

# A NATIONAL HEALTH INFORMATION STRATEGY FOR MALTA

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## ABSTRACT:

**In 1992 a national health information strategy was developed jointly by the Department of Health and the Information Systems Division. A detailed strategy study report was compiled, with recommendations for the development of a number of information systems. The main system proposed was an integrated and comprehensive health care information system encompassing all of Malta's hospitals and health centres, based on a single Patient Master Index. This system would support the concepts of an integrated health record and of a person-based view for resource management.**

In the field of health information the mission is to provide all health care providers with accurate and relevant information, where and when they need it. This applies both to clinical information, i.e. information that forms part of the health care delivery process, and to management information, i.e. information necessary for the management of health services.

In order to attempt to accomplish this mission within the context of the Maltese health services, the DH (Department of Health) and the ISD (Information Systems Division of the Government's Management Systems Unit) have jointly developed a **health information strategy**. This is basically a long-term action plan to develop information systems that are in line with the needs of health care providers on the one hand and with the policies, plans and standards of the DH and the ISD on the other.

The strategy was defined by a DH/ISD Project Team over a period of around six months in 1992. The Project Team was supervised by a Project Steering Committee composed of top DH and ISD officials. A good part of the Project Team's time was spent interviewing senior clinical and management staff, documenting their information needs. Much effort also went into investigating and describing the present state of both manual and compu-

terised information systems in the DH. At the end of the study period the Project Team prepared a detailed report with their findings and recommendations.

## ISSUES IDENTIFIED

The Project Team identified several important issues, which included the following:

1. There is an excess burden of paperwork, especially on clinical staff. For example, in hospital wards the personal details of a particular patient are recorded several times daily on different forms.
2. Large volumes of paper are created and stored, but few of the data are routinely processed into information. Statistics on bed-state and bed occupancy are a typical example trends are not analysed routinely.
3. There is poor access to existing information. Many reports are produced but there is no consistent system for communicating their contents to all the staff who would benefit from them.
4. There is a lack of management information. For example, though the number of laboratory tests is known to be increasing it is not easy to describe who or what is responsible.
5. There is a lack of managers and management skills. There certainly appears to be a 'vicious circle' between lack of management information and lack of management skills.

## TACKLING THE ISSUES

If the issues identified are to be tackled effectively, there is only one real option, and that is to computerise the whole of the DH. Integrated multi-user systems, using software that is specific to users' needs, must be designed and implemented according to a strategic plan. Although this may seem to be a statement of the obvious, it

deserves to be emphasised; this is because there have been occasions in the past when a narrow-sighted approach, combined with the availability of inexpensive single-user computer equipment, has led to the benefit of the few being given more attention than of the whole. Certainly, Malta is not alone in this respect, but it must learn from mistakes made in other countries and must take advantage of the fact that is practically a green field site where health computing is concerned.

## MAIN SYSTEM RECOMMENDATION

In its Strategy Study Report, the Project Team recommended the development of a number of information systems in the Department of Health in order to address the issues identified. The main recommendation was for a **Health Care Information System** to support the process of health care delivery throughout the Government health services. This is an ambitious project which involves the phased introduction of computer systems into all of Malta's main health care delivery sites. All hospitals and health centres would be included, and implementation would continue until 1996 and even later.

There is a logical growth path for development of a system of this kind:

### First Tier: Patient Administration System (PAS)

Basic details about all patients would be stored in a Patient Master Index (PMI) and patient encounters with the health service would be recorded via terminals in each hospital ward, hospital clinic and Health Centre, eliminating much paperwork. It is proposed that there be a single PAS and PMI for the whole of the Island, integrating all the provider units. Such a system is only feasible in a place like Malta - with its population of 360,000, its sharply defined geographical boundaries, and its well developed health care system Malta is the ideal place for the development of a truly integrated health care information system.

### Second Tier: Departmental Systems e.g. Pathology, Radiology, Pharmacy

The information in the PAS forms the basis for Department systems. At this stage order communications may be introduced. This would allow the ordering of lab tests, X-rays and drugs directly via computer.

### Third Tier: Clinical Information System (CIS)

When departmental systems are in place, it becomes possible to implement a fully fledged clinical information system, the main components which would be the integrated health record and the nursing system. These would satisfy the needs of the health professions for continuity of care and for medical audit.

### Fourth Tier: Management Information Systems (MIS)

Finally, management information systems, including sophisticated systems for resource management and case-mix management, may be put into place. These would allow a high level of accountability to develop.

## OTHER SYSTEM RECOMMENDATIONS

The other main systems recommended for development in the 1993-1996 period are:

Blood Transfusion System - a system supporting the day-to-day operations of the National Blood Transfusion Centre;

DH Planning System - a system to manage planning information for DH managers;

Cross-Departmental systems - the introduction throughout the DH of standard Government computer systems such as Personnel, Payroll, Registry, Accounts, and Stock Control;

### Ambulance and Transport System

Public Health System - supporting the work of the Health Inspectorate and the reformed Public Health division.

Naturally, there are budgetary constraints on the amount of system development that can take place. Health information systems must be affordable, just like the health services they seek to support.

### The integrated health record

Perhaps the greatest opportunity in Malta in the field of health information is that of developing an **integrated health record**, i.e. a computerised patient file in which all encounters with health services are recorded, whether these occur at a hospital, at a health centre, at school, in general practice, etc. an integrated health care information system would make such a record feasible.

Important benefits from an integrated health record include:

1. Better continuity of care;
2. Improved epidemiological information;
3. A person-based view of resource utilisation for the health manager.

The preservation of confidentiality is an important concern. There are various safeguards that can be built into the system to preserve confidentiality. In Malta data protection legislation is imminent, and should provide a suitable framework for these measures.

There has been a tendency in the past for health professionals not to address medical data sharing issues fully, sometimes with medical confidentiality being used as a convenient excuse. To pave the way for the integrated health record, the DH must build consensus within the health professions on the standard content of a medical file and on data sharing issues. The setting up of a working group on this issue was proposed in the Strategy Study report.

## TURNING THE PLANS INTO REALITY

For the implementation of the Health Information Strategy to succeed, one needs not just **computers**, but also the **staff**, the structures, and the **organisation**.

The DH plans to employ a number of full-time project staff to manage the development of the health care information system. Before new systems are launched health staff will be trained to use the computer as part of their everyday work.

It is planned that the forthcoming refurbishment of St. Luke's Hospital and the structural changes required for the introduction of computer systems will proceed *pari passu*. In the Strategy Study report several proposals were made regarding the health information infrastructure; it is expected that these will be made part and parcel of the reform that is currently under way in the health services.

## THE BENEFITS OF IMPLEMENTING THE STRATEGY

In conclusion, it is useful to summarise the benefits which may be expected if information systems are im-

plemented according to the recommendations made in the health information strategy study report:

1. Relief for clinical and nursing staff from excess paperwork;
2. Potential for enhanced patient care;
3. Improved morale in the health service;
4. Better information to support better management;
5. Support for more efficient use of resources.

The above could apply to any health care system in the world. The following three, however, are added benefits for Malta, and are therefore especially desirable:

6. Facilitation of success of the planned reform of the health services;
  7. Integration of information from autonomous health provider units;
  8. A national health database of immense epidemiological importance.
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