Electronic Medical/Health Record

A way to realize it

Research Study

Application of *open*EHR system to Tuberculosis program in Cambodian public health sector

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Research purposes

The research is seeking a better way to use state of the art Electronic Health Record technology to:

- facilitate data entry and storage of TB records,
- tackle on-demand retrieval of TB patient record, anywhere and anytime,
- allow for continual records to follow-up a TB patient, and
- integrate with other types of Electronic Record, such as Maternity and Metabolic syndrome pertaining a patient.

More broadly, the research will evaluate the possibility of introducing openEHR approach in Cambodian public health sector

Presentation at a glance

- Current situation of Cambodian HIS
- TB Information Flow
- Feedback from health managers
- Foreseeable barriers
- Conclusion

Current situation of Cambodian HIS

- Cambodia has been using some kinds of HIS （Health Information System） which only bases on the PAPER medical records from hospitals and health centers.
- It takes 20 days for the aggregated record of diseases to reach the ministry and other concerned institutions. Aggregated TB record is sent to the ministry every three months.
- The record is aggregated stage by stage from health centers and hospitals until the Department of Planning and Health Information （Ministry of Health）.
- The final processed report is difficult to verify and determine the quality at central levels.
- TB medical history is filed in paper, which is subject to losses and difficult to manage when a patient is referred from one place to another.
- There is no prospect that all types of medical records of a patient can be integrated.

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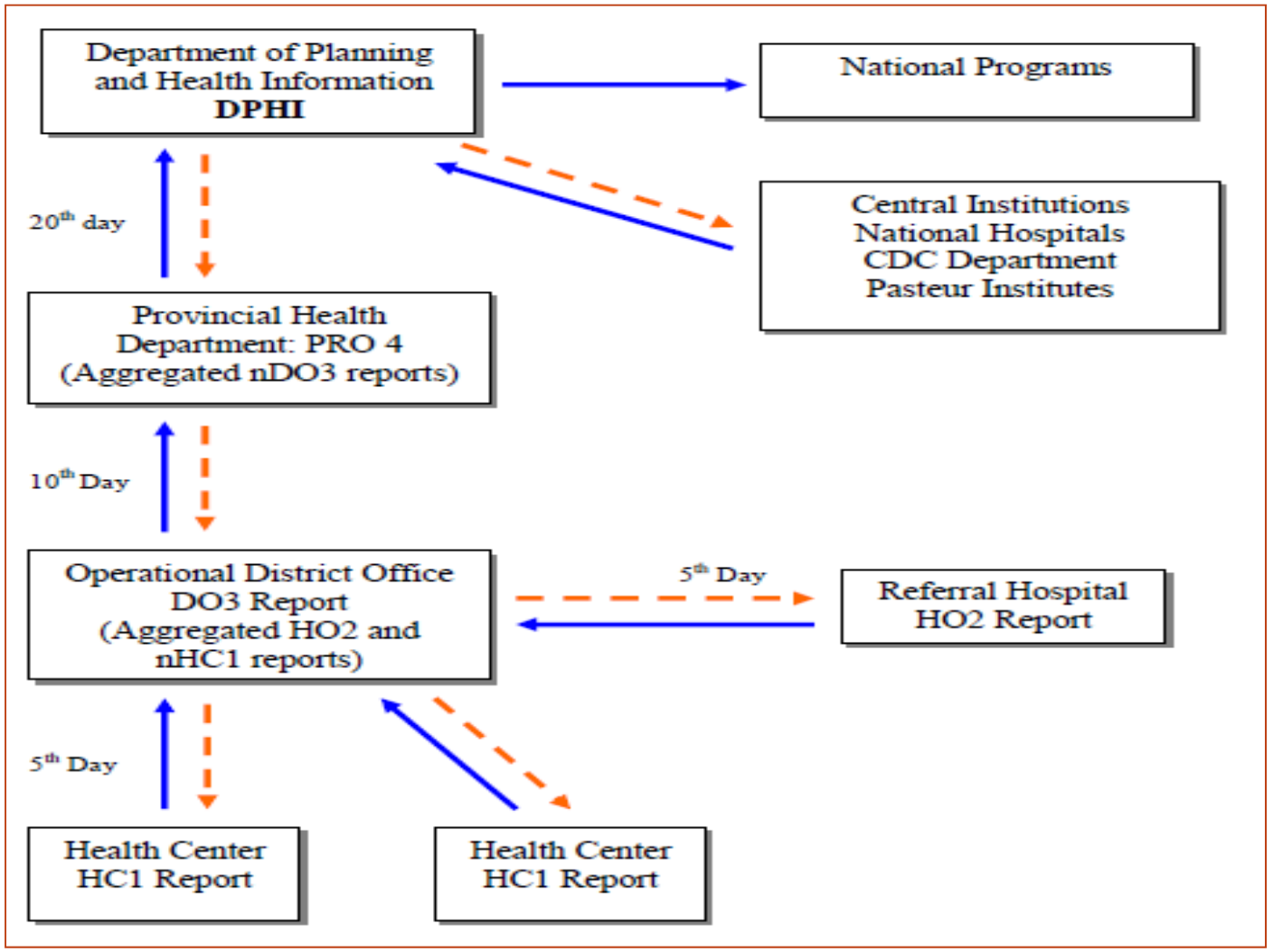
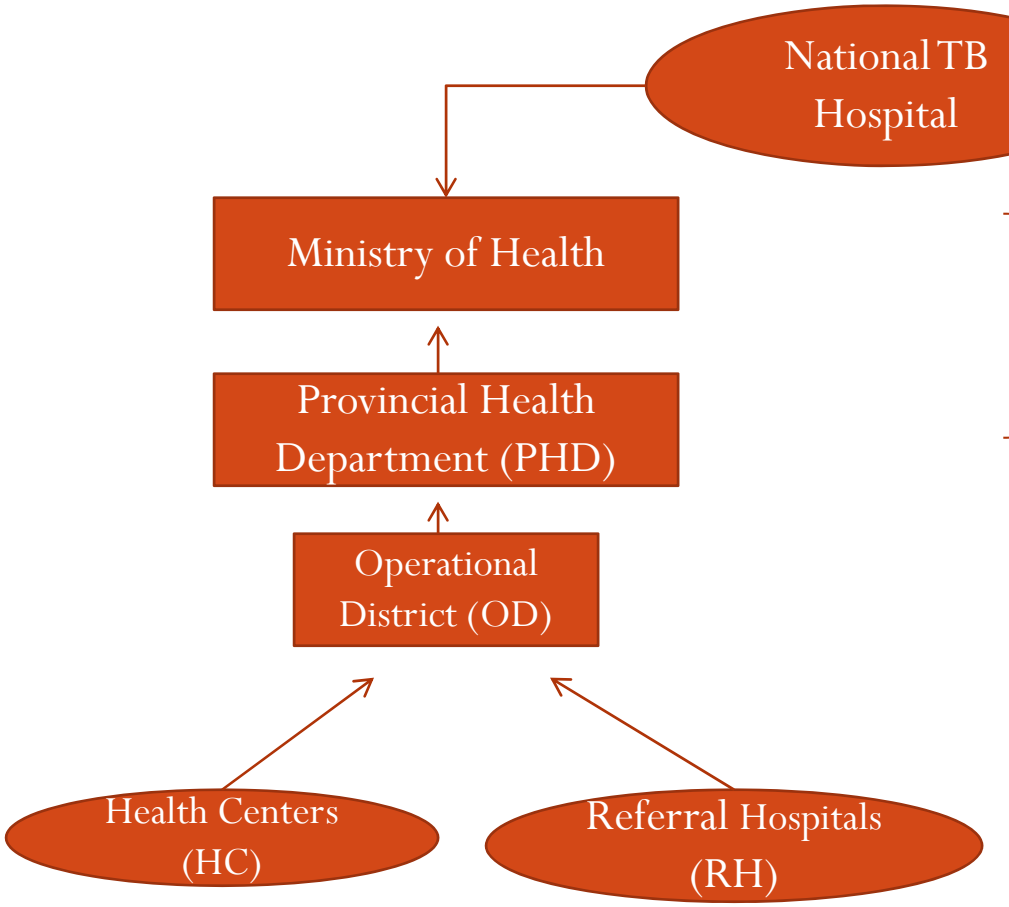


Medical data collection process in the Ministry of Health

National TB Information Flow



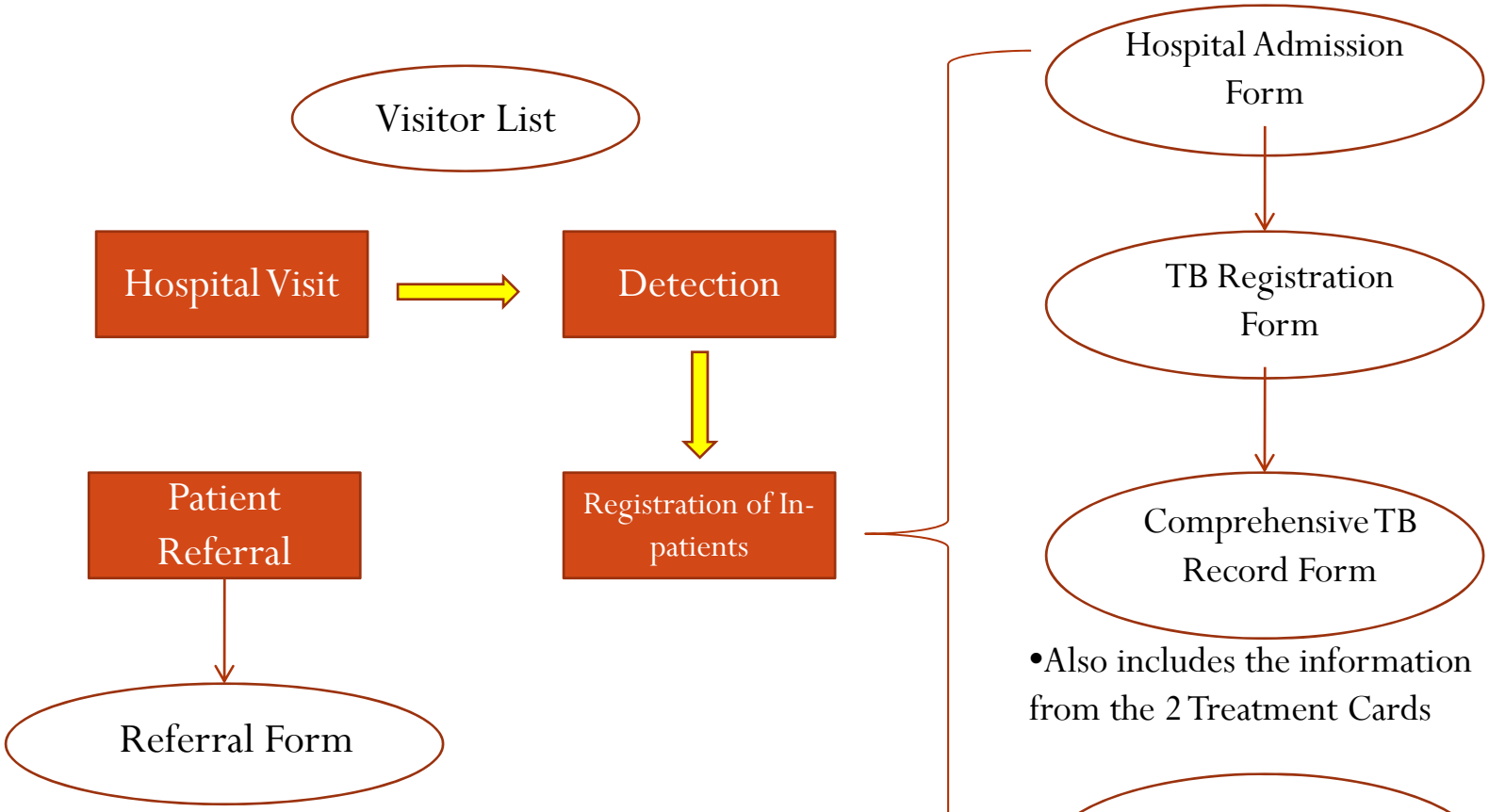
Top management
- Planning
- Receive aggregated information

Middle management
- Merge detail information
- Aggregate information

Local Management
- Detection
- Treatment
- Detail disease recording

At OD level
- Some kind of EMR system used by OD staff for keeping merged TB registration records
- It can generate enough aggregated statistic reports
- Stand-alone and TB information cannot be integrated with other types of diseases

Information Flow in the National TB Hospital

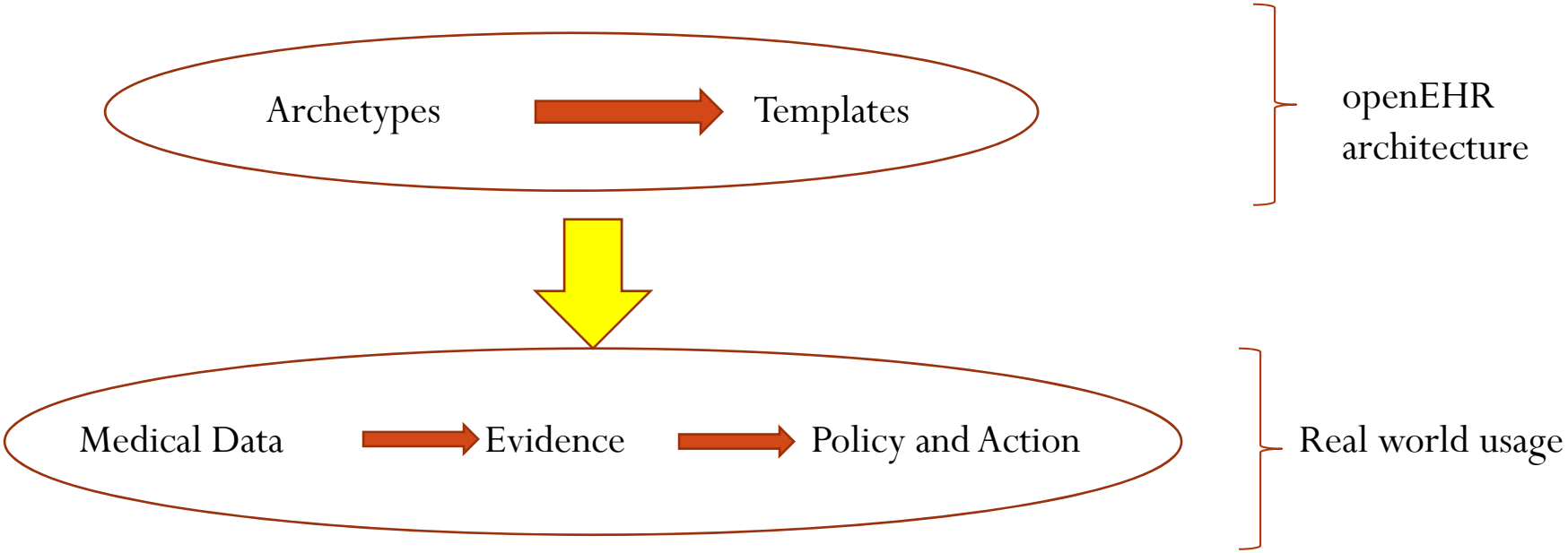


Some Rationales for the Research

- Ministry of Health has standardized:
  - Directly Observed Treatment （DOT）,
  - The information flow and,
  - The record management

  This means TB template forms can also be standardized and used across the country.
- Based on the national TB information flow （see the slides）, a better approach is needed for:
  - Some level of health data security
  - Integrated health information at care points （if possible web-based）
  - Reduction of paper-based record at care points （health centers and hospital）

What we want...



- Data
  - quality and sharing can be accomplished
  - accurate, timely, and complete
  - Integration
  - Standardization
  - Simplicity
  - Reliability and
  - Computerization

Foreseeable barriers

- Lack of IT infrastructure
  - internet and its speed, service price, electricity shortage, etc.
- Certain level of human resources, though not substantial, is needed.
- Staff motivation issues.
- Institutional willingness to share their keyboard work

Demo

Preliminary feedback from Health Managers

Feedback from the Director of DPHI （Department of Planning and Health Information ） and the vice chief of health information office:

- EHR system is the basis of HIS
- Archetype/template-based approach of openEHR is believed to be viable in terms of flexibility and economic aspects
- A committee should be set up for discussing and composing templates for various diseases
- There should be one sample hospital that adopts the openEHR system before moving further to the whole public health sector implementation
- There should be a good way to solve the ID number issue because currently all health facilities maintain the number separately
- Patient privacy and data security is one of the most important aspects to look at if patient data is to be shared

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Different perspectives…

- User friendliness
  - Despite being auto-generated, the UI look fine and easy to understand and use
- Meeting the local need
  - The TB templates currently set up in the Tool is not yet enough, more templates needs to be created for better following up a patient
- Policy
  - openEHR approach is in line with the Ministry intention to set up the national EHR system, which is the backbone of the HIS
- Management
  - It is agreed that archetype/template makes openEHR flexible and the standard mechanism will facilitate record management of diseases
- Economic
  - There are questions on the infrastructure as mentioned earlier

Conclusion

- openEHR is estimated to be feasible and viable for its implementation in Cambodian public health sector.
- The implementation plan should start from two hospitals to prove the awesome power of openEHR.
- Tuberculosis is the first step prior to implementing the openEHR approach to other diseases. And we still have to break through the aforementioned barriers

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THANK YOU!

Questions, comments welcome…