha.org). The page header identifies the organization as the Caribbean Public Health Agency, Tourism and Health Programme. The main content area is titled "Tourism and Health Information System" and "Overall Goal and Strategy". It includes a circular logo with palm trees and a stylized figure. Below the logo, the text reads "Tourism and Health Information System". The "Goal" section states: "To Improve the health, safety, quality and sustainability of the Caribbean tourism industry and thereby contribute to the industry being more competitive, resilient and sustainable." The "Strategy" section states: "Integrated Health, Safety and Environment management approach of combining training, surveillance, monitoring and response, standards implementation and research to address the critical link between health and tourism." At the bottom of the main content area, there are two buttons: a blue "Self-Reporting (report a case)" button and a green "Sign In" button. A mouse cursor is hovering over the "Sign In" button. Below the main content area is a navigation bar with links for "Self-reporting (report a case)", "Sign In", "Terms of Use", "Privacy Policy", "About THP & THIS", and "Contact THP". The browser's taskbar at the bottom shows the date and time as 3:16 PM on 7/4/2017.



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## Two-levels of Access for Hotels


- 1. Data Entry Page:** access for staff completing reports with guests and other staff.
- 2. Data Analytics Dashboard:** access for Facility management who will be able to view analysis of cases reported from their facility.

# Login page



The Caribbean Public Health Agency

Tourism and Health Programme



**CARPHA - THiS**  
Tourism and Health  
Information System

Email

Password

Sign in as...

- Facility
- Country
- CARPHA

If you are not a registered user, click here to register. By signing in you agree to CARPHA'S Privacy Policy and Terms of Use.

## Registered Hotels

1. Can enter data
2. View data analytics for their facility

## Registered Ministry of Health staff:

1. Can view data reported from facilities in country

# Data Entry

g/reportcase/facilitycase.aspx

SharePoint OneDrive Documents Lib Syndromic Surveillan Scotiabank T&T CARPHA Proj Propos

## Report Case - The Phoenix Resort

Analytics Report Case Sign Out

**Instructions:** Please complete the following questions to reflect your experience as accurately as possible and to answer factual questions to the best of your knowledge.

Some fields are optional (required fields to submit a report are questions 1, 2, 10). All information submitted will be kept strictly confidential.

1. Are you a guest?  
Please select... ▼


2. In which country is the facility that you were staying when you began to feel unwell in?  
▼

3. Which type of facility is this? Facility Name  
▼ ▼

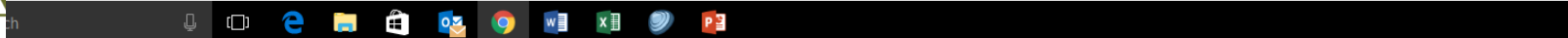
Please select the facility name from the list above (if 'Other', please specify in the Additional Notes field at the end of the page)

4. What is your age? Age Group  
<1

5. What is your gender?  
Please select... ▼



Caribbean  
Public  
Health  
Agency  
CA



#	Field	Req*	Response Options	Rationale
<i>*R=Response Required; SG=System Generated; O=Response Optional</i>				
1	Person reporting illness	R	Guest or Staff	To understand if the illness is circulating among guests or visitors
2	Name of hotel	SG	--	Where the illness is being reported from
3	Country of hotel	SG	--	Where the illness is being reported from
4	Age	O	Number	Is the illness occurring among a certain age (young, elderly)
5	Age Group	SG	--	Is the illness occurring among a certain age? (young, elderly)
6	Gender	O	Female, Male	Is the illness limited to males or females
7	Resident Country	O	Open text/drop-down	Is the person coming from a country where an outbreak or endemic disease occurs
8	Recent Travel	O	Open text/drop-down	Is the person coming from a country where an outbreak or endemic disease occurs
9	Symptom occurrence date	O	Date	When did the person first begin feeling unwell
10	Symptoms	R	(1) Diarrhea (>3 or more loose stools); (2) Vomiting and/or nausea; (3) Fever (Sudden and higher than normal); (4) Cough/sore throat/breathing difficulties; (5) Bleeding (gums, stool); (6) Headache; (7) Joint or muscle pains; (8) Eye pain/headache/facial pain; (9) Generalized rash; (10) Blurred vision/convulsions	To understand what potential diseases are circulating. It is important that data entry persons ask the individual reporting illness each one of these symptoms to ensure nothing is missed.
11	Additional Notes	O	Open text	Any additional information the person willingly provides (symptoms, health care sought, meals/places at or outside hotel, etc.)

# Example of a data entry report

1. **Guest or Staff:** *Guest* ←
2. **Country of hotel:** *[auto gen based on username]*
3. **Type of facility:** *[auto gen based on username]*  
**Facility Name:** *[auto gen based on username]*
4. **Age:** *24*  
**Age Group:** *[auto gen based on 'Age entry'] or user can enter an approximate age group if 'Age' is not provided by person reporting*
5. **Gender:** *Female*
6. **Home Country:** *Canada*
7. **Recent Travel:** *U.S., Mexico*
8. **Reported date:** *[auto gen based on today's date]*
9. **Symptom onset date:** *2016/09/19*
10. **Symptoms:** *Fever, Sore Throat* ←
11. **Additional Notes:** *person fainted, went to see Dr. Jones*

Some fields are pre-populated based on user login (Country, Facility Type & Name, Reported Date)

Only two required fields to submit a report (rest optional)

Age group is available for entry in case person's exact age is not available

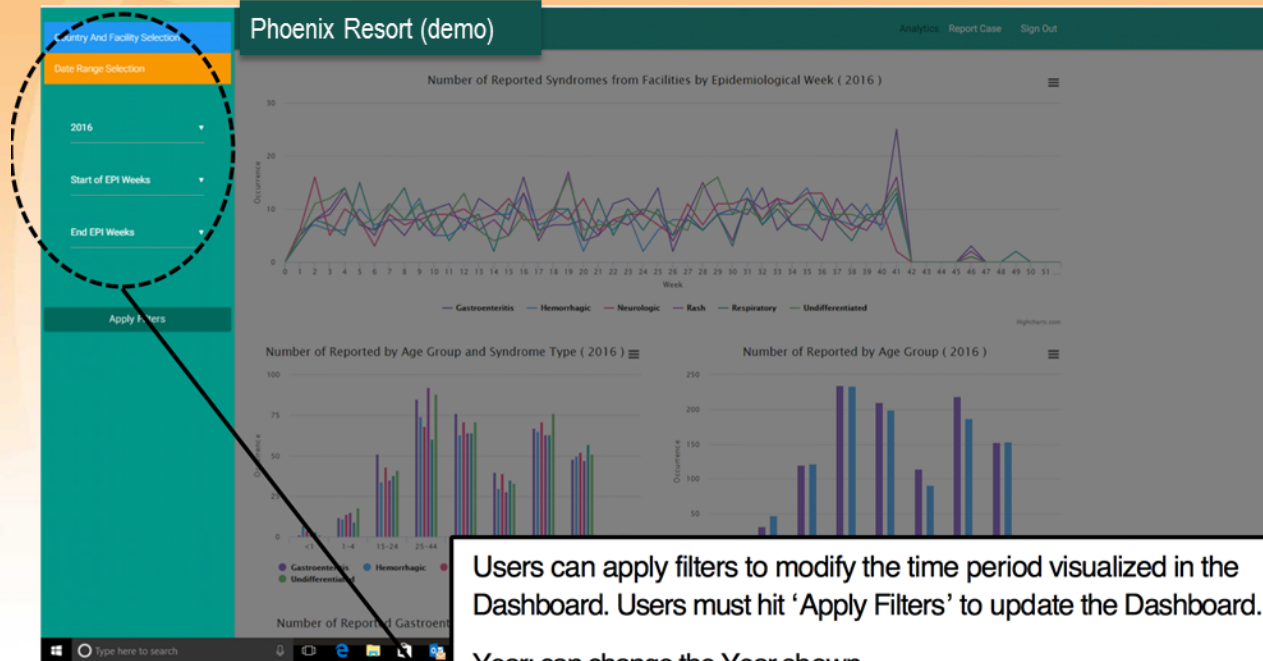
# From data entry to real-time analytics

Once a hotel completes a Data Entry report, the data is used to populate a *Data Analytics Dashboard*.

The symptoms that are reported during Data Entry are analyzed by the system to generate 6 syndromes that are displayed in the Report Dashboard. These 6 syndromes are:

1. **Gastroenteritis** (*potential illnesses include Salmonellosis, Campylobacteriosis*)
2. **Fever & Rash** (*potential illnesses include Zika Virus*)
3. **Fever & Respiratory** (*potential illnesses include Influenza, Legionellosis*)
4. **Fever & Neurologic** (*potential illnesses include Malaria, Mumps*)
5. **Fever & Hemorrhagic** (*potential illnesses include Yellow Fever*)
6. **Undifferentiated Fever** (*potential illnesses include Typhoid, Hantavirus*)

# Data analytic Dashboard: Filters



Users can apply filters to modify the time period visualized in the Dashboard. Users must hit 'Apply Filters' to update the Dashboard.

Year: can change the Year shown

Start of EPI Weeks: First week for which you would like data shown

End EPI Weeks: End week for which you would like data shown

## For registered facilities the Dashboard:

- Accessible to (2) members of management who have been provided a separate secure username and password
- Provides overview of demographics and syndromes reported by guests; filters provide ability to modify time period of data displayed
- Interactive using mouse to hover over figures for additional data



# Data analytic Dashboard: Insights into Demographics



Overview of all reported syndromes over specified Time period (shown here is epi weeks 1-52)

Breakdown of syndromes by Age Group

# Data analytic Dashboard: Compare Illnesses in Guests v. Staff



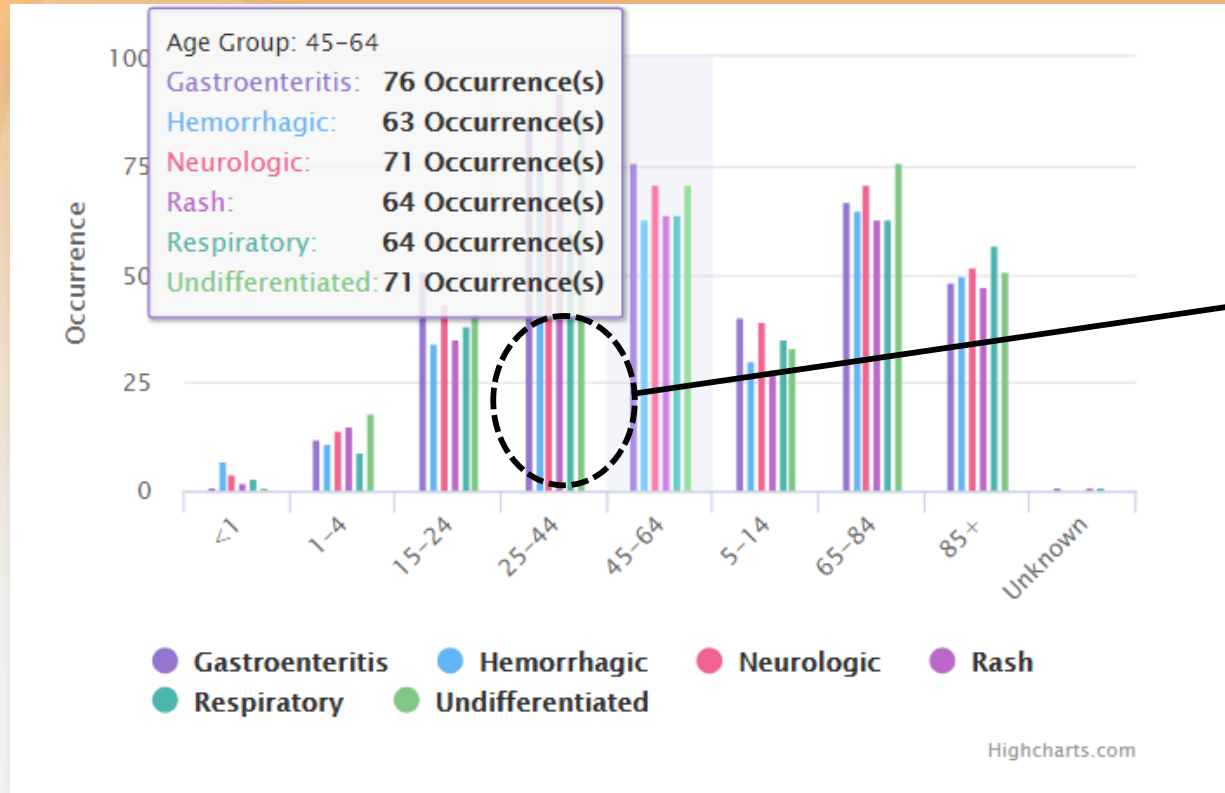
Charts of each individual Syndrome stratified by Guest vs. Staff over specified Time period (shown here is epi weeks 1-52)



Caribbean  
Public Health  
Agency

CARPHA

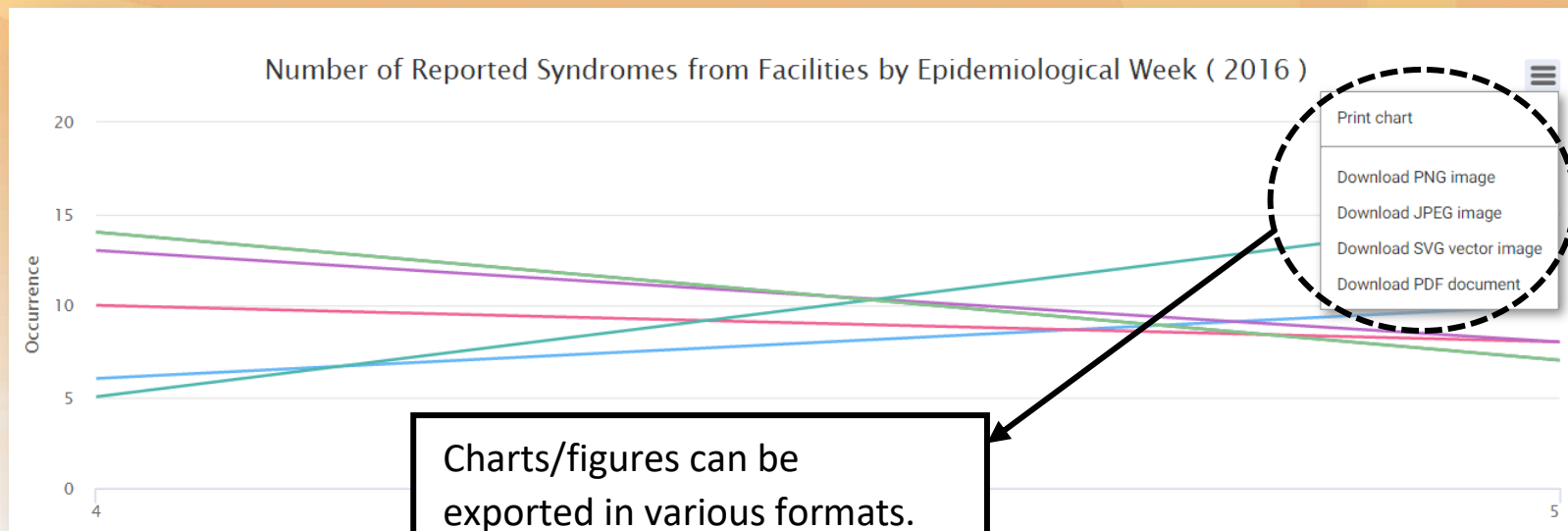
# Data analytic Dashboard: Interactivity



By hovering over a bar in the chart, further data can be elucidated for that respective data set.

Here you can see the number of cases of the different Syndromes reported by persons aged 45-64 over the time period specified by the Filter.

# Data analytic Dashboard: Export Features



In the live dashboards, a function to export all data from the report will be available.



# Data analytic Dashboard: Regional Level Overview

Accessible to (2) users at *CARPHA*

Analytics - Caribbean Public Health Agency

Sign Out

Current EPI Week - 2017/32 | Current Filter - 2017/Weeks 1-52

## THIS Syndromic Surveillance Summary Table

Name	No. Registered Facilities								Reports per Quarter	Syndrome Counts (No. of Flags)					
	Hotels/Guest Houses	No. Reported(%)	Clinic/Hospitals	No. Reported(%)	Vessels	No. Reported(%)	Other	No. Reported(%)		Gastro.	Undiff. Fever	Fever + Hemorr.	Fever + Neuro.	Fever + Resp.	Fever + Rash
Anguilla	9	-	2	-	1	-	1	-	---	0	0	0	0	0	0
Antigua and Barbuda	4	-	2	-	1	-	1	-	---	0	0	0	0	0	0
Aruba	4	-	2	-	1	-	1	-	---	0	0	0	0	0	0
Bahamas	4	-	2	-	1	-	1	-	---	0	0	0	0	0	0
Barbados	65	-	2	-	1	-	1	-	---	0	0	0	0	0	0
Belize	97	-	2	-	1	-	1	-	---	0	0	0	0	0	0
Bermuda	48	-	2	-	1	-	1	-	---	0	0	0	0	0	0
Bonaire	1	-	2	-	1	-	1	-	---	0	0	0	0	0	0
British Virgin Islands	4	-	2	-	1	-	1	-	---	0	0	0	0	0	0



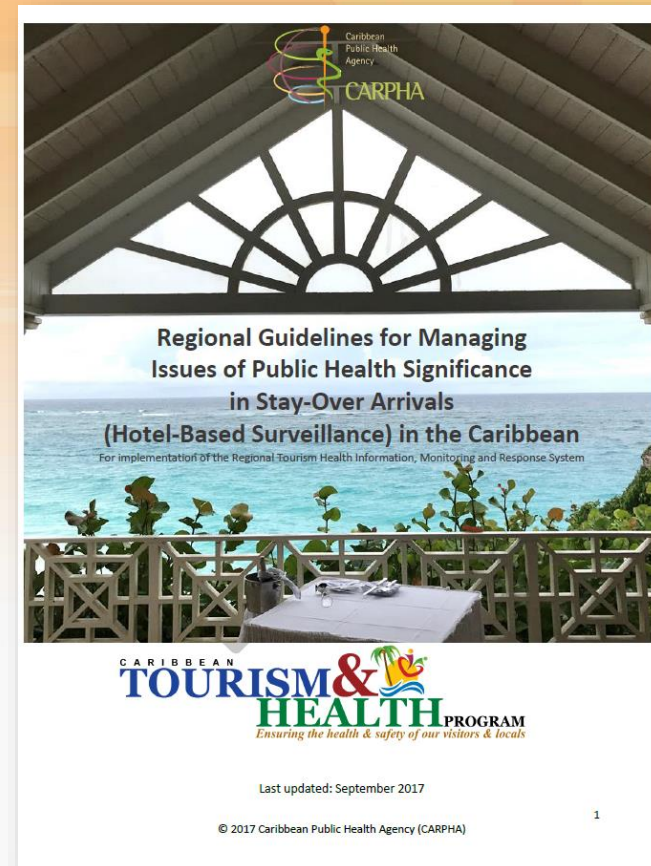
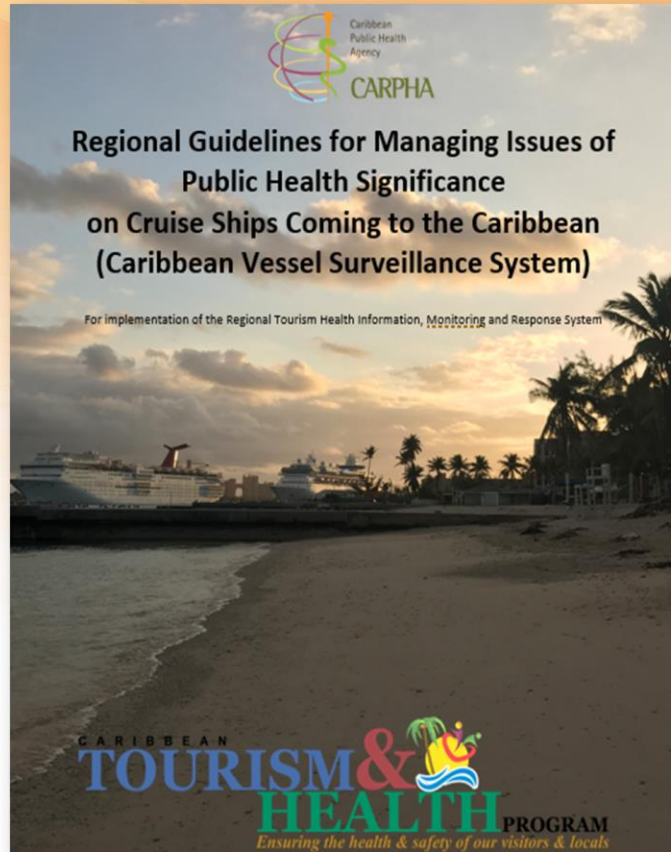
Number of Syndromes Reported ( 2017 )



# Next Steps for THiS

1. Ongoing registration from hotels
2. Disseminate training video to countries
3. Additional training for national implementation and surveillance teams
4. Promoting self-reporting from guests/staff in country (advocacy and promotion, content development)
5. Reporting of illnesses from registered hotels
6. Monitoring of flags and trends by Ministry of Health

# Regional Vessel and Hotel Surveillance Guidelines



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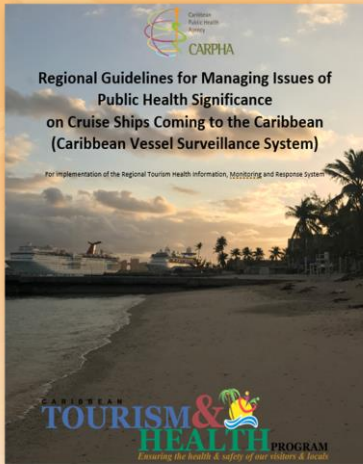


# Development of Regional Guidelines, 2014-2017

Timeline	Content
2014/2015	<ul style="list-style-type: none"> <li>• PHAC consultants develop first draft of 'Regional Guidelines</li> <li>• Guidelines undergo first internal review by CARPHA</li> </ul>
July 2016- December 2016	<ul style="list-style-type: none"> <li>• First round of revisions to the <i>Hotel Based Surveillance Guidelines</i></li> <li>• First round of revisions to <i>CVSS Guidelines</i></li> </ul>
January 2017- June 2017	<ul style="list-style-type: none"> <li>• Second round of revisions to the Regional Guidelines:               <ul style="list-style-type: none"> <li>○ Alignment with WHO International Health Regulations (2005)</li> <li>○ Addition of Decision Support Instrument for Surveillance and Response to Symptoms of Vector-borne Diseases</li> <li>○ Addition to Decision Support Instrument for Surveillance and Response to Symptoms of Yellow Fever</li> <li>○ Decision Support Instrument for Surveillance of Fever &amp; Hemorrhagic Symptoms</li> </ul> </li> <li>• Internal review of Regional Guidelines by CARPHA</li> <li>• Dissemination for review to Chief Medical Officers (CMOs) of CARPHA Member States</li> </ul>
July-December 2017	<ol style="list-style-type: none"> <li>1. Revise Regional Guidelines based on feedback received from CARPHA Member States</li> <li>2. Convening of a Regional Workshop to formally review and endorse Regional Guidelines</li> <li>3. Operationalize Regional Guidelines with CARPHA Member States</li> <li>4. Produce, disseminate, and train stakeholders using final Regional Guidelines</li> </ol>

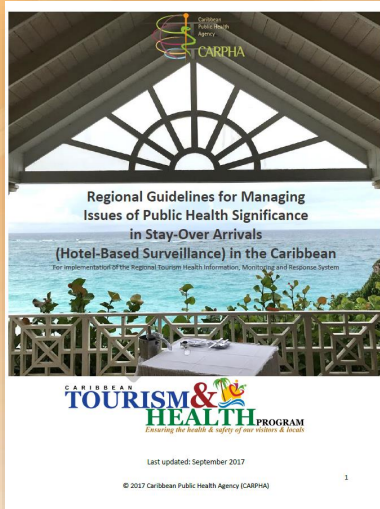


# Key Content: Caribbean Vessel Surveillance System Guidelines



Page	Key Content
<b>Introduction, Purpose</b>	<ul style="list-style-type: none"> <li>• Purpose</li> <li>• Role of CARPHA</li> <li>• IHR(2005) key annexes and articles, legal framework</li> </ul>
<b>Background</b>	<ul style="list-style-type: none"> <li>• Cruise Ship industry in the Caribbean</li> <li>• Public Health and Cruise Ships</li> </ul>
<b>Surveillance and Response Guidelines by Syndromes</b>	<ul style="list-style-type: none"> <li>• Acute Gastroenteritis</li> <li>• Acute Respiratory Infections</li> <li>• Others Syndromes of Public Health Interest</li> <li>• Deaths</li> </ul>
<b>Summary Tables: Surveillance and Response</b>	<ol style="list-style-type: none"> <li>1. Table 1: Acute Gastroenteritis</li> <li>2. Table 2: Acute Respiratory Illness</li> <li>3. Table 3: Other Syndromes of Public Health Interest and/or Other Suspected Infectious Illness</li> <li>4. Table 4: Deaths</li> <li>5. Table 3-A: Decision Support for Symptoms of Vector-Borne Diseases (ChikV, Zika, Dengue Fever)</li> <li>6. Table 3-B: Symptoms of Yellow Fever</li> <li>7. Table 3-C: Fever and Hemorrhagic Symptoms</li> </ol>
<b>Prevention Guidelines for Other Illness and Annexes</b>	<ul style="list-style-type: none"> <li>• Vector Borne Diseases, STIs, Vaccine Preventable Diseases</li> <li>• Surveillance and Reporting Forms (MDH, Case/Outbreak Reporting Form), IHR Ports, Outbreak Threshold for ARI on a ship, etc.</li> </ul>

# Key Content: Caribbean Hotel Surveillance System Guidelines



Page	Key Content
<b>Introduction, Purpose</b>	<ul style="list-style-type: none"><li>• Purpose</li><li>• Role of CARPHA</li></ul>
<b>Background</b>	<ul style="list-style-type: none"><li>• Hotel industry in the Caribbean</li><li>• Public Health and Hotels (outbreaks, etc.)</li></ul>
<b>Caribbean Hotel Surveillance Structure</b>	<ul style="list-style-type: none"><li>• Objectives</li><li>• What is under surveillance and reporting structure</li></ul>
<b>Surveillance Components and Next Steps</b>	<ul style="list-style-type: none"><li>• Determining outbreak thresholds</li><li>• Focal persons at country and regional levels</li></ul>
<b>Annexes</b>	<ul style="list-style-type: none"><li>• THIS Demo</li><li>• Lodging Statistics</li><li>• Gastroenteritis Outbreak Threshold calculation</li></ul>

# Content of the Regional Guidelines

- Provide rationale for why harmonized guidelines are needed for the tourism sector in the Caribbean (outbreak potential, IHR(2005) core capacity requirements, etc.)
- Surveillance and response to key syndromes for national health authorities
- Outline key partners and responsibilities (national and regional players, vessels/hotels)

# Example - Surveillance & Response for Acute Gastroenteritis (AGE) from *Caribbean Vessel Surveillance Guidelines*

**TABLE 1: SURVEILLANCE AND RESPONSE FOR ACUTE GASTROENTERITIS (AGE)**

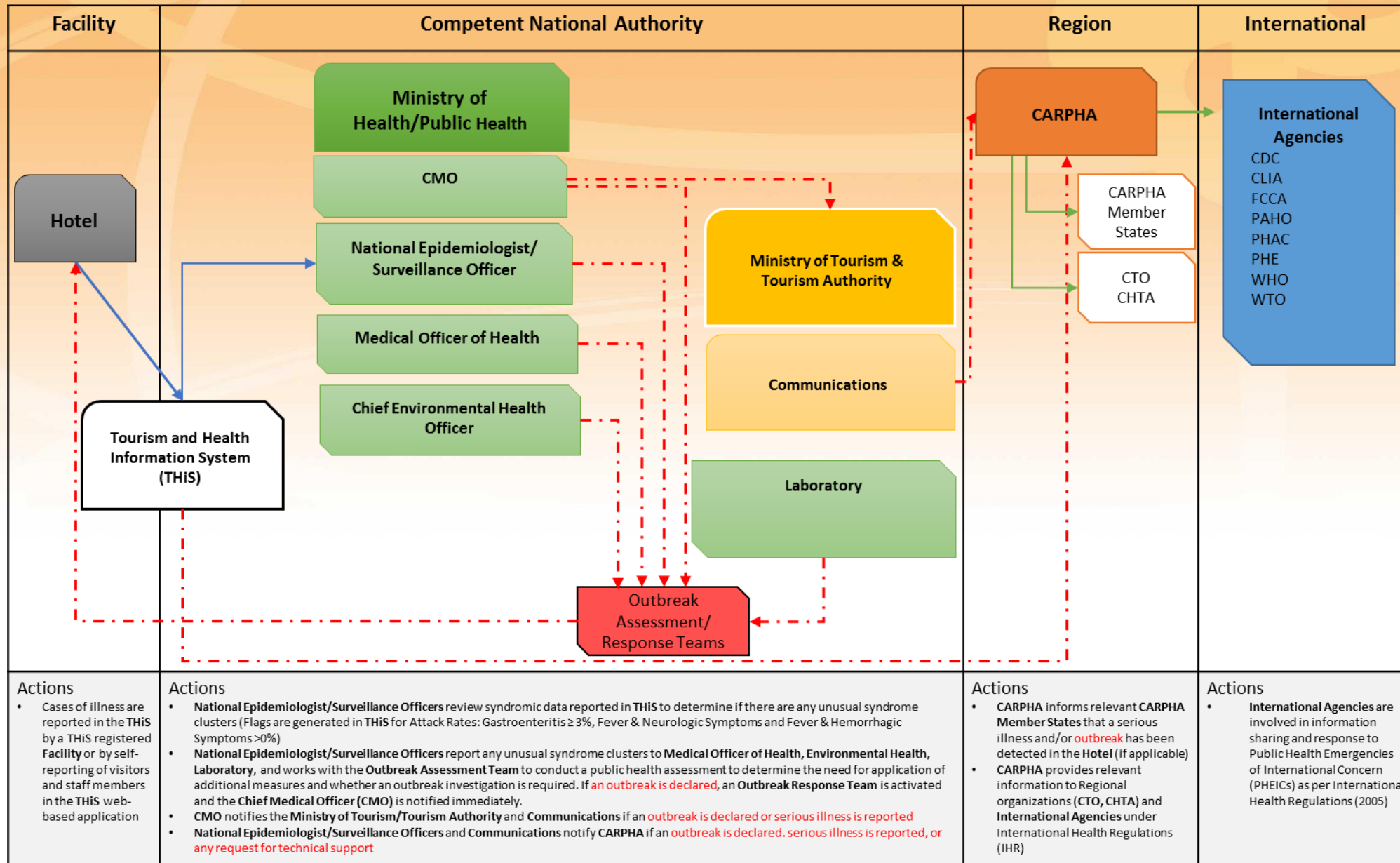
ACTION	VESSEL/SHIP	COMPETENT AUTHORITY FOR PORT HEALTH (E.G. MINISTRY OF HEALTH - ENVIRONMENTAL HEALTH)	MINISTRY OF HEALTH (CHIEF MEDICAL OFFICER, MEDICAL OFFICER OF HEALTH, NATIONAL EPIDEMIOLOGIST)	MINISTRY OF TOURISM
ONGOING SURVEILLANCE	<ul style="list-style-type: none"> <li>Vessel should record all cases of AGE in vessel medical log</li> <li>Vessel should complete the MDH (whether or not there are illnesses reported on board) and submit to Ship Agent <u>at least 12 hours before arrival and no later than 24 hours before arrival</u> at the next port of call.</li> <li>The Ship Agent should forward the MDH (and any applicable vessel logs) to the Port Authority (Port Health Officer) <u>at time of receipt from the Vessel</u>.</li> <li>If there are changes to AGE cases after initial notification, an updated MDH should be submitted by the Vessel to the Ship Agent <u>at least 4 hours</u> before arrival in port.</li> </ul>	<ul style="list-style-type: none"> <li>Port Health Officer reviews MDH (received from Ship Agent) to identify any public health issues.</li> <li>Port Health Officer forwards the MDH and reports any public health issues to the Ministry of Health (National Epidemiologist, Medical Officer of Health, Chief Environmental Health Officer)</li> <li>Port Health Officer may also be responsible for data entry of MDH content and other vessel medical logs into a database (if applicable)</li> <li>Port Health Officer may board vessel (with Customs and/or Immigration) to review medical logs, the presence of the vessel's Outbreak Prevention and Response Plan, and, if necessary, interview relevant crew (e.g. ship physician/medical crew, captain, housekeeping)</li> </ul>	<ul style="list-style-type: none"> <li>Ensure communication protocol between the competent authority for Port Health and Ministry of Health exists and is updated during organizational/staff changes</li> <li>Entry of MDH into database (if applicable)</li> </ul>	<ul style="list-style-type: none"> <li>Support the Ministry of Health by:               <ul style="list-style-type: none"> <li>Helping develop joint press releases</li> <li>Promotion of public health control measures issued by Ministry of Health</li> </ul> </li> </ul>
TRIGGER FOR ACTION AND INITIAL RESPONSE	<ul style="list-style-type: none"> <li>If the number of illnesses reaches or exceeds 2% or 3% AGE cases among either passengers or crew (3% is defined as a "suspect outbreak"), either a) during the current voyage or b) within 15-day period before arrival at the port, then the Vessel should:               <ol style="list-style-type: none"> <li>Immediately notify and forward AGE illness counts and details using the MDH to the Port Authority (Port Health Officer) at the next port of call</li> <li>Recommended that the AGE log (Annex 7.1.2) also be sent</li> <li>Initiate (vessel's) Outbreak Prevention and Response Plan</li> </ol> </li> </ul> <p>Notes:</p> <ul style="list-style-type: none"> <li>see AGE threshold calculation in Section 3.1.1</li> <li>Steps 1-3 above should be initiated when the 2% threshold is reached and again at 3%.</li> </ul>	<ul style="list-style-type: none"> <li>Port Authority (Port Health Officer) should:               <ul style="list-style-type: none"> <li>Review of MDH and AGE log from Vessel</li> <li>Send MDH, AGE log, and other updates received (i.e. telephone and email) from the Vessel to the Ministry of Health (Chief Medical Officer, National Epidemiologist, Medical Officer of Health, Chief Environmental Health Officer)</li> <li>Participate in <i>Outbreak Assessment Team</i>, as needed</li> <li>Board Vessel for inspections and/or review of medical logs as necessary</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Review of MDH, AGE log, and other updates received from Vessel/Port Authority.</li> <li>Chief Medical Officer (CMO), Medical Officer of Health, and National Epidemiologist form and coordinate <i>Outbreak Assessment Team</i> to assess need to create <i>Outbreak Response Team</i>.</li> <li>CMO informs Ministry of Tourism and Communications Department (in the event of an outbreak)</li> <li>National Epidemiologist completes Case/Outbreak Reporting Form (Annex 7.1.3) and sends to CARPHA               <ul style="list-style-type: none"> <li>CARPHA will notify other member countries with ports of call on Vessel's itinerary, as well as international organizations (as required)</li> </ul> </li> </ul>	
RESPONSE	<ul style="list-style-type: none"> <li>Participate in <i>Outbreak Response Team</i></li> <li>Follow Outbreak Prevention and Response Plan (see Section 3.1.2)               <ul style="list-style-type: none"> <li>i.e. isolation of ill passengers and crew, disinfection, initial case identification and investigation, exclusion of ill crew from work</li> <li>Recommended minimum isolation periods after being symptom free (Passenger: 24 hours; Food Handlers: 48 hours; Other crew: 24 hours)</li> </ul> </li> <li>Passengers/crew in isolation should not regularly disembark at ports unless for medical treatment</li> </ul>	<ul style="list-style-type: none"> <li>Participate in <i>Outbreak Response Team</i></li> <li>Ensure vessel is following their Outbreak Prevention and Response plan, especially:               <ul style="list-style-type: none"> <li>Proper passenger/crew isolation</li> <li>No disembarkation for ill persons</li> <li>Proper cleaning procedures are being followed</li> </ul> </li> <li>Provide support to Vessel in terms of collection and submission of environmental samples for laboratory testing</li> <li>On-board Vessel inspection and/or review of medical logs as necessary</li> </ul>	<ul style="list-style-type: none"> <li>Form and coordinate <i>Outbreak Response Team</i></li> <li>Lead investigation: e.g. determine case definition, identify cases, conduct epidemiologic study, issue recommendations to vessel for control and prevention measures including recommendations for isolation and disembarking of unwell passengers/crew</li> <li>Provide support to Vessel in terms of collection and submission of clinical samples for laboratory testing</li> </ul>	
CONCLUSION	<ul style="list-style-type: none"> <li>Review investigation report and assess whether changes need to be made to the Vessel's standard operation procedures, and/or the Outbreak Prevention and Response Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Assist in preparation of investigation report</li> <li>Ensure Vessel has either completed or is in the process of completing necessary cleaning, disinfection, and application of other appropriate control measures before next voyage to prevent further spread of illness.</li> </ul>	<ul style="list-style-type: none"> <li>Complete investigation report and disseminate to stakeholders</li> <li>Submit Final Outbreak Reporting Form (Annex 7.1.4) to CARPHA</li> </ul>	

MDH: Maritime Declaration of Health; Annex A: Outbreak and Single Case of Public Health Concern Form; *Outbreak Assessment Team* members could include: medical officer of health, public health surveillance officer, environmental health officer, veterinary public health officer (if required); *Outbreak Response Team* members could include: chief medical officer, medical officer – port health, communicable disease control consultant, national epidemiologist, director of public health/surveillance, director of environmental health, director of agriculture; *Outbreak Reporting Form*: Appendix 11.2 of CAREC Regional Surveillance Policy Guidelines (June 2011).

# Proposed Caribbean Hotel Surveillance & Response: Communication Protocol

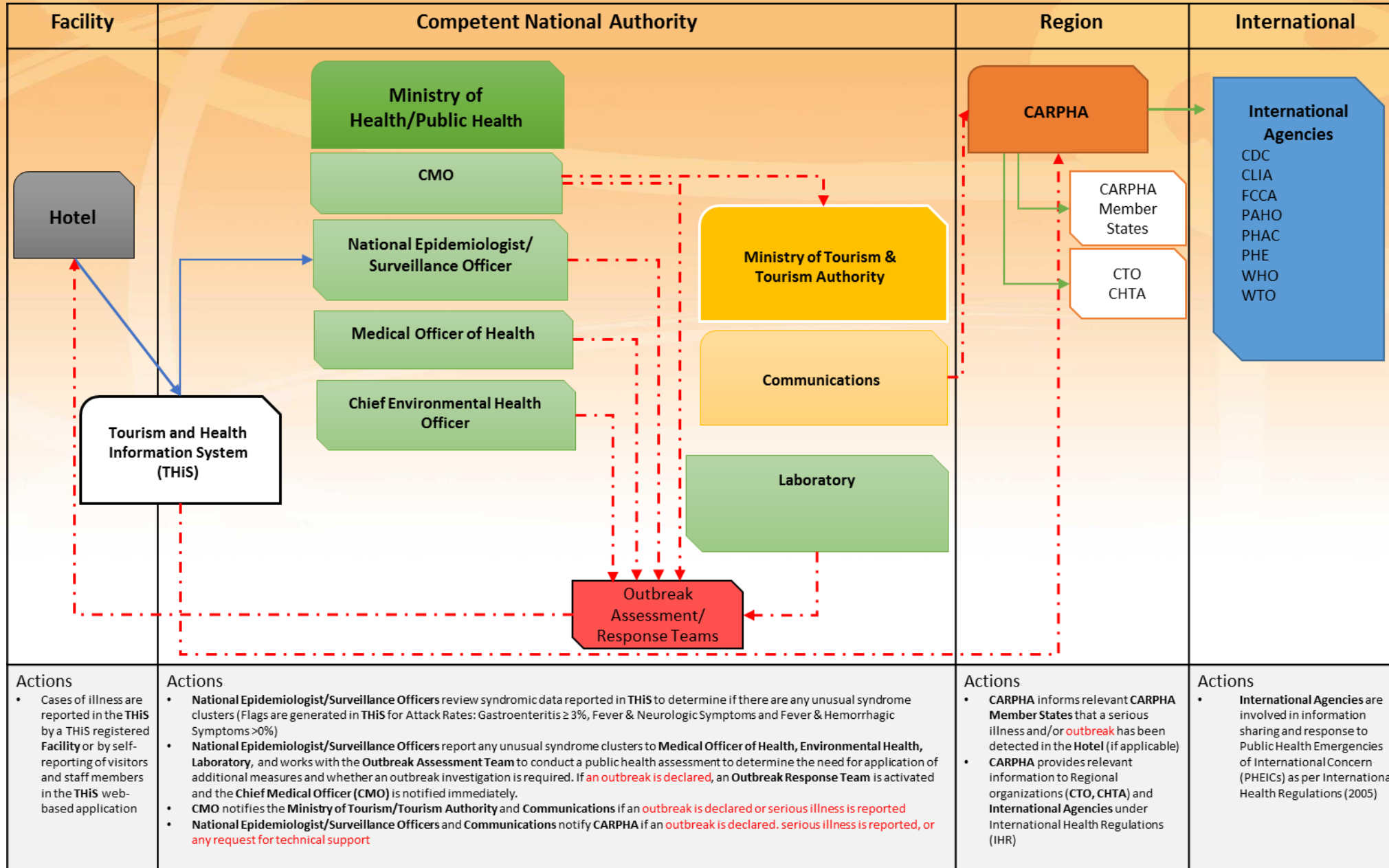
## Proposed Caribbean Hotel Surveillance & Response Structure

--- Outbreak investigation or any notifiable IHR public health event (see IHR(2005) Annex 2)



# Proposed Caribbean Vessel Surveillance & Response: Communication Protocol

--- Outbreak investigation or *any* notifiable IHR public health event (see IHR(2005) Annex 2)



# Thank you!

## **CARPHA Tourism and Health Program**

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