

**LegCo Panel on Health Services  
Meeting on 13 November 2000**

**Public Health Information System**

**Purpose**

This paper reports on the progress of developing a computer-based Public Health Information System (PHIS) in the Department of Health (DH) and seeks Members' views on the development of the proposed System.

**Background**

2. At present, a wide spectrum of information related to public health, which is essential for forming a rational basis for public health policy formulation and health service provision, is being collected by various parties including government departments, academic institutions, healthcare organizations and other health care professionals. There is a lack of regular and systematic collation, analysis and dissemination of data. The absence of a comprehensive public health database has hampered the Government's ability to assess the community's health status and needs, prevent and control diseases and evaluate health services.

3. In the 1998 Policy Address, we have committed to enhancing our health information base by establishing and maintaining a Public Health Information System by 2003 which will set out the community's health status and disease patterns. DH has just completed a feasibility study of the project.

**Public Health Information System**

*Data to be collected*

4. We plan to collect the following five broad categories of data through the PHIS -

- (a) Demographic profile  
(such as population statistics and household demographic statistics)
- (b) Population fertility and mortality experience

(such as birth statistics and mortality statistics)

- (c) Population morbidity pattern  
(including data collected from our disease surveillance system; statistics on hospital in-patient admission and discharge, prevalence of selected non-communicable diseases and information on lifestyle and behavioral risk factors)
- (d) Health services availability, accessibility, utilization and quality  
(including statistics on health manpower, hospital beds, waiting time of patients, utilization rates, screening programmes, immunisation coverage, and patient satisfaction)
- (e) Environmental factors  
(such as statistics on the physical and socio-economic environment, including data on air quality, water quality, food surveillance, employment rate, income level, family structure)

5. DH will identify existing gaps in health information and conduct regular population health surveys to capture important data, such as prevalence of chronic diseases, which is currently not being comprehensively collected by any parties in the community.

#### *Data efficiency and security*

6. The PHIS will provide a central repository of Hong Kong public health data by linking up all relevant data sources to the system through internet or intranet technology. In the interest of efficiency and data integrity, data will be transmitted through electronic means as far as possible, minimizing the need for transfer of physical copies and data re-entering.

7. We expect that the PHIS will improve data availability, accessibility, comprehensiveness, analysis and quality. The PHIS will facilitate data sharing among parties concerned. Users can obtain the required information through on-line query tools quickly; and process and analyze the data for specific tasks or unexpected events immediately. We will incorporate special measures to protect the data captured in the PHIS. Intrusion detection technologies will be employed to safeguard against access of data by

unauthorized persons.

### *Benefits of the PHIS*

8. The PHIS will provide valuable resources for the formulation of evidence-based public health policy. The PHIS will facilitate our monitoring of disease trends and patterns. Automated alert system will be built in to enable auto-generation of prompt reports when early unusual patterns are detected, such as changes in prevalence rate of vaccine-preventable diseases, in service utilization patterns, etc. With information on the health determinants and the relationship between disease prevalence and other variables (such as smoking habits and dietary patterns), it will be possible to identify and target intervention programmes to the high risk groups.

9. Information in the PHIS should enable us to be better equipped to plan for preventive measures to the benefit of the health of the general public. We will also be able to take timely precautionary measures in anticipation of significant changes in disease patterns.

### **Financial Implication**

10. The total non-recurrent cost for implementing the PHIS is estimated to be around \$86 million, comprising \$79 million for computer hardware, software, network equipment and implementation services, and \$7 million for non-recurrent staff cost. The estimated annual recurrent expenditure for maintaining and supporting the PHIS is around \$36 million upon full implementation.

11. According to a cost-benefit analysis, the proposed system will break even, after full implementation in 2003, in year 2009-2010. At the same time, significant non-monetary benefits will accrue from the more effective and evidence-based decision in health policy and resource allocation.

### **Implementation Plan**

12. We plan to implement the proposed system in three phases. Phase I covers the establishment of a data warehouse and construction of communication network at the DH Headquarters. Phase II covers networking with selected DH services/units and major non-DH users (including the Hospital Authority, Census & Statistics Department and Immigration Department). Phase III covers networking with all other PHIS users and the provision of access of PHIS web-site to the general public.

13. The target completion dates of the three phases are June 2002, February 2003 and August 2003 respectively.

### **Members' Advice**

14. Members are asked to comment on the proposed PHIS, and offer suggestions on special features to be incorporated into the system.

Health and Welfare Bureau  
November 2000