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Session 1: Development Updates

eHealth services and its impact in health care

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(Wednesday, 7th September 2005, 1.45pm – 4.30pm)

Brunei eHealth

Presentation

by

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September 2005

This Presentation

- Background and progress so far
- eHealth
 - Definition and Scope
 - Priorities & Strategy
 - International Experience: Evidence of Impact
- Implementation in Brunei
 - Change Management & Organisation
- Implementation in Brunei: what and how?
 - Health Care and Surveillance
 - Infra-Structure: Networking & Telecom
 - Other, e.g. security & confidentiality
- Other Remarks
- Costs and Schedules

The Health Sector

- Specialisation & sub-specialisation
- New Diseases
- Emergence of a Private sector
- Increased population expectations
- Costly institutions
- Costly technologies
- Evidence of technology impact
- Empowering communities & individuals
- Modernising old, manual health info systems



Health Sector Reform

The Health Sector

- True for all countries: industrially developed or developing.
- Also referred to as "informatics & telematics" support to the health services.
- Scope is:
 - Clinical care
 - Knowledge "bases"
 - Management
 - Surveillance
 - Training and Education

eHealth: what is it?

An umbrella term to refer to the uses of Information & Communication technologies (ICT) in the health sector.

Simple Model of "eHealth"

**Resource
or a User**

Specific Task
or Function

**Resource
or a User**

Specific Task
or Function

Simple Model of "eHealth"

Users, e.g. Care Provider, Patient, Administrator, Policy Maker, A Company, the public, Overseas Users, ..

Source or Resource, e.g. a market, knowledge-based system, literature services, statistical data bases, ...

Applications, e.g.:

- Clinical
- Messaging
- Monitoring & Control
- Access to information
- Extraction of data
- Broadcast
- Education
- Purchase commodity/service

Prerequisites:

- Prior Agreement
- Authorisation
- Standards
- Protocols
- Legislation

Users, e.g. Care Provider, Patient, Administrator, Policy Maker, A Company, the public, Overseas Users, ..

Source or Resource, e.g. a market, knowledge-based system, literature services, statistical data bases, ...

within a country, or between countries

Brunei eHealth: what does it mean?

- The uses of of Information & Communication technologies (ICT) in the health sector for the improvement of:
 - The quality of Medical care to Bruneians;
 - The geographic coverage of health care;
 - The economics of health care;
 - Management of hospitals and clinics;
 - The education and training of health care staff

Impact on the Health Services: Examples from Brunei

- Percentage **time** of Health care staff spent on information activities, instead of health care.
- Patients Medical **Records**:
 - scattered all over,
 - lost,
 - out of date, or
 - incomplete.
- Unnecessary **patient referrals**.
- Wasteful **repetition** of check-ups, diagnostic tests.
- Shared **courses** of “Continuous Medical Education”

Impact on the Health Services: Evidence from other countries

- Percentage time of Health care staff spent on information activities, instead of health care.
- Patients Medical Records:
 - scattered all over,
 - lost,
 - out of date, or
 - incomplete.
- **South Africa, Gauteng Province, 5 hospitals:**
 - **Nursing staff time boost by 30% to 50%,**
 - **Re-stocking at the Ward level: cut from 3-days to 12-hours.**

Impact on the Health Services: Evidence from other countries

- Unnecessary patient referrals.
- Mexico:
 - between 16 hospitals in Chiapas Region and the “20 November” hospital, Mexico City.
 - Unnecessary Referrals were cut by 70%.

Impact on the Health Services: Evidence from other countries

- Wasteful repetition of check-ups, diagnostic tests.
- Shared courses of “Continuous Medical Education”
- Saudi Arabia:
 - Between King Faisal Specialist Hospital and EIGHT regional TeleMedicine/TeleEducation sites;
 - Reported “Very Significant” financial and time economies.

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Brunei eHealth: Progress so far?

- Change Management, and
- Organisational issues



National Healthcare Plan (2000-2010)

A Strategic Framework for Action

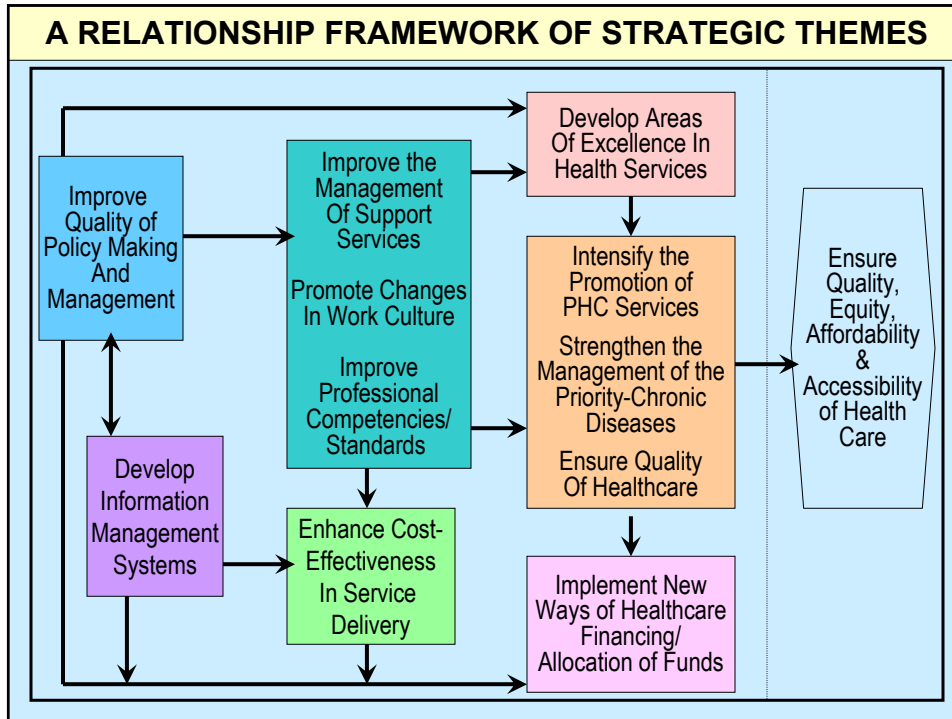
June 2000

VISION

*The Ministry of Health will strive to become a **highly reputable health service organization which is comparable to the best in the region** and which will enable every citizen and resident of the nation to attain a high quality of life by being socially, economically and mentally productive throughout the life span*

MISSION

*The mission of the Ministry of Health is to improve the health and well being of the people of Brunei Darussalam through a **high quality and comprehensive health care system** which is effective, efficient, responsive, affordable, equitable, and accessible to all in the country*



INSTRUMENTAL GOAL

To develop comprehensive health databases and related information management systems which support operational, professional and managerial functions.

EXPERIENCES IN IMPLEMENTING PROJECTS

- **IT projects**
 - **Laboratory Systems (1979)**
 - **Medical Records PMI (1984-1985)**
 - **Material Management (1987)**
 - **New Material Management System (2000)**
- **Development of National Health Care Plan (June 2000)**
- **Decentralisation of Primary Health Care in Brunei & Muara District (June 2000 - March 2001)**
- **TQM, Business Excellence, QA (Oct 2000 -)**
 - **Department of Policy and Planning (BE)**
 - **Health Care Technology Service Dept. (TQM)**
 - **Finance, Procurement and Supply (TQM)**
 - **Building and Maintenance (TQM)**
 - **Clinical Laboratory Dept. (QA)**
 - **Radiology Dept. (QA)**

MOH COMMITMENT

- **Minister's support**
- **Permanent Secretary leads Steering Committee**
- **Senior officers including clinicians, nurses, pharmacists, scientists, administrators, engineers, etc will be involved in SC, OWG, TWG, IWG.**

CHANGE MANAGEMENT

- **Formation of SC, OWG, TWG, IWG**
- **Setting up of various task force in addition to the main Steering Committee (Process Engineering)**
- **Organised e-Government workshops with ITD in April 2002**
- **Hosted 1st National Conference on NHIS Brunei / e-Health in May 2002**
- **Training staff of various levels on operationalising and adopting the NHIS Brunei / e-Health according to the phases of implementation**

Organisational matters such as policies, regulations, procedures and business processes to be focused on:

1. **Review and recommend appropriate changes on policies, regulations and procedures.**
2. **To agree on adjustments and changes in work procedures that become necessary (business process reengineering).**
3. **Facilitate business process reengineering and change management.**
4. **Ensure project deliverables conform to the organizational policy and regulations.**
5. **To resolve obstacles and act as the overall coordinator between all concerned with the development and gradual introduction of the new e-Health.**

(cont'd...)

6. Produce general policies on Health information, and the specific policies in collaboration with those directly responsible for each type of information (e.g. Medical Records, Statistics,).
7. Ensure that the approved policies are adhered to.
8. Advise the Implementation Working Group (IWG) Committee with regards to policies, regulations and procedures.
9. To agree on means and criteria for measuring cost-effectiveness and impact of the new e-Health, as reduced waiting time, economies in cutting out the unnecessary repeat of laboratory tests and medical imaging, reductions in material wastage, reductions of healthcare staff time spent on manual information handling, efficiency in obtaining and contributing information, improved accuracy because of validation at the source, etc.

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Brunei eHealth: Progress so far?

- Overall Study: situation analysis
- Problems & Solutions
- Priorities
- Strategy for implementation

Brunei eHealth: Progress so far?

- Overall Study: situation analysis involved:
 - all levels of the health care services: hospitals, clinics, laboratories, ...
 - all levels of health care staff: medical, nursing, administrative, management, decision-makers,...
 - all Brunei institutions concerned with ICT.
 - consultations, discussions with and visits to, counterparts in other countries, and with international experts.

Brunei eHealth: Progress so far?

- Problems & Solutions
- Priorities
- Strategy for implementation

TWO MAJOR STAGES

1. Improve existing, and introduce new, systems supporting Brunei Health Care services
2. Extend these systems for direct access and uses by Bruneian citizens and other users e.g. Private Sector.

Brunei eHealth: Progress so far?

TWO MAJOR STAGES

1. Improve existing, and introduce new, systems supporting Brunei Health Care services
 - Introduce an integrated National Health Care Management Information System (NHC/MIS) in all hospitals and clinics, with a compatible
 - > National Patient Data Base, and
 - > National Electronic Medical Record System
 - Develop a Brunei HealthNet based on Local Area Networks in all the Brunei health care institutions, and tied via a Public Network, e.g. eG Bandwidth.
 - Develop TeleMedicine/TeleEducation links.
 - Develop a Digital Identification & Certification mechanism for the Brunei health sector.

Fig.1: Current, Manual Information Flow

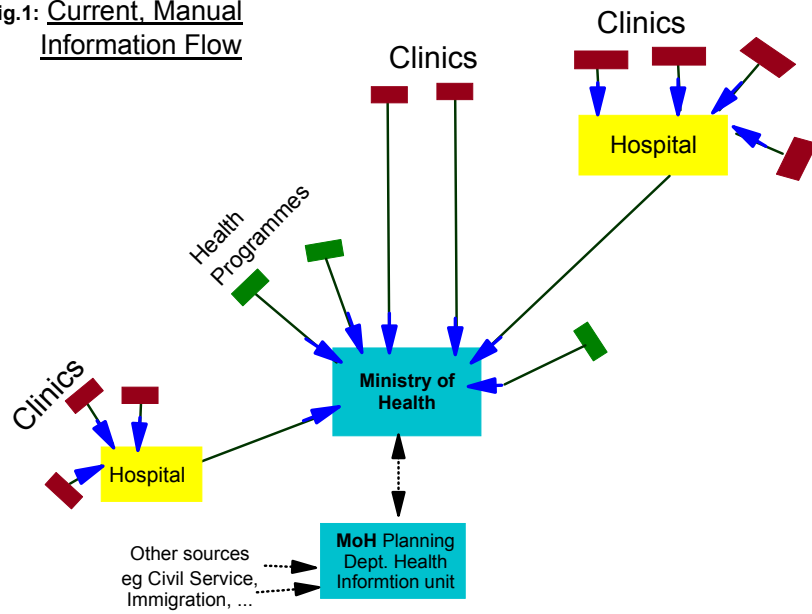
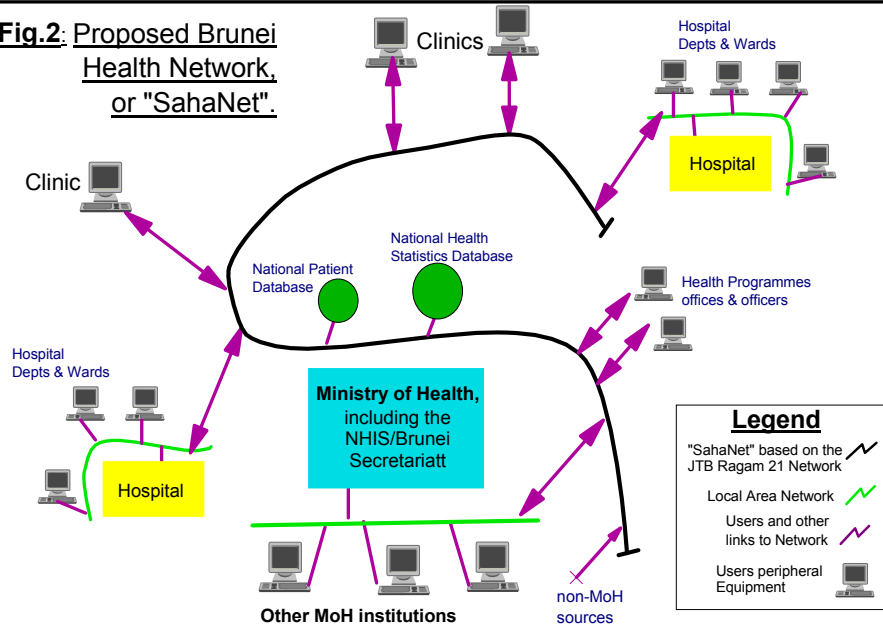


Fig.2: Proposed Brunei Health Network, or "SahaNet".



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Brunei eHealth: Progress so far?

TWO MAJOR STAGES

2. Extend these systems for direct access and uses by Bruneian citizens.
 - In full alignment with the Brunei eGovernment project, enable services to Brunei population, e.g.:
 - Schedule appointments;
 - Access to their Medical Records,
 - ePrescription
 - Health Promotion, Counselling & Education
 - eTransactions in health care, e.g. order lab tests;
 - eExchanges with Private clinics and practitioners;
 - New applications, e.g. introduce "social health contribution" scheme.

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Specific Guiding Principles

- Phased Approach
 - Two main stages;
 - Nine phases.
- Cautious approach in first two years
- Build on what exists
- Align with eGovernment guidelines
- Peripheral Equipment: lease, not purchase.

Other Conclusive Remarks

- Proposed new NHC/MIS will enable other uses, e.g.:
 - Monitoring and comparisons;
 - Monitoring performance and the Instantaneous calculation of related “indicators”;
 - Audit.
 - International links.
- Potential opportunities for “Joint Venture” and/or “Investments”, and for boosting employment. For example, these highly anticipated possibilities:
 - Health care “software house”;
 - The Hospital MIS;
 - Digital Certification, e.g. a Western Pacific Certification Authority.