Health Care Information System
(Al Shifa)

Ministry of Health, Oman.
Sultanate of Oman

- **Area:** 309,500 sq. km.
- **Population:** 2,867,000 (2008 mid-year estimates)
- **Capital:** Muscat
- **Life Expectancy:** 71.6 years
- **Median Age:** 19.8 years
- **Population Density:** 7.5
- **The Sultanate is divided into 9 main administrative regions**
- **GDP Per capita:** $18,013 (IMF 2010)
- **GNI per capita:** $12,270 (World Bank, 2008)

E.oman
Ministry of Health, OMAN

- Legislator
- Care taker
- Largest Health care Provider with a network of Health Care institutions spread across the country:
  - over 230 Primary Health care institutions,
  - 50 Secondary care institutions and
  - 4 Tertiary care institutions

Covering all medical specialties and Super specialties
ICT in Ministry of Health, OMAN

- Started in early 90’s
- Opted for in-house e-Health Applications development
- The distributed model was selected
- Most of the Ministry’s institutions runs the ICT Health care Information System, Al Shifa
The Sultanate of Oman has embarked upon its ambitious journey in transforming Oman by empowering its people, through the e.Oman strategy which was adopted in 2002 and was implemented in May 2003.

The goals include providing job opportunities for nationals in the IT sector and to significantly improve the quality of services that the Government provides to its citizens.

The e.oman strategy addresses eGovernment as well as Digital Society issues. It aims to create an effective government-community-citizen centric that provides better public services to its people, establish national ICT infrastructure, and build the ICT skills of people in Oman.
The Oman e-Health Vision:
- Where we want to be?
- What have been achieved?
Schema of the Oman e-Health

National e-Health Repository

- e-Referral Engine
- e-Notification Engine
- e-MIS (Nabdh Al Shifa)
- Central Laboratory

Primary HC
Secondary Healthcare Institutions
Tertiary Healthcare Hospitals
Other Institutions

Civil Registration
Central e-MPI
What was the situation before the initiative? (the problem)

The problem of manual Medical Records is quite complex. A distinguished American physician has commented “The (paper) medical record is an abomination …it is a disgrace to the profession that created it. More often than the chart is thick, tattered, disorganized and illegible; progress notes, consultant’s note, radiology reports and nurses notes are all co-mingle in accession sequence. The charts confuse rather than enlighten; they provide a forbidding challenge to anyone who tries to understand what is happening to the patient.”

Bleich, H., MD, Computing Vol 10 no 2, p70, 1993
What was the situation before the initiative? (the problem)

- Duplications:
  - Patients Records
  - Treatments:
    - Consultation
    - Investigations
    - Medication
- Completeness of patients Records:
  - Easy to lose part of the Patients Records
- Problems related to hand writing
- Uncontrolled rise of health care cost
What were the key benefits resulting from the initiative? (Solution)

- Expectations were met:
  - Lost/duplication of patients’ records eliminated, thus eliminating the need for duplicate consultation, investigations, and medications.
  - Completeness of patients’ records is achieved, as the system warns the users and administrators on incomplete patients’ records.
  - Problems related to unreadable of patients’ records, major cause of medical errors is eliminated.
  - 60% of time saving on medical personnel.
What were the key benefits resulting from the initiative? (Solution)

Further Benefits (among the many):
- Better communication with patients, resulting in better management of treatment to the satisfaction of Patients. E.g. sending SMS to inform and remind Patients on their appointment and possibility of changing to their comfort.
- Possibility of Auditing Patients Records, thus improving the quality care.
- Better management and control of Medical resources, specifically the Medical Stores and pharmacies. Alerts before expiry of medications. Ect.
What were the key benefits resulting from the initiative? (Solution)

Further Benefits (among the many):
- The vast electronic medical information is a rich resource for medical researchers.
- Automated production of statistics for management and planning
- Better planning of utilization of health care resources
- Automated notifications
- Better management of referrals
- Transparency in the health care processes
What were the Objectives of the Practice?

- Improvement of the health care outcome
- Better management and utilization of health care resources
- Containment of health care cost
What were the key implementation steps?

- Understand the requirements from the management, medical personnel and constraints
- Build appropriate solution for each health care institution type
- Evaluation of solutions an implementation in each institutions.
Who were the main stakeholders?

- Senior Management
- Administrators of health care institutions
- Medical personnel in health care institutions
- Health Programs managers
Can the innovation be replicated and is it sustainable?

- The innovation was conceived having in mind standardization processes and procedures within each type of health care institution. The system has been already implemented now in most Ministry’s most important health care institutions; all the tertiary, all the secondary health care institutions and all the important primary health care institutions. Even some other government health care institutions have opted to use the system.
- Because the innovation came with so many benefits, the Ministry doesn’t have any other choice rather than supporting it.
What are the key lessons learned on and how to promote a culture of innovation in the public sector?

An innovation in the public sector to be successful, need:

- Full support of the senior management
- Meeting the requirements of all the stakeholders
- Proper ‘change management’ planning and
- Sustainable in operational costs
Thank you

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