

# **Real-Time Bio-Surveillance Program: Field Experiences from Tamil Nadu, India**

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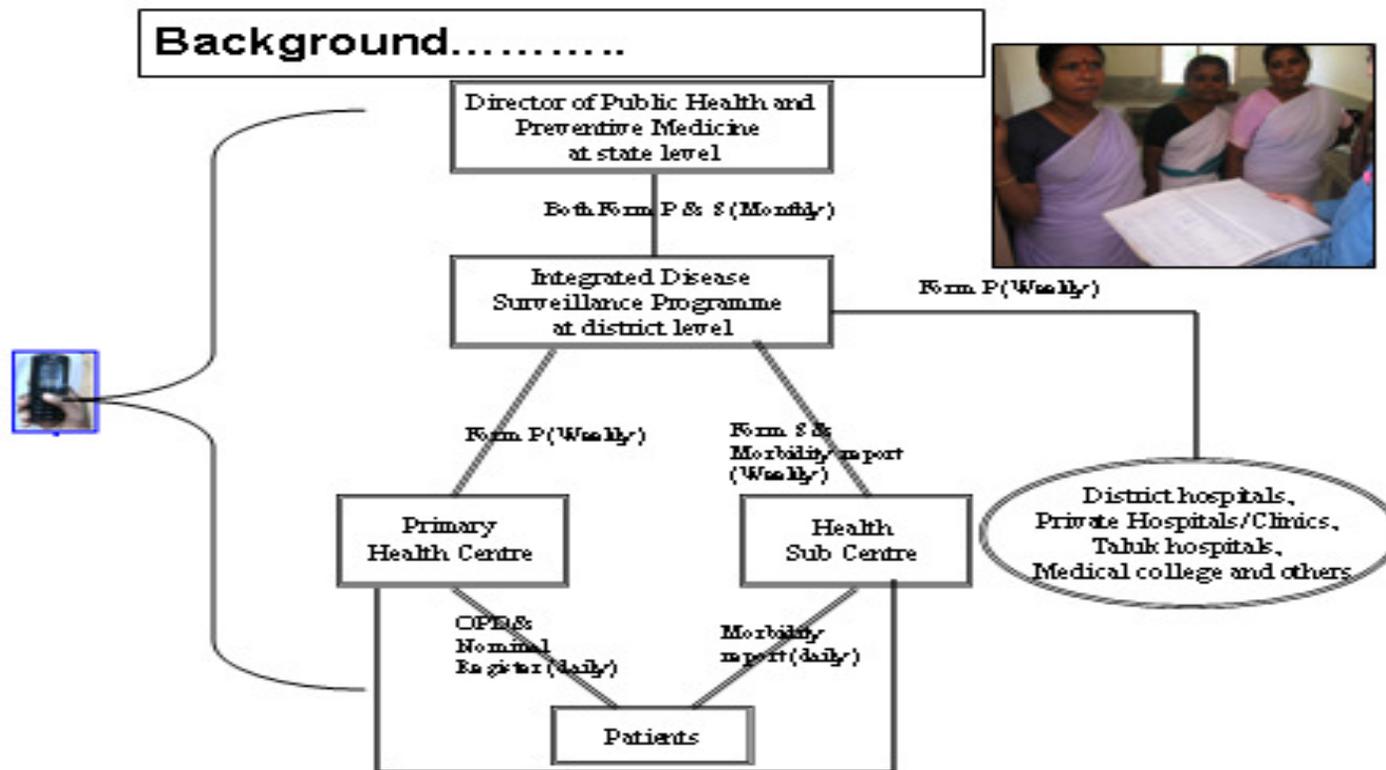
**Seventh Conference of IASSH, Banaras Hindu University, Varanasi**

# Background

✓Major outbreaks in 1996 was dengue fever/dengue shock syndrome.

Recently there was a fever like disease outbreak: chikungunya, recorded in the southern part of rural Tamil Nadu.

This went unnoticed, due to the lag in reporting by paper-based system.



# Goal

- Collecting patient information real-time through mobile phone



## **Implementing Partners**

- IITM's RTBI, India
- LIRNEasia, Sri Lanka

## **Financial support**

- IDRC, Canada

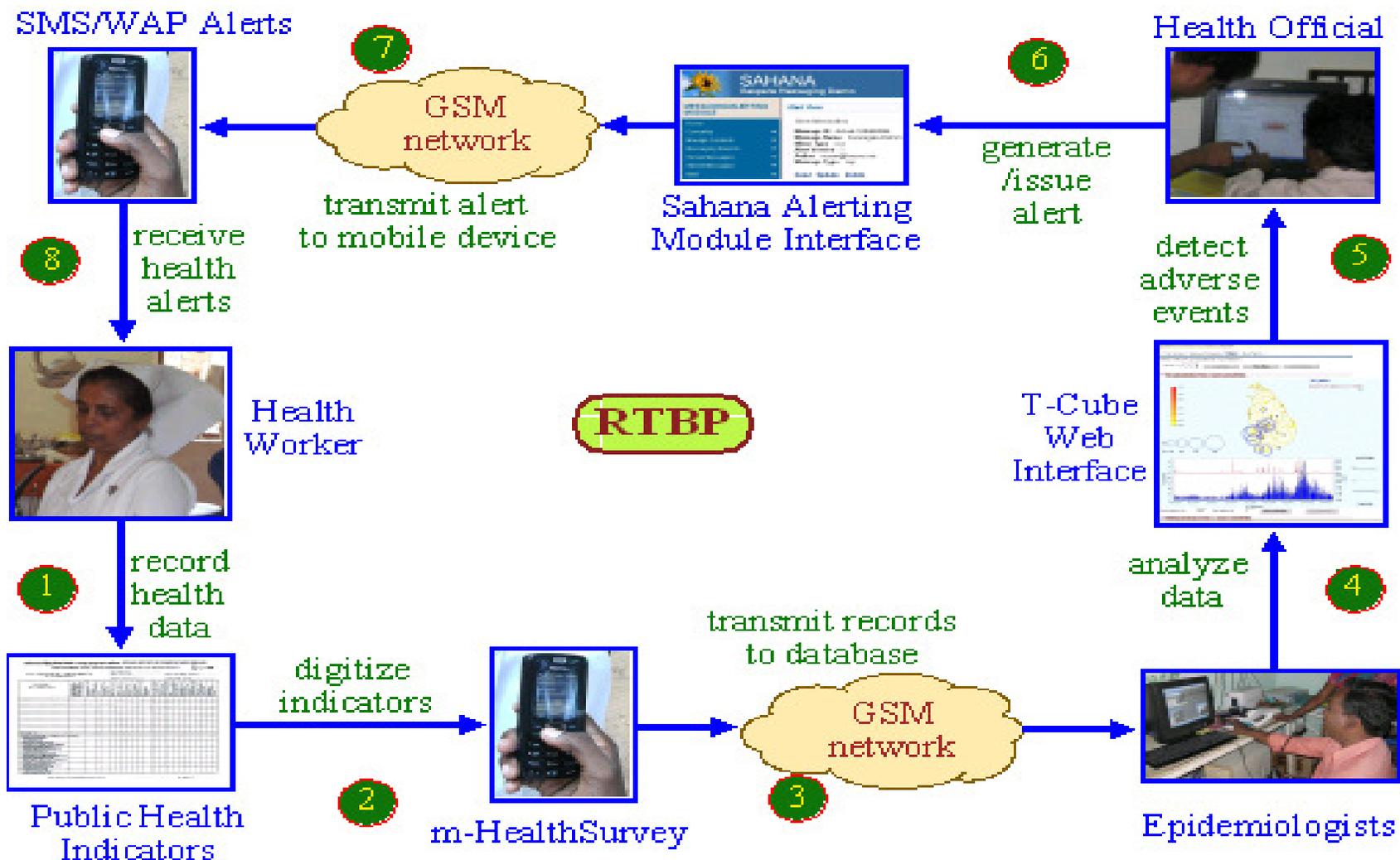


# Methodology

- A project orientation programme for 25 health workers was conducted to create awareness about pilot project's goals and objectives
- One mini survey was carried out among these 25 health workers to understand their background and characteristics
- A two-day technology-training workshop organized in May 2009
- Standard Operating Procedures (SOP) of m-HealthSurvey application was demonstrated in the workshop
- SOP involves three basic steps:
  - (1) install and configure the application;
  - (2) submission of data;
  - (3) transmitting the patient data using GPRS
- The health workers were given free mobile phone from the project
- From June 2009, they started entering health data
  - (1) Patients' location
  - (2) Age
  - (3) Gender
  - (4) Disease
- A field staff was stationed to monitor them and their feedback was collected



# Data collection method and information flow



# Demographic characteristics of Health workers

- All are female in the age group of 41 to 50
- Majority (68 %) had studied up to 10<sup>th</sup> Std
- Majority of them have 16 to 20 years of experience in the health field



# Experiences with the health workers during the technology workshop

- Most of the health workers had ever SMS
- Some of them were totally illiterate in handling mobile phone even for voice interaction
- This was their first experiences using mobile keypad for entering text
- All the health workers had become familiar with mobile phone data entry
- Some of the health workers learnt very quickly and started helping others
- They also gave a lot of suggestions to improve the m-HealthSurvey application and report generation page on the backend database
- There was initially some resistance to getting involved and complying with the proposed technology intervention



## Experiences with health workers during submission of health data

- There were erroneous spelling mistakes mainly on disease information
- The time taken to submit health data per patient was two minutes
- The health workers of Nerkuppai PHC were unable to enter data
- Nerkuppai PHC had a fear in entering data
- This will further be seen and reported to their higher officials and might result in unnecessary administrative problems to them in future
- This claim was later checked with DDHS office and the DDHS denied and stated this an excuse framed by the concerned health-workers
- Each health worker was again explained the purpose and objective of the project
- Health workers were convinced and assured of regular data entry
- Regular field visits were made to the respective HSCs to build good rapport and continuous motivation was given



## Experiences with Paramedical staff and Medical Officers at PHC level

- There were more patients' inflow in the PHC when compared to HSC
- Planned to collect these data through a web based data entry
- But, later it was dropped due to lack of man power and also frequent failure of internet connectivity
- Project appointed Field assistants to enter data on mobile phone from October 2009



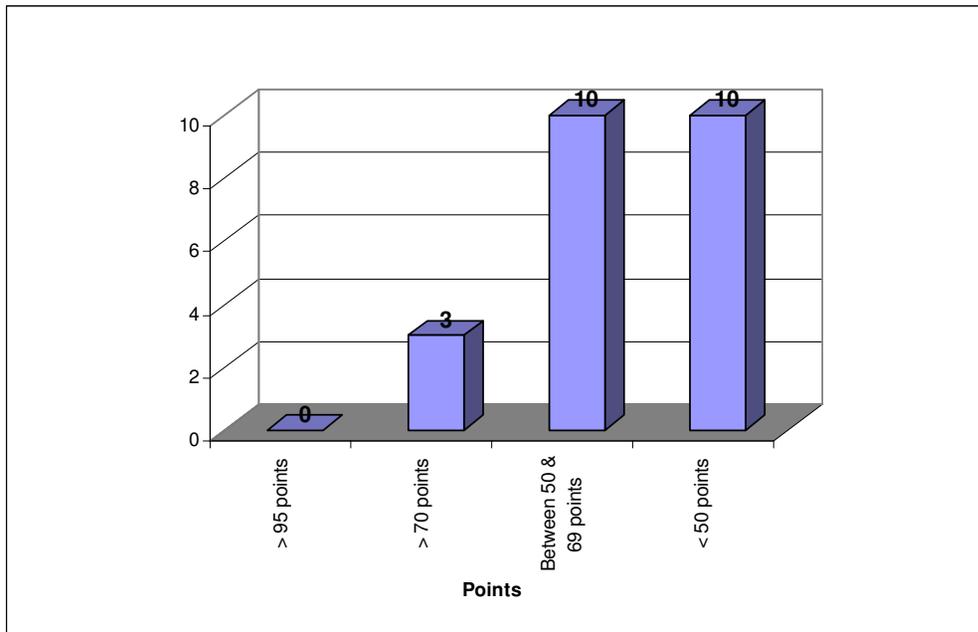
# Experiences with staff at DDHS

- In the beginning stage, there was lack of rapport building among RTBP Project staff with DDHS officials
- Constant visit was made to DDHS at fortnight intervals
- PHC/HSC uses a standard format and DDHS will further consolidate and submit it to DDHS on a monthly basis
- The DDHS suggested that a cost benefit analysis can be worked out (present paper based reporting cost vs. RTBP cost) in order to show the advantage of RTBP

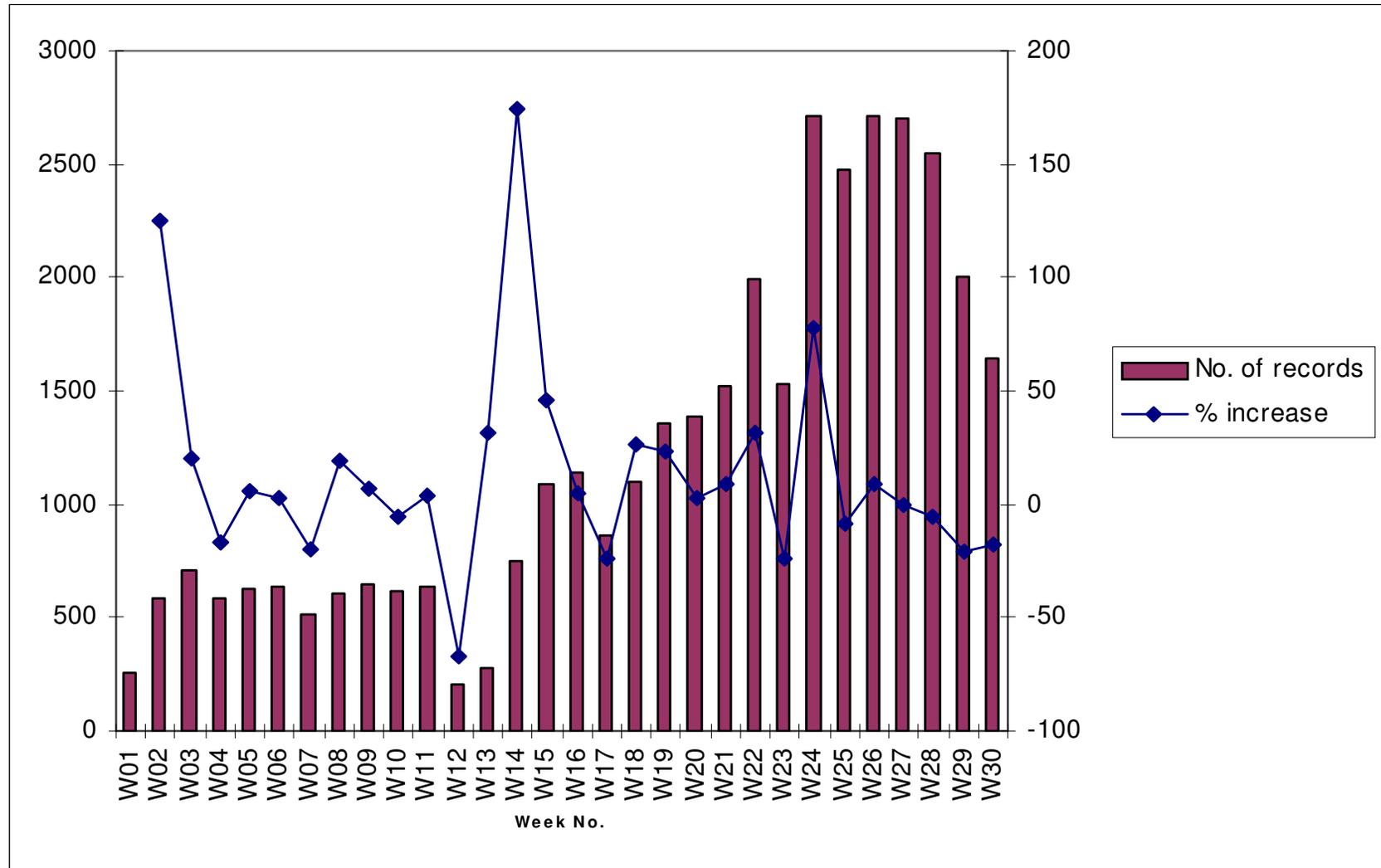


# m-HealthSurvey Certification Exercise

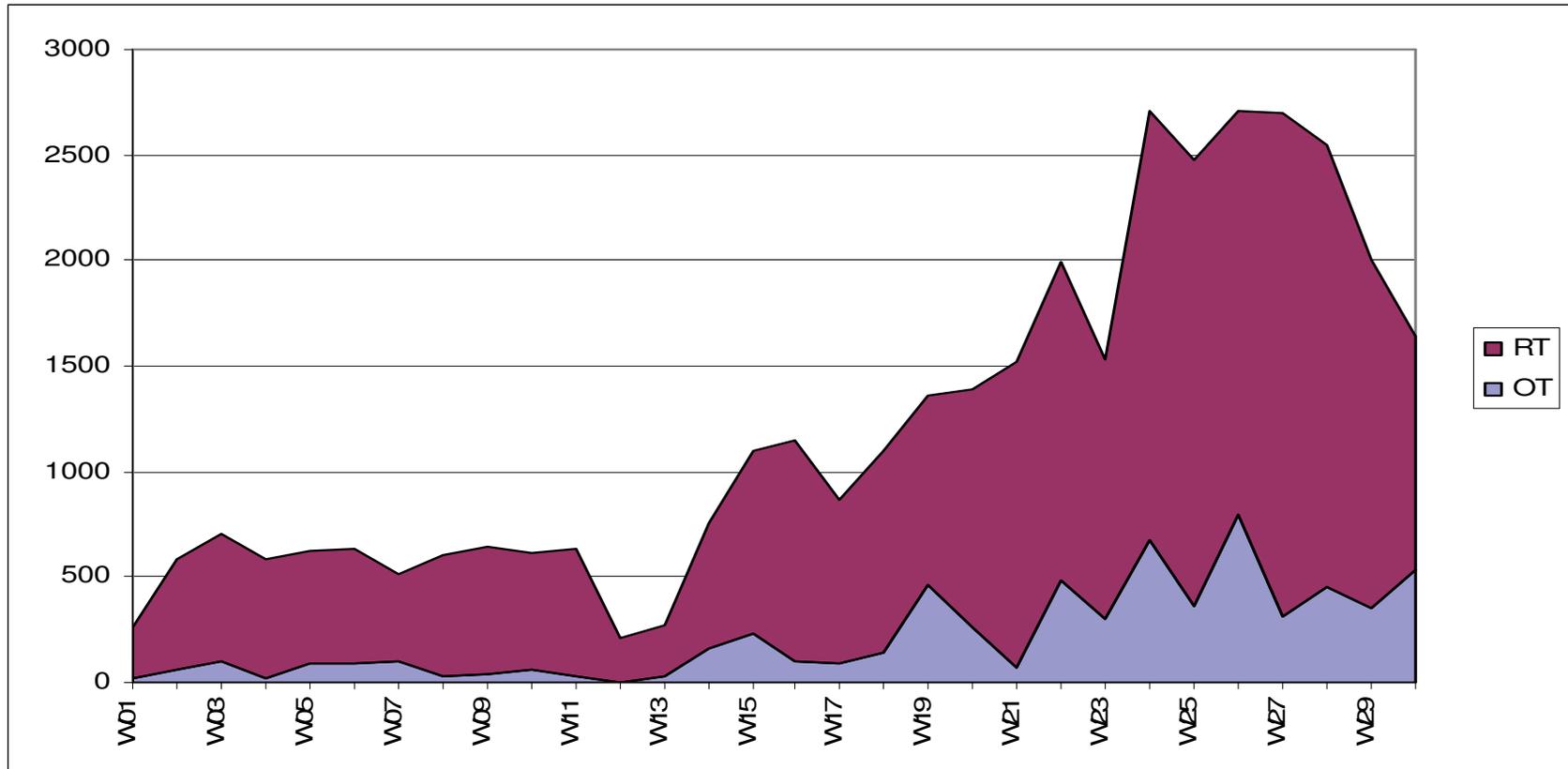
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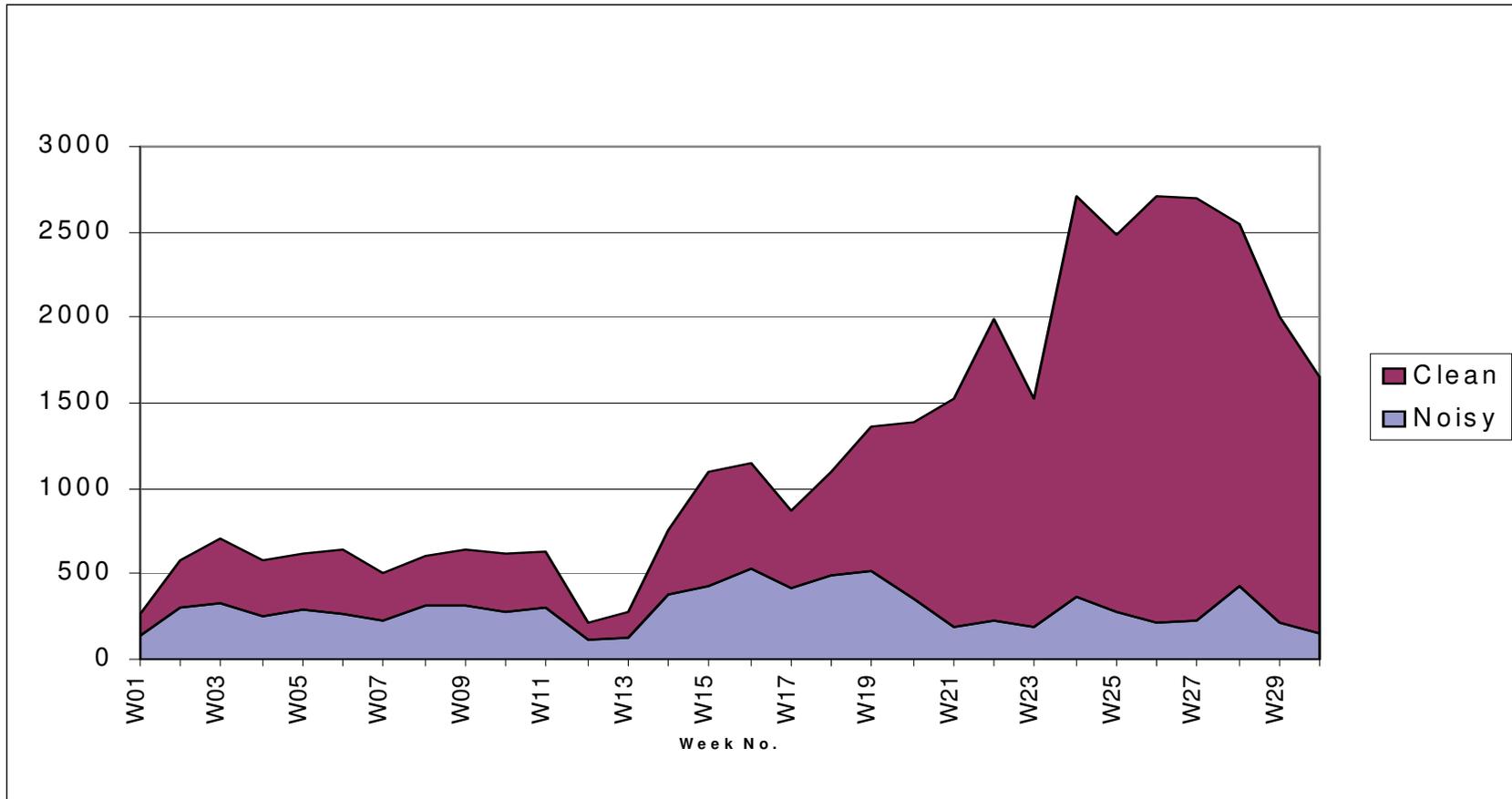
# Number of records



# Real Time (RT) vs Off Time (OT) data submission



# Clean and Noisy records



# Benefits

- Health officials could concentrate more on other developmental works
- Staff can generate the disease prevalent report on location wise
- They can notify the health workers at the right time with right forecasting information
- Staff will have more time to do planning, monitoring and re-planning on their own way
- Encourages staff to be more systematic when analyzing the health data
- Sustain the reporting system over period of time through regular use
- Provides data for subsequent evaluation and lessons learning
- Can provide aggregated information for results based management.



# Shortcomings

- Entering data in the off time
- The error rates were observed



# Recommendations

- The health workers need to be continually trained and monitored
- Simplification of data entry on m-HealthSurvey
- The present data collection system should be compared with RTBP tool
- Project needs to evaluate the feasibility of appointing a separate project staff to enter data when the project further expands to other regions

# Conclusions

- Health workers have acquired the ability to enter data
- However, there are some hurdles that need to be overcome like error rates
- Simplification of the process of the data entry submission
- Required to improve real time records counts

**THANK YOU**