Training on the *Tourism and Health Information System (THiS)*

Lisa Indar and Ayanna Alexander
Tourism and Health Program
Caribbean Public Health Agency (CARPHA)

Preventing disease, promoting and protecting health
Tourism Health Information, Surveillance, Monitoring and Response system

- Early Warning and Response Travel Health System
  Web-based, real time, (THiS.carpha.org)
  - Real time info for early response, to reduce/stop spread, reputation & economic damage
  - **ALL data is CONFIDENTIAL**
  - No names persons/accommodations would NOT be targeted
  - Data is NOT published
  - Not a hotel tracking system
  - Internal health monitoring and alert system for facility, country

Preventing disease, promoting and protecting health
Surveillance Pathway

Regional (CARPHA)
- Review de-id total alerts reported from countries

National (Ministry of Health)
- Receive facility alerts
- Review facility level to investigate alerts
- Review national aggregate data to identify trends

THiS web app
- Data entry
- Data analytics

Facility (Accomodations)
- Report cases of illness in real-time
- Access to data analytics for their facility

Alert notifications
System generated when syndrome thresholds are reached

Self-reporting
- Guests/Staff to anonymously report illness from a Facility

Preventing disease, promoting and protecting health
Types of Users

1. **Facility Users (hotels, guesthouses, medical center)**
   - Administrative staff/hotel nurses (reporting/data entry)
   - Hotel management and nurses? (data analytics)

2. **Country Users/Ministry of Health**
   - Epidemiologists/surveillance officers at National and Regional offices (data analytics)

3. **CARPHA**
   - THP Epidemiologist and Unit Head (data analytics)
### Accommodation Registration

#### Information for secure access to Data Analytics Dashboard:

<table>
<thead>
<tr>
<th>Name of Hotel Manager:</th>
<th>James Edwards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email of Hotel Manager:</td>
<td><a href="mailto:jedwards@paradiseinn.com">jedwards@paradiseinn.com</a></td>
</tr>
<tr>
<td>Mobile # for Hotel Manager:</td>
<td>(1) 868-359-7502</td>
</tr>
</tbody>
</table>

| Name & Contact Information for secondary person (if applicable): | Richard Yates, ryates@paradiseinn.com, (1) 868 349 7512 |

#### Information to develop hotel specific thresholds for illness alerts

<table>
<thead>
<tr>
<th>Number of Rooms in Facility:</th>
<th>102</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Staff at Facility:</td>
<td>205</td>
</tr>
<tr>
<td>Low Season* (Please include month ranges)</td>
<td>May 1 - Oct 31</td>
</tr>
<tr>
<td>Estimated Average Occupancy rate for Low Season (i.e. X% rooms occupied)</td>
<td>64%</td>
</tr>
<tr>
<td>High Season* (Please include month ranges)</td>
<td>Nov 1 - Apr 30</td>
</tr>
<tr>
<td>Estimated Average Occupancy rate for High Season (i.e. X% rooms occupied)</td>
<td>77%</td>
</tr>
</tbody>
</table>

*Low and high season month ranges should occur sequentially, as in the example above*
**Attack Rate (AR%) Calculation**

\[
\text{Gastroenteritis AR\%} = \frac{\text{Syndrome Count}}{\left( \text{Number of rooms} \times \text{Occupancy Rate} \times \text{Average 2 Persons per Room} \right) + \text{Number of staff}}
\]

Alert generated if AR\% ≥ 2%

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For this reason, when a hotel registers we ask for:

- occupancy rate estimates for low and high seasons
- period for low and high season (i.e. Low=01 Jan-30 June)
- number of rooms and estimate number of staff
- average persons per room (if available)
### Types of Users

1. **Facility Users (hotels, guesthouses and other accommodations)**
   - Administrative staff/hotel nurses (reporting/data entry)
   - Hotel management and nurses? (data analytics)

2. **Country Users/Ministry of Health**
   - Epidemiologists/surveillance officers at National and Regional offices (data analytics)

3. **CARPHA**
   - THP Epidemiologist and Unit Head (data analytics)
Flowchart for Facility Users

Step 1: Hotels/facilities completes registration forms and submits to CARPHA

Step 2: Hotels/facilities are provided user names and passwords for (1) managers and (2) data entry clerks

Step 3: Managers and data entry clerks log in to the web application and report cases

Step 4: Managers log in to view reports and export details of cases

Step 5: Automated alerts are sent to facilities managers for aberration detection
Flowchart for Country Users

Step 1:
Country personnel completes registration form and submit to CARPHA

Step 2:
Country personnel are provided user names and passwords

Step 3:
Country personnel log in to the web application to view country level and facility level analysis

Step 4:
Automated alerts are sent to country personnel for aberration detection

Preventing disease, promoting and protecting health
Dear Partners,

Please fill out the following fields as completely as possible, as this will improve the user experience and functionality of the THiS web application.

Kind regards,
Your National Tourism and Health Program

### General Information

<table>
<thead>
<tr>
<th>Official Accommodation Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country:</td>
</tr>
<tr>
<td>Address:</td>
</tr>
</tbody>
</table>

| Generic Email (for general communications): |

### Information for Secure Access to Reported Data Application:

<table>
<thead>
<tr>
<th>Name of Manager:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email of Manager:</td>
</tr>
<tr>
<td>Mobile # for Manager:</td>
</tr>
<tr>
<td>Name &amp; Contact Information for secondary person (if applicable):</td>
</tr>
</tbody>
</table>

### Information to Develop Accommodation Alert Mechanism for Illnesses

<table>
<thead>
<tr>
<th>Number of Rooms in Facility:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Staff at Facility:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low Season (Please include month ranges, i.e. Jan-Feb, Jun-Jul)*</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Occupancy rate for Low Season (i.e. X% rooms occupied)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>High Season (Please include month ranges, i.e. Mar-May, Sept-Nov)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Occupancy rate for High Season (i.e. X% rooms occupied)*</th>
</tr>
</thead>
</table>
Process of Registration

1. Facility fills forms and submit to CARPHA
   carpha-tourismandhealth@carpha.org
2. Computer generates the registration
3. Login sent to Accomodation Manager
4. Data entry can start
Demonstration
URL: This.carpha.org  (no ‘www.’)
Self-Reporting

Tourism and Health Information System

Tourism and Health Information System

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.

Preventing disease, promoting and protecting health
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.
Registered Facilities

Tourism and Health Information System

Caribbean Public Health Agency
Tourism and Health Programme

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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, industry).

Preventing disease, promoting and protecting health
Login Page
Report Case - The Phoenix Resort

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...
<table>
<thead>
<tr>
<th>#</th>
<th>Field</th>
<th>Req*</th>
<th>Response Options</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Person reporting illness</td>
<td>R</td>
<td>Guest or Staff</td>
<td>To understand if the illness is circulating among guests or visitors</td>
</tr>
<tr>
<td>2</td>
<td>Name of hotel</td>
<td>SG</td>
<td>--</td>
<td>Where the illness is being reported from</td>
</tr>
<tr>
<td>3</td>
<td>Country of hotel</td>
<td>SG</td>
<td>--</td>
<td>Where the illness is being reported from</td>
</tr>
<tr>
<td>4</td>
<td>Age</td>
<td>O</td>
<td>Number</td>
<td>Is the illness occurring among a certain age (young, elderly)</td>
</tr>
<tr>
<td>5</td>
<td>Age Group</td>
<td>SG</td>
<td>--</td>
<td>Is the illness occurring among a certain age? (young, elderly)</td>
</tr>
<tr>
<td>6</td>
<td>Gender</td>
<td>O</td>
<td>Female, Male</td>
<td>Is the illness limited to males or females</td>
</tr>
<tr>
<td>7</td>
<td>Resident Country</td>
<td>O</td>
<td>Open text/drop-down</td>
<td>Is the person coming from a country where an outbreak or endemic disease occurs</td>
</tr>
<tr>
<td>8</td>
<td>Recent Travel</td>
<td>O</td>
<td>Open text/drop-down</td>
<td>Is the person coming from a country where an outbreak or endemic disease occurs</td>
</tr>
<tr>
<td>9</td>
<td>Symptom occurrence date</td>
<td>O</td>
<td>Date</td>
<td>When did the person first begin feeling unwell</td>
</tr>
<tr>
<td>10</td>
<td>Symptoms</td>
<td>R</td>
<td>(1) Diarrhea (&gt;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</td>
<td>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.</td>
</tr>
<tr>
<td>11</td>
<td>Additional Notes</td>
<td>O</td>
<td>Open text</td>
<td>Any additional information the person willingly provides (symptoms, health care sought, meals/places at or outside hotel, etc.)</td>
</tr>
<tr>
<td>Q#</td>
<td>Question</td>
<td>Response Options</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>---------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Are you a guest?</td>
<td>[Guest, Member of Staff]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Country of Facility</td>
<td>drop-down menu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Type of Facility</td>
<td>[Clinic, Guesthouse, Hospital, Hotel, Vessel, Other]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facility Name</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Age</td>
<td>Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age Group</td>
<td>Ranges [&lt;1, 1-4, 5-14, 15-24, 25-44, 45-64, 65-84, 85+]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Gender</td>
<td>[Female, Male, Other]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Resident Country</td>
<td>drop-down menu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Recent Travel</td>
<td>drop-down menu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Reported Date</td>
<td>Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Symptom onset date</td>
<td>Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Symptoms</td>
<td>(1) Diarrhea (≥3 loose stools in 24hrs); (2) Vomiting and/or nausea; (3) Fever</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(sudden onset, &gt;38.0°C or 100.4°F); (4) Cough/sore throat/breathing difficulties;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5) Bleeding (gums, nose, sputum, under skin, stool) not caused by trauma; (6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Headache; (7) Joint or muscle pains; (8) Eye pain/facial pain; (9) Generalized</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>rash; (10) Blurred vision or convulsions or altered consciousness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Additional Notes</td>
<td>Open text</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example of a case report

1. *Guest or Staff: Guest
2. Country of hotel: [auto gen at login]
3. Type of facility: [auto gen at login]
   Facility Name: [auto gen at login]
4. Age: 24
   Age Group: [auto gen based on ‘Age’] 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]
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 four fields are required to submit a report
Once a hotel completes a Data Entry report, the data is used to populate a Report 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)*
Dashboard - Overview

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
Dashboard - Demographics

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

Breakdown of syndromes by Age Group
Charts of each individual Syndrome stratified by Guest vs. Staff over specified Time period (shown here is epi weeks 1-52)
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.
In the live dashboards, a function to export all data from the report will be available.

Charts/figures can be exported in various formats.
Resources Available

User Manual

Instruction flyer for data entry persons

Information Pamphlet for visitors in accommodations
Instructional Videos for Accommodation

https://www.youtube.com/watch?v=evATeKJIBXQ&t=2s

Preventing disease, promoting and protecting health
Demonstration Account - The Phoenix Resort

Login for manager (dashboard):

Username: manager@phoenixresort.com
Password: 123456

Login for data entry:

Username: this@phoenixresort.com
Password: 123456
Country Demonstration

During the demonstration, we will cover:

• Logging into THiS
• Viewing data summary by facilities in country
• Viewing an overall summary of syndromes
• Viewing system alerts
• Viewing charts
• Exporting data
Facility Demonstration

During the demonstration, we will cover:

• Logging into THiS
• Reporting a case as data entry clerk
• Analysing data as manager
• Viewing data summary by facilities in country
• Viewing an overall summary of syndromes
• Viewing system alerts
• Viewing charts
• Exporting data
Thank you!

CARPHA Tourism and Health Program
www.carpha.org/tourism
Carpha-tourismandhealth@carpha.org

Preventing disease, promoting and protecting health