

# RTBP Research Objectives

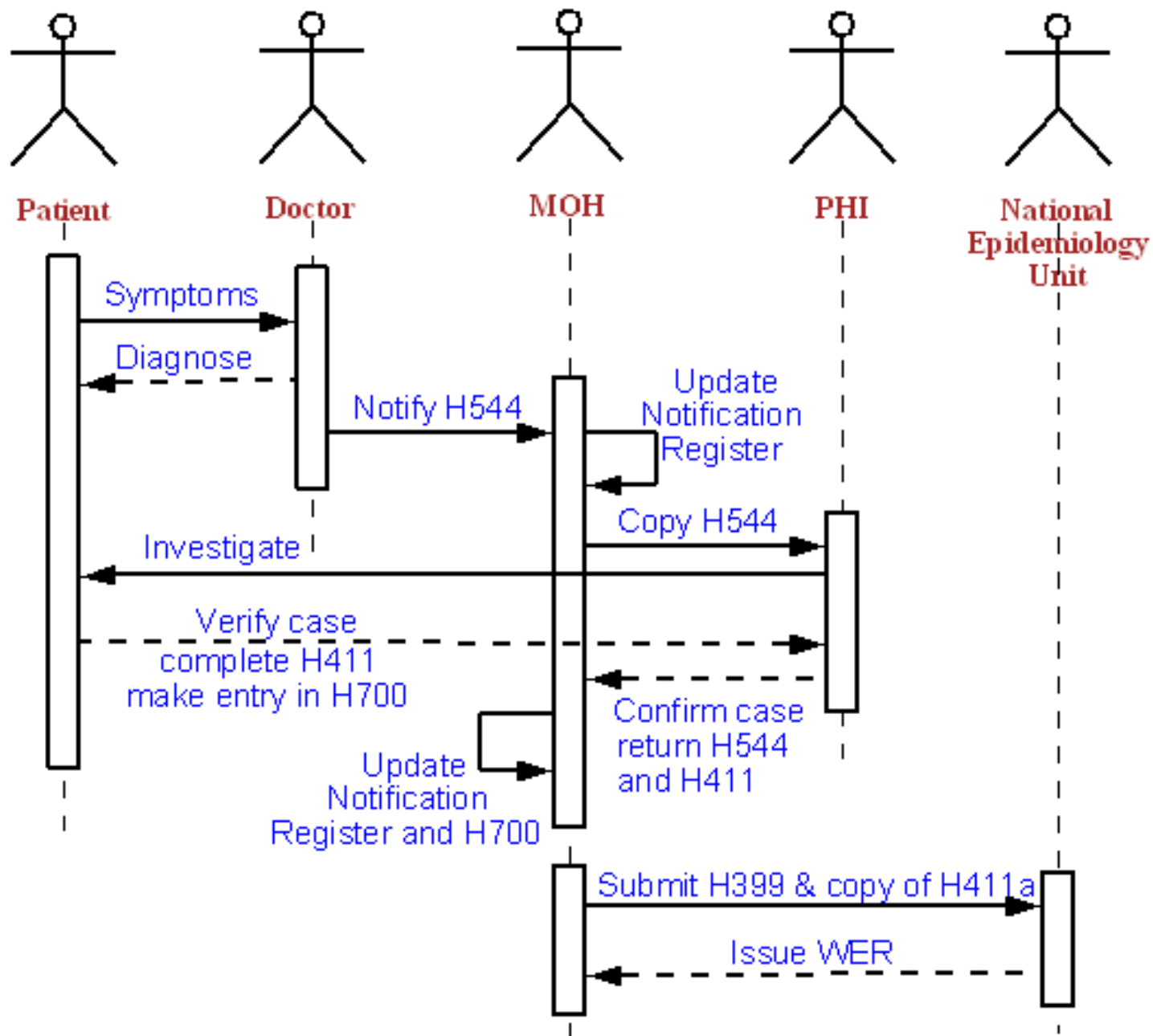


Sarvodaya



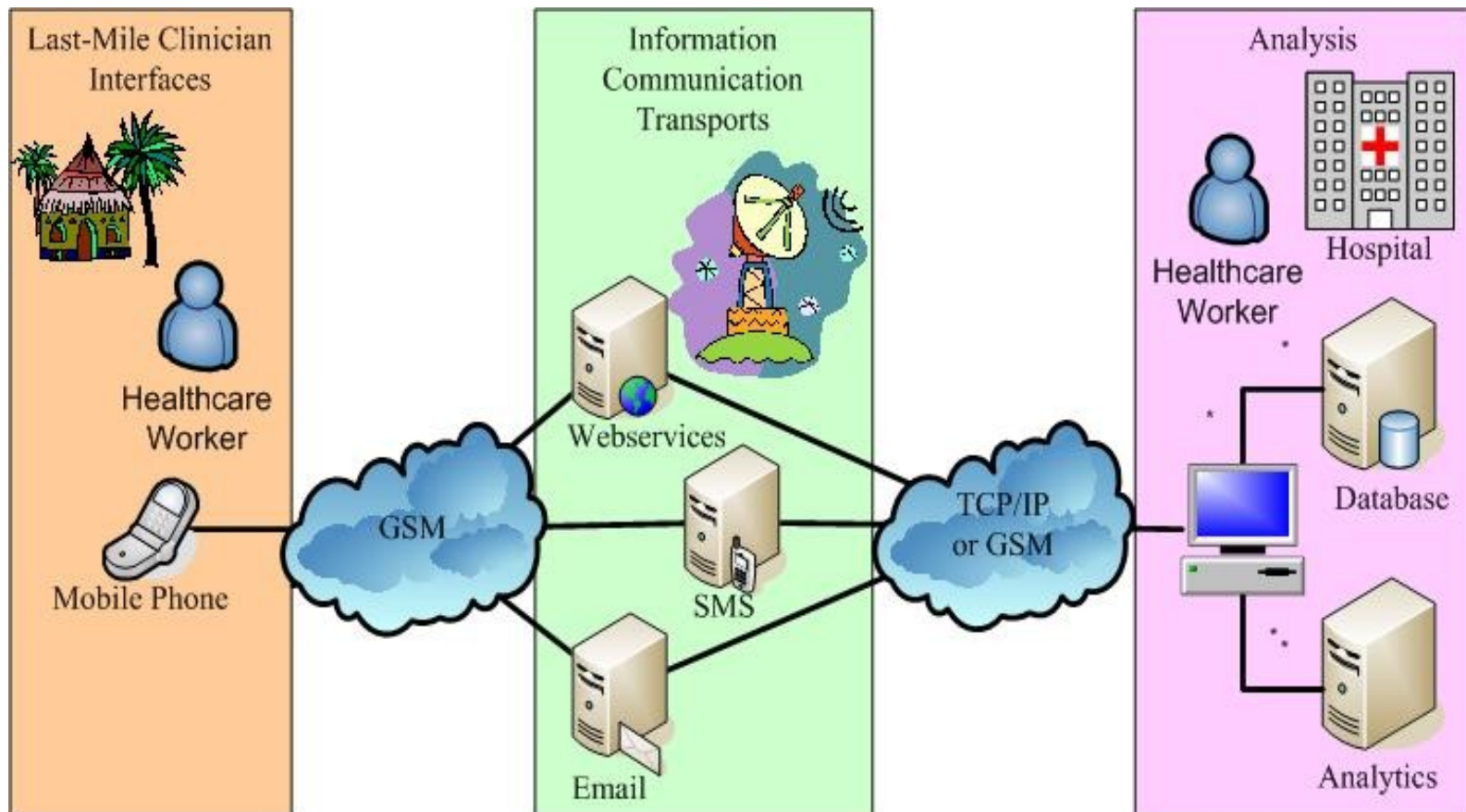
Nuwan Waidyanatha  
Senior Researcher / Project Director,  
LIRNEasia, Sri Lanka  
waidyanatha@lirne.net  
<http://www.lirneasia.net/>  
+94 773710394 (lk) +86 13888446352 (cn)

# Present Disease Surveillance and Notification

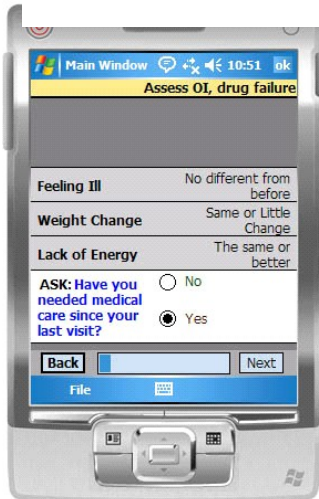
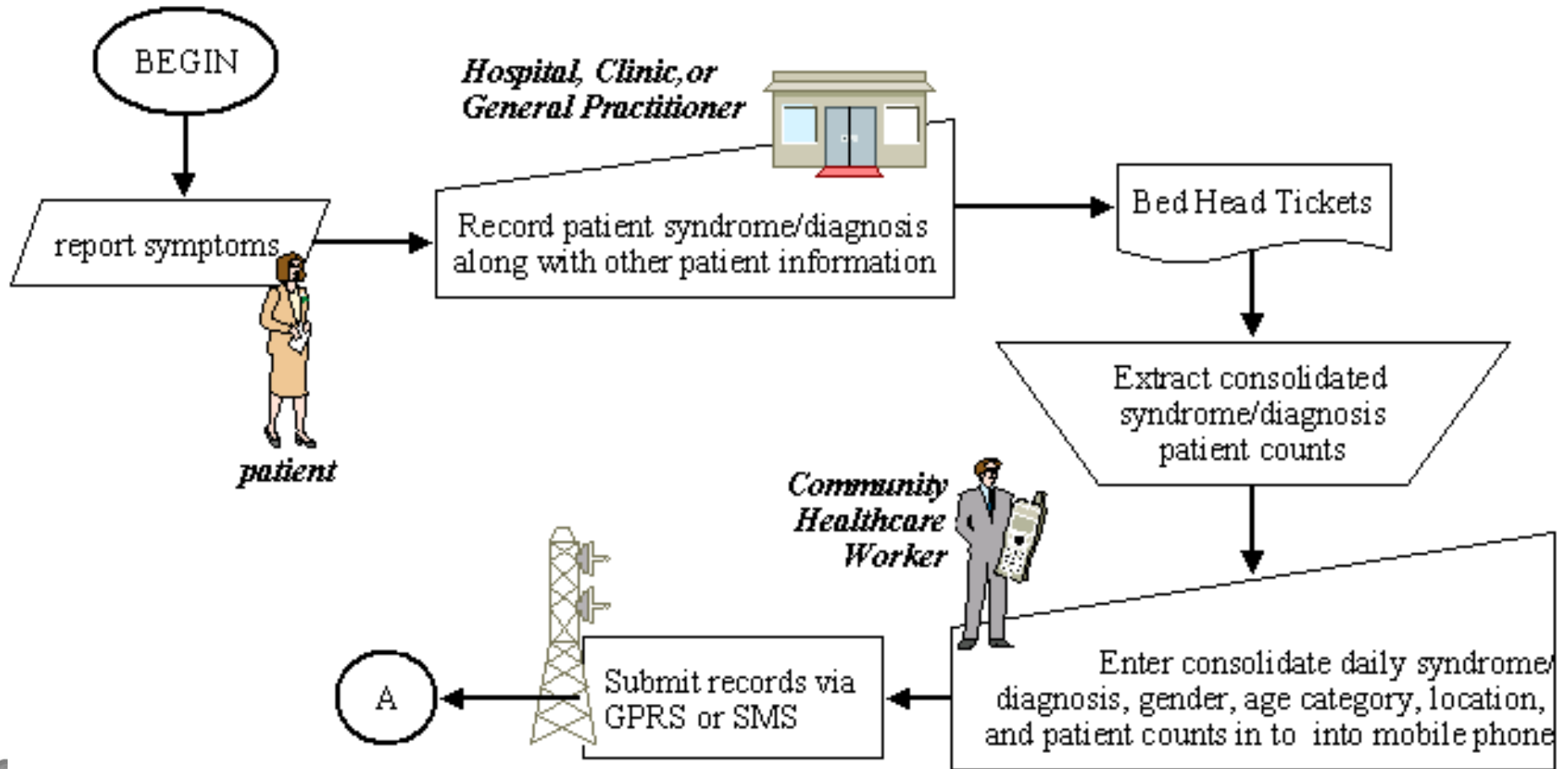


# Communication Architecture

“Can Biosurveillance Algorithms coupled with Pervasive Mobile Applications potentially be effective in the early detection of disease outbreaks?”



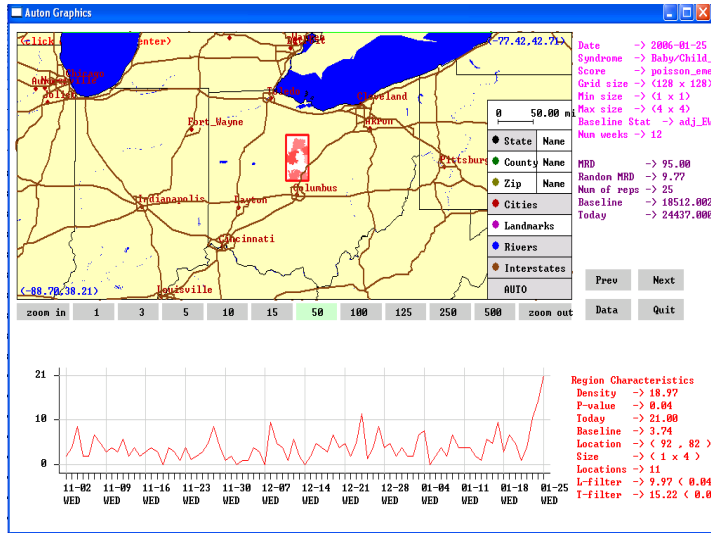
# Collecting and sending health data



**Symptoms, Signs,  
Diagnosis,  
Age, Gender,  
location**



# Analyze health data to detect diseases



**Geographical**

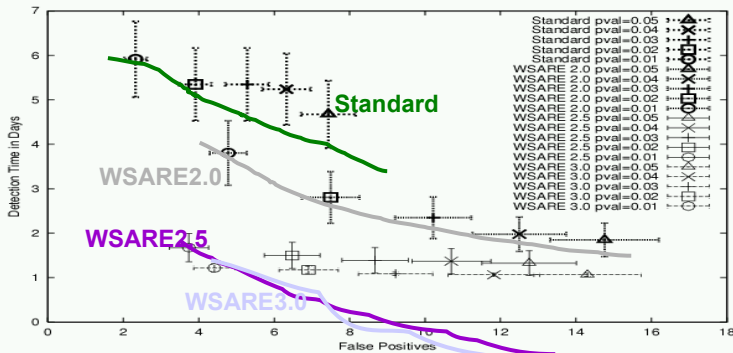
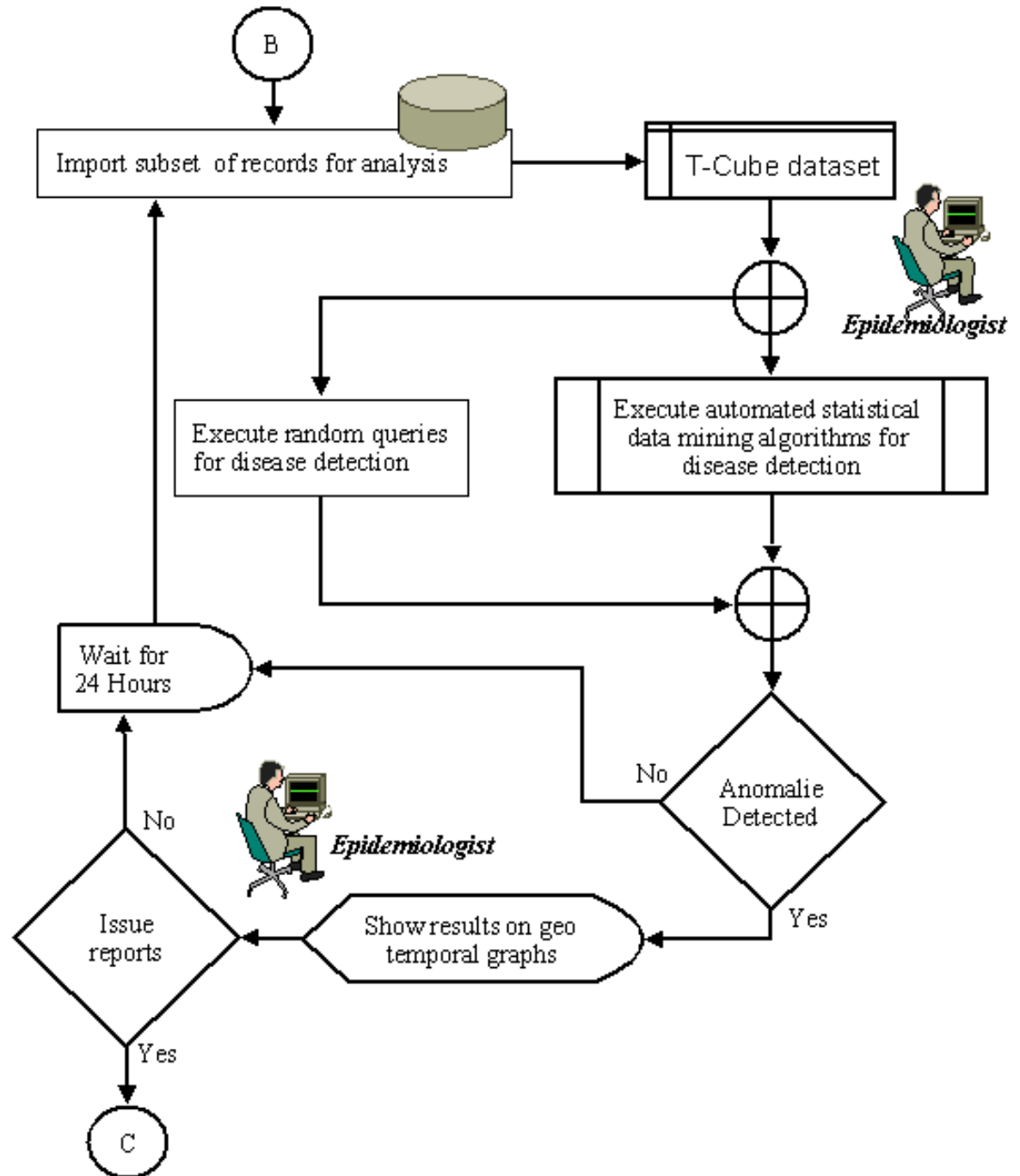


Figure 5: Scatterplot of Detection Time versus False Positives with Error Bars for Simulated Data

**Time series**



# Disease information reports



**Common Alerting Protocol Messages**

&

**Weekly Epidemiological Report**

**SAHANA**  
Disaster Management System

Incident: Earthquake  
Language: English

**DISEASE SURVEILLANCE MODULE**

Home  
Manage Diseases  
Add New Disease  
Edit Disease Details  
Report Disease  
Surveillance Report

SAHANA MAIN

Sahana Home  
Disaster Preparedness  
Messaging/Alerting Module  
Situation Awareness  
GPS Interface  
Missing Person Registry  
Disaster Victim Registry  
Housing Registry  
Image Tagger  
Organization Registry  
Request/Aid Management  
Shelter Registry  
Web Services  
Inventory Management  
Disease Surveillance Module  
Reporting Module

**Disease Surveillance Module**

The disease surveillance module is designed to capture information about disease spread and its management. Once data is captured, module will use various data mining and visualization tools to represent the demographic and morbidity and mortality data. The disease surveillance module could be used in less resourced centers as a diagnostic tool and in center of excellence as a monitoring tool.

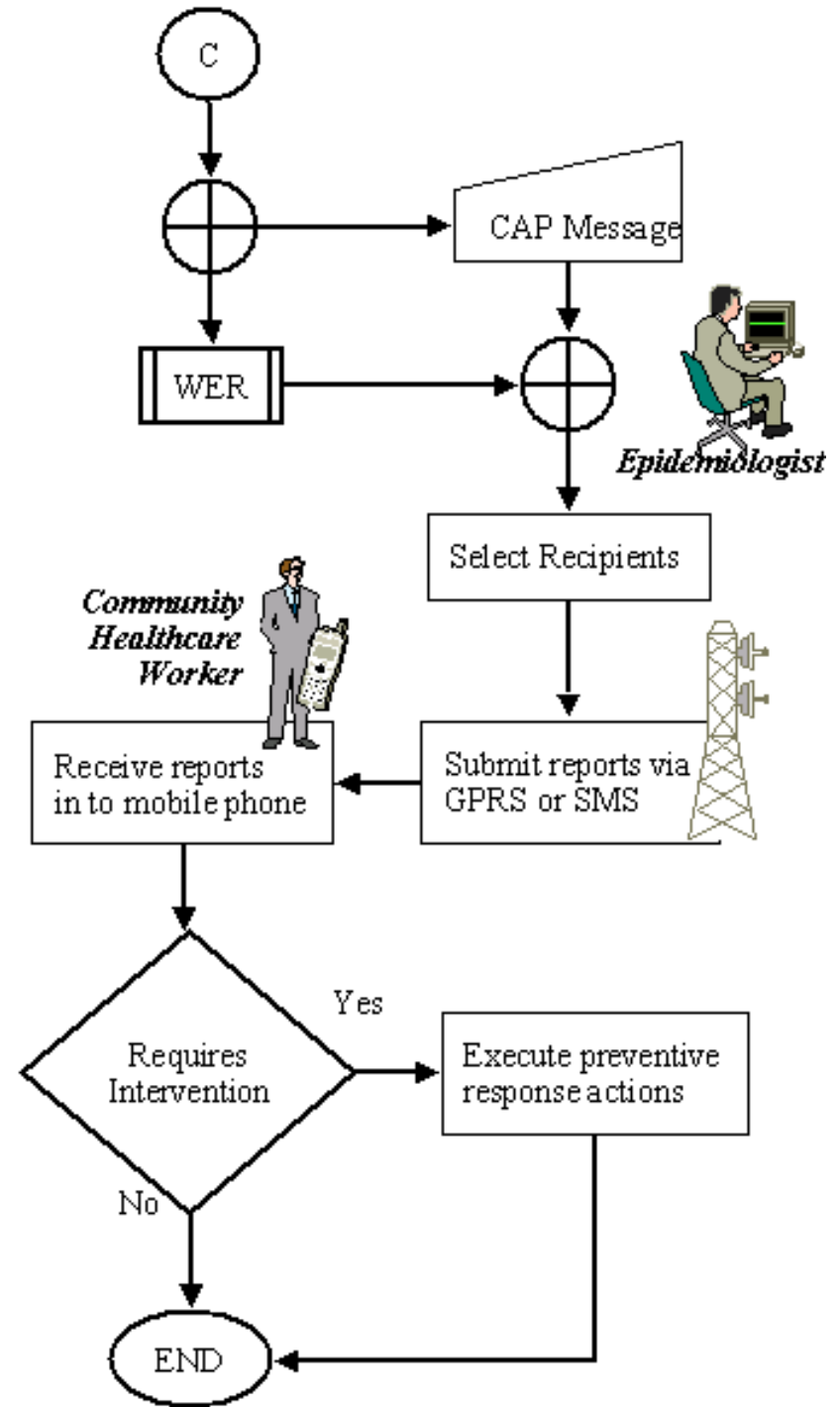
**Features include:**

- Add new disease for surveillance
- Case based data capturing on a particular disease.
- Graphical demographic and morbidity data visualization.
- Basic diagnosis aid tool system.

**Description of Actions:**

- **Add Disease.**  
Adding new disease and diagnostic criterias
- **Create data entry form.**  
Create patient data entry form for a particular disease
- **Reports cases.**  
Reporting a patient to the system
- **Surveillance Reports.**  
Disease data visualization
- **Case review.**  
Search and review disease cases

**Quick view**



# Specific Objectives

- 1) Evaluating the effectiveness of the e-Health RTBP for detecting outbreaks
- 2) Evaluating the latencies of communicating disease information
- 3) Contribution of community organization and gender participation
- 4) Developing a Toolkit for assessing e-Health RTBPs

# Research Matrix

		Exposed to RTBP				Unexposed to RTBP			
		Division 1		Division 2		Division 3		Division 4	
+		C01	C05	C09	C13	C17	C21	C25	C29
		H01	H03	H05	H07	H09	H11	H13	H15
-		C02	C06	C10	C14	C18	C22	C26	C30
+		C03	C07	C11	C15	C19	C23	C27	C31
		H02	H04	H06	H08	H10	H12	H14	H16
-		C04	C08	C12	C16	C20	C24	C28	C32

- Hxx denotes Community-Healthcare-Worker
- Cxx denotes Community.
- cells with “magenta” background has a presence of a Community-based Healthcare facility (+)
- cells with “orange” background do not have a formal Community-based Healthcare facility (-).
- Community-Healthcare-Worker (“yellow” cells)

# Hypothesis

- 1. Healthcare Workers exposed to the RTBP will respond more effectively than the Healthcare Workers in the Control Divisions**
- 2. Epidemiology Units exposed to the RTBP will detect disease outbreaks and contain than Epidemiology Units in Control Divisions.**
- 3. Healthcare Workers and Epidemiology Units exposed to the RTBP will show interest and recognize the benefits in adopting e-Health programs opposed to Control Divisions.**
- 4. Communities exposed to the RTBP will have confidence in the National Disease Surveillance and Notification programs more than Control Divisions.**
- 5. Healthcare Workers and Epidemiology Units exposed to the RTBP will leverage ICTs in other areas more than the Control Divisions.**
- 6. Communities that have non governmental Community-based Healthcare Organizations will perform better than communities that do not**