For Discussion
on 18 March 2013

Legislative Council Panel on Health Services

Progress of the Electronic Health Record Programme and Extension of Two Supernumerary Directorate Posts

PURPOSE

This paper briefs Members on:

(a) the progress of implementation of the first stage of the Electronic Health Record (eHR) Programme;
(b) the major features of the Electronic Health Record Sharing System (eHRSS) Bill; and
(c) the proposal to extend two supernumerary directorate posts of the eHR Office in the Health Branch of the Food and Health Bureau (FHB).

BACKGROUND

2. The development of a territory-wide eHRSS is one of the healthcare reform proposals put forward by the Government in 2008. The new system will provide an essential infrastructure for access and sharing of participating patients' health data by authorised healthcare providers (HCPs) in the public and private sectors. The objective is to promote public/private sector collaboration, enhance continuity of care and improve quality of healthcare delivery. Participation in eHRSS is voluntary in nature and access to eHR data must comply with the patient-under-care and need-to-know principles.

3. The full development of the eHRSS is a 10-year programme which straddles from 2009-10 to 2018-19. In July 2009, the Finance Committee of the Legislative Council approved the capital funding commitment of $702 million for the first stage of the eHR Programme from 2009-10 to 2013-14. The Finance Committee also approved the creation of one supernumerary

Administrative Officer Staff Grade B (AOSGB) (D3) and one supernumerary Administrative Officer Staff Grade C (AOSGC) (D2) posts for four years up to 2013 to provide dedicated support for the implementation of the programme.

4. In December 2011, the Government launched a two-month public consultation on the Legal, Privacy and Security Framework for eHR Sharing. We subsequently briefed Members of this Panel on the outcome of the public consultation on 11 June 2012. We undertook to revert to the Panel on the drafting of the eHR legislation before introducing the Bill into the Legislative Council.

PROGRESS OF STAGE ONE OF eHR PROGRAMME

5. For the first stage of the eHR Programme, we aim to –

(a) set up the eHR sharing platform by 2013-14 for connection with all public and private hospitals;

(b) have electronic Medical Record / electronic Patient Record (eMR / ePR) systems and other health information systems available in the market for private doctors, clinics and other healthcare service providers to connect to the eHR sharing platform; and

(c) prepare the eHR legislation to protect data privacy and system security prior to the commissioning of the eHRSS.

Since 2009, we have been making good progress on various fronts towards accomplishment of these objectives. The Hospital Authority (HA) has provided strong technical support to the eHR Office in the development of the eHRSS. The major on-going preparatory work is summarised below.

(a) eHR sharing infrastructure core component

6. The eHR core component will provide a sharing platform for interconnecting eMR/ePR systems of different HCPs. We have completed the architectural blueprint of the eHR core component, and the development of the core component is on schedule. We will continue to monitor progress closely to ensure that the eHRSS will be technically ready for operation before end 2014.

(b) Standardisation and interfacing component

7. Standard terminology is the foundation for the development of an interoperable eHR. With this in mind, we are establishing a Hong Kong Clinical Terminology Table (HKCTT) to support eHR sharing by integrating the international terminologies which are commonly used in Hong Kong. International terminologies which are being integrated into HKCTT include Systematised Nomenclature of Medicine, Clinical Terms, International Classification of Diseases - 10th Revision, Logical Observation Identifiers Names and Codes and International Classification of Primary Care 2.

(c) Clinical Management System (CMS) Adaptation and CMS On-ramp

8. The CMS Adaptation modules and On-ramp applications are softwares being developed with a view to facilitating the private HCPs to connect to and interface with the eHR sharing platform.

CMS Adaptation Modules

9. Through engagement of interested private hospitals, we identified the need to first develop nine basic CMS Adaptation modules[1]. The development of six of them has already been completed and we are working on the remaining three. We have started the pilot runs of the CMS Adaptation modules in a number of private hospitals.

CMS On-ramp Application

10. CMS On-ramp is an open standard clinic management software with sharing capability. It is a turn-key system readily usable by private clinics. The installation of CMS On-ramp would enable clinics to smoothly connect to the eHRSS for sharing of data. The development of a prototype of CMS On-ramp Application was completed in March 2011. As at November 2012, eleven private clinics were participating in the pilot test run of the prototype version. We will take into consideration users' feedback from the pilot run in the development of the CMS On-ramp production version.

[1] The nine basic CMS Adaptation modules includes: (1) alert/allergy reaction, (2) discharge summary, (3) diagnosis and procedure coding, (4) outpatient consultation summary, (5) medication order entry, (6) letter engine, (7) drug allergy checking, (8) hospital electronic patient record, and (9) person master index services.

(d) Privacy and security

11. We recognise that adequate protection of data privacy and system security is essential to instilling confidence in and encouraging the use of the eHRSS by the community. For this purpose and on the advice of the Office of the Privacy Commissioner for Personal Data, we have been conducting a Privacy Impact Assessment and a Security Risk Assessment and Audit to assist us in the development of the eHRSS.

Privacy Impact Assessment

12. The Privacy Impact Assessment is being conducted in three phases:

(i) First phase: study on existing pilot projects, i.e. the Public Private Interface – electronic Patient Records (PPI-ePR) sharing pilot, the eHealth System and relevant Public-Private Partnership programmes;

(ii) Second phase: study on the system analysis and design of the eHRSS; and

(iii) Third phase: study on the entire eHRSS before the system comes into operation.

13. The first phase study was completed earlier this year. The consultant confirmed that it had not identified any significant privacy problems with the existing pilot projects. The second phase study has commenced in October 2012 and is near completion. We will commence the third phase study in August 2013.

Security Risk Assessment and Audit

14. The eHR Office has engaged an external security contractor to carry out security risk assessment and audit on the eHRSS. The task will be completed in mid 2014.

(e) eHR sharing pilot

15. The Public Private Interface – electronic Patient Record (PPI-ePR) sharing pilot project was launched in April 2006 to test the concept of electronic

patient record sharing. It is a one-way sharing pilot that enables participating private HCPs to view the patients' records in HA subject to patients' consent. As at end January 2013, 279,334 patients, 2,807 private healthcare professionals, all private hospitals and 73 other organisations have enrolled in the programme and enjoyed the benefits of online access to patient records in HA.

16. Upon the launch of eHRSS by late 2014, the PPI-ePR platform should be decommissioned as it has fulfilled its mission as a pilot. We are working with HA to devise a migration plan to eHRSS for PPI-ePR.

(f) Publicity and engagement of the public and stakeholders

Publicity

17. To promote understanding about eHR sharing, we have been actively engaging the public and relevant stakeholders through various channels. Up till March 2013, over 100 engagement meetings, forums, seminars, focus groups, briefings and other activities have been held. In particular, we carried out two campaigns to promote, among other schemes, the PPI-ePR sharing pilot in 2011 and 2012 at ten specialist out-patient clinics of HA. In addition, an eHR internship pilot programme was launched in mid 2012 to train and equip fresh graduates with practical eHR experience. We also post regular eHR related updates on the eHR Office website and will start issuing e-Newsletters to interested readers in early 2013.

eHR Engagement Initiative (EEI)

18. We launched two EEI exercises in October 2009 and November 2010 respectively. Interested private HCPs, IT service providers and other stakeholders were invited to submit proposals on partnership projects that could facilitate development and deployment of eMR / ePR systems and contribute to eHR sharing in the private sector.

19. Among the proposals received, some are implemented in collaboration with major healthcare organisations such as the Hong Kong Medical Association and Hong Kong Dental Association to promote deployment of sector-specific eMR systems. We have also been engaging all private hospitals in a task force concerning the deployment of CMS Adaptation. As regards the IT sector, we are formulating an eHR service provider training scheme. The objective is to enable private IT vendors to provide

implementation services to help private clinics deploy CMS On-ramp.

ELECTRONIC HEALTH RECORD SHARING SYSTEM BILL

20. We have commenced preparation for the drafting of the eHR legislation in close consultation with the Department of Justice (DoJ). We intend to introduce the Bill into Legislative Council in the 2013-14 legislative session. The legislation will provide the legal basis for the collection, sharing, use and safe keeping of data under the eHRSS and to protect the privacy and security of relevant data. The Bill will include provisions in respect of:

(a) Definitions of key terms

(b) Establishment and functions of the eHR Commissioner (eHRC)

(c) Registration of HCPs and Healthcare Recipients (HCRs)

(d) Safeguards for electronic health record

(e) Use of electronic health record

(f) Electronic health record access and correction

(g) Offences

(h) Complaint and review mechanism

(i) eHR rules, regulations and other instruments

(j) Consequential amendments (if applicable) and others

Definitions of Key Terms

21. It is necessary to define in the Bill the key terms frequently used such as “eHR”, “eHR sharing”, “HCR”, “Healthcare Professionals (HCProfs)” and “HCP”. The term “HCProfs” will be defined in such a way to cover the 13 statutorily registered healthcare professions. The definition of “HCP” will cover hospitals, clinics, nursing homes, maternity homes, residential care homes for elderly, HA, Department of Health (DH), and other relevant government

departments and organisations.

Establishment and Functions of the eHRC

22. There will be provisions to enable the Secretary for Food and Health (SFH) to appoint a public officer to be the eHRC. The eHRC will be responsible for the management, operation and further development of the eHRSS. He or she may issue code of practices (COPs) in relation to operation of the eHRSS and impose conditions of registration for participating HCPs.

Registration

23. The Bill will set out the eligibility criteria to participate in the eHRSS. Only those persons who can demonstrate their valid identities (i.e. identifiable persons) and who have given express consent to join the eHRSS will be enrolled. Moreover, an HCR must give further express consent to individual HCP to enable that particular HCP to access his/her eHR in the eHRSS. The consent to individual HCP could be open-ended until revocation, or in the form of one-year rolling consent[2].

24. To cater for individual patients who are unable to make an informed decision (e.g. minors, mentally incapacitated persons (MIPs)), there will be provisions for substitute decision makers (SDMs) to grant consent on their behalf. Examples of SDMs are persons with parental responsibilities over the subject minors, guardians appointed under the Mental Health Ordinance (Cap. 136) to manage the affairs of MIPs, and immediate family members.

Safeguards for eHR

Compliance of eMR/ePR

25. We will include a requirement for a HCP to comply with security guidelines/requirements issued by eHRC. The detailed security or compliance framework for HCP's eMR/ePR systems would be set out in the administrative guidelines or COPs to be promulgated. This could ensure that the eHRSS Ordinance is technology neutral.

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[2] The one-year rolling consent to a HCP counts from the date when the HCP last provided care to the HCR, and would expire if that particular HCP had not provided care to the subject HCR for more than one year; or when the HCR revokes the consent, whichever is earlier.

Security Audit

26. There will be a clause enabling eHRC to commission security audits on the eMR/ePR systems and internal access controls of eHR HCPs.

Investigation of breaches of eHRSS Ordinance or COP

27. The eHRC would handle complaints regarding the operation of eHRSS, enforce the eHRSS Ordinance, and ensure compliance to the COPs. The Privacy Commissioner for Personal Data's power under the Personal Data (Privacy) Ordinance (PDPO) (Cap.486) would not be undermined.

Use of eHR

Primary & Secondary Uses

28. The primary use of eHR is to enhance the continuity of care for patients. However, secondary use of eHR for purposes such as research and disease surveillance will also be allowed. The use of patient-identifiable eHR data will be subject to the approval by SFH on the advice of a research board to be set up.

eHR Access and Correction

Data access

29. We intend to only allow data subjects, parents of minors, guardians of MIPs and persons appointed by the court to look after matters of the data subject to make a Data Access Request (DAR).

Data correction

30. We would propose in the eHRSS Bill that Data Correction Request (DCR) will be passed to the relevant HCP to follow up within 40 days. If the HCP fails to handle or is unwilling to comply with the DCR within the prescribed period, it should be properly recorded in the eHR. This would alert readers that there has been a dispute and HCPs would likely be more cautious when viewing the data in question.

Offences

31. We shall further deliberate the new offences to be proposed under the new Ordinance, as well as the appropriate level of penalties in consultation with DoJ.

Complaint and Review Mechanism

32. A person aggrieved by a major decision of eHRC (e.g. decision to refuse registration) may make a submission to eHRC to seek a review of the decision. If the person remains not satisfied after the review, he/she may apply to an appeal board for a further review.

eHR Rules, Regulations and other Instruments

33. The eHRSS legislation will empower eHRC to make and promulgate COPs, rules, guidelines, compliance requirements, etc.

Consequential Amendments (if applicable) and others

34. We will study if consequential amendments to other legislations would be required in order to:

(a) handle cross references and interactions with PDPO; and

(b) provide "lawful authority" for eHRC and/or DH/HA staff to access the card face data of HCRs stored in HK Identity Cards.

PROPOSED EXTENSION OF TWO DIRECTORATE POSTS IN eHR OFFICE

35. In July 2009, the Finance Committee approved the creation of one supernumerary AOSGB (D3) post (subsequently designated as Head/eHealth Record (H(eHR))) and one supernumerary AOSGC (D2) post (designated as Deputy Head/eHealth Record (DH(eHR))) for the eHR Office for four years.

36. The major responsibilities of H(eHR) are to lead the eHR Office to implement the eHR development programme, provide strategic steer and direction to colleagues of the eHR Office as well as the dedicated eHR teams of HA, set development plans and work targets, ensure proper resource management and coordination of support, gauge the concerns of stakeholders and formulates strategies to promote adoption of eHR by the community. The DH(eHR) has been assisting H(eHR) in the formulation of detailed action plan, examining the relevant legal issues relating to eHR sharing, devising the legal framework necessary for operating the eHRSS, developing the long-term institutional arrangements for the governance, operation and maintenance of the eHR sharing infrastructure, promoting eHR to stakeholders, and providing secretariat support to the Steering Committee on eHR Sharing.

Justifications

37. Our target is to commence operation of the eHRSS by end 2014. The coming two years will therefore be the critical period for concluding the stage one eHR programme and commencing the stage two programme. We have accordingly reviewed the directorate level staffing of the eHR Office. The extension of the current two supernumerary posts up to 31 March 2015 till the eHRSS commences operation is essential to ensure the successful launch and smooth operation of the eHR Programme.

38. The existing organisation chart of the eHR Office is at **Annex A**. The proposed job descriptions of the H(eHR) and DH(eHR) posts are at **Annex B and C** respectively. We propose that the two directorate posts be extended up to 31 March 2015 to perform the following major tasks :

(a) Policy Steer for Development of the eHRSS

39. The technical development of the three components, namely (a) the eHR sharing infrastructure core component; (b) CMS Adaptation and On-ramp; and (c) the standardisation and interfacing component, is in full swing. They have to be completed before mid 2014 so that the eHRSS can commence operation by end 2014. We will have to resolve relevant policy and legal issues when we finalise the design and workflow of the sharing system. H(eHR) will need to consider the advice and analysis put forward by colleagues of eHR Office and provide policy steer. In this regard, DH(eHR) and Chief Systems Manager/eHealth Record (CSM(eHR)) will also be responsible for monitoring the contractors undertaking the Privacy Impact Assessment and the

Security Risk Assessment and Audit.

(b) Migration of eHR Sharing Pilots

40. We are devising a migration plan for patients and healthcare professionals participating in the PPI-ePR. We will address related technical, security and policy concerns, in order to ensure smooth migration while ensuring protection of data privacy. We may later similarly consider the strategy for migrating participants of the Healthcare Voucher Scheme and some vaccination schemes. Given the large number of participants in these schemes, DH(eHR) will assist H(eHR) in formulating detailed proposals and assessing the possible impact. The plan for PPI-ePR will have to be finalised in 2013 for execution in 2013-2015.

(c) eHR Legislation

41. As explained above, we are working with DoJ on the preparation of the eHRSS Bill. The new legislation needs to be in place before the eHRSS commences operation. We will have to review the legal framework for protection of data privacy and security, and determine the scope and content of the proposed legislation. The drafting of the Bill will commence in 2013 and the tight timeframe requires heavy involvement of both H(eHR) and DH(eHR).

(d) Code of Practice

42. The drafting of COPs and related guidelines and procedural standards will have to be completed before launch of the new eHRSS under guidance and policy directions of H(eHR). We will have to work closely with stakeholders in the next 18 months.

(e) Security and Audit Framework

43. We intend to empower the future eHRC to commission security audits on the eMR / ePR systems and the internal access control of HCPs. Regular security audits will also be conducted on the eHRSS and its interconnection with individual eMR / ePR systems to ensure its safe and secure operation. These will involve formulation of new policies, workflow and procedures before the eHRSS commences operation in 2014. DH(eHR) and CSM(eHR) will undertake these duties under supervision of H(eHR).

(f) Promotion and Publicity

44. We will strengthen the publicity in the coming 18 months to enhance the public's understanding of eHR sharing. The planned activities include an on-site eHR enrolment campaign at HA and DH clinics and other selected premises, dissemination of promotional materials, theme competition and quiz, production and broadcast of Announcement in Public Interest, and general and in-depth briefings on the eHRSS operation and the legal framework. H(eHR) will oversee the implementation of the activities and ensure HA's and DH's coordinated support.

(g) Work of the future eHRC

45. In eHRSS Bill to be drafted, we will propose the Government to appoint an eHRC to operate the eHRSS. As for the institutional and staffing requirement to support the eHRC upon the commencement of eHRSS, DH(eHR) will assist H(eHR) in devising the new arrangement and conducting a review.

(h) Second Stage of eHR Programme

46. During the public consultation on the Legal, Privacy and Security Framework for Electronic Health Record Sharing, we received diverse views on two major issues. The first one is whether to develop a "Patient's Portal" for patients to access their eHR more conveniently. The second one is whether to provide separate storage of sensitive health records with additional access control (viz. a "safe deposit box"). We undertook to this Panel that a study on additional access control for sensitive data would proceed in tandem with the study on "Patient's Portal" for the next stage of the eHR Programme.

47. We have also set out in the consultation document that radiological images should be sharable in the later phase of the eHR Programme. Moreover, we will consider adding other enhancement features in the second stage of the eHR Programme.

48. We intend to conduct research and studies to follow up these issues. We may have to implement pilot projects for testing various concepts. Preparatory works for the second stage of the eHR Programme will be demanding. DH(eHR) is expected to formulate the study proposals and assist H(eHR) in assessing the policy, financial and timing implications. Once the

scope and work plan for the second stage eHR Programme is ascertained, we will seek the Finance Committee's funding approval.

Non-directorate Support

49. The eHR Office is currently supported by around 19 non-directorate posts. The composition of the Office cuts across different disciplines in order to provide the necessary support for implementing and sustaining the development of the eHR. The posts comprise those in the Executive Officer, Analyst/ Programmer, Management Services Officer, Administrative Officer, Secretarial, and Clerical grades.

Alternative Considered

50. The proposed extension of the two supernumerary posts is essential for providing the necessary support for the development, implementation and operation of the eHRSS. We have reviewed the existing staffing resources in FHB. All directorate staff is already fully committed to their existing duties with no spare capacity for taking up additional duties. The existing organsiation chart of FHB is at Annex D.

Financial Implications

51. The proposed extension of two directorate posts will bring about an additional notional annual salary cost at mid-point of $3,664,800. The additional full annual average staff cost, including salaries and staff on-cost, is $5,229,588. We have included the necessary provision in the 2013-14 Estimates to meet the cost of this proposal.

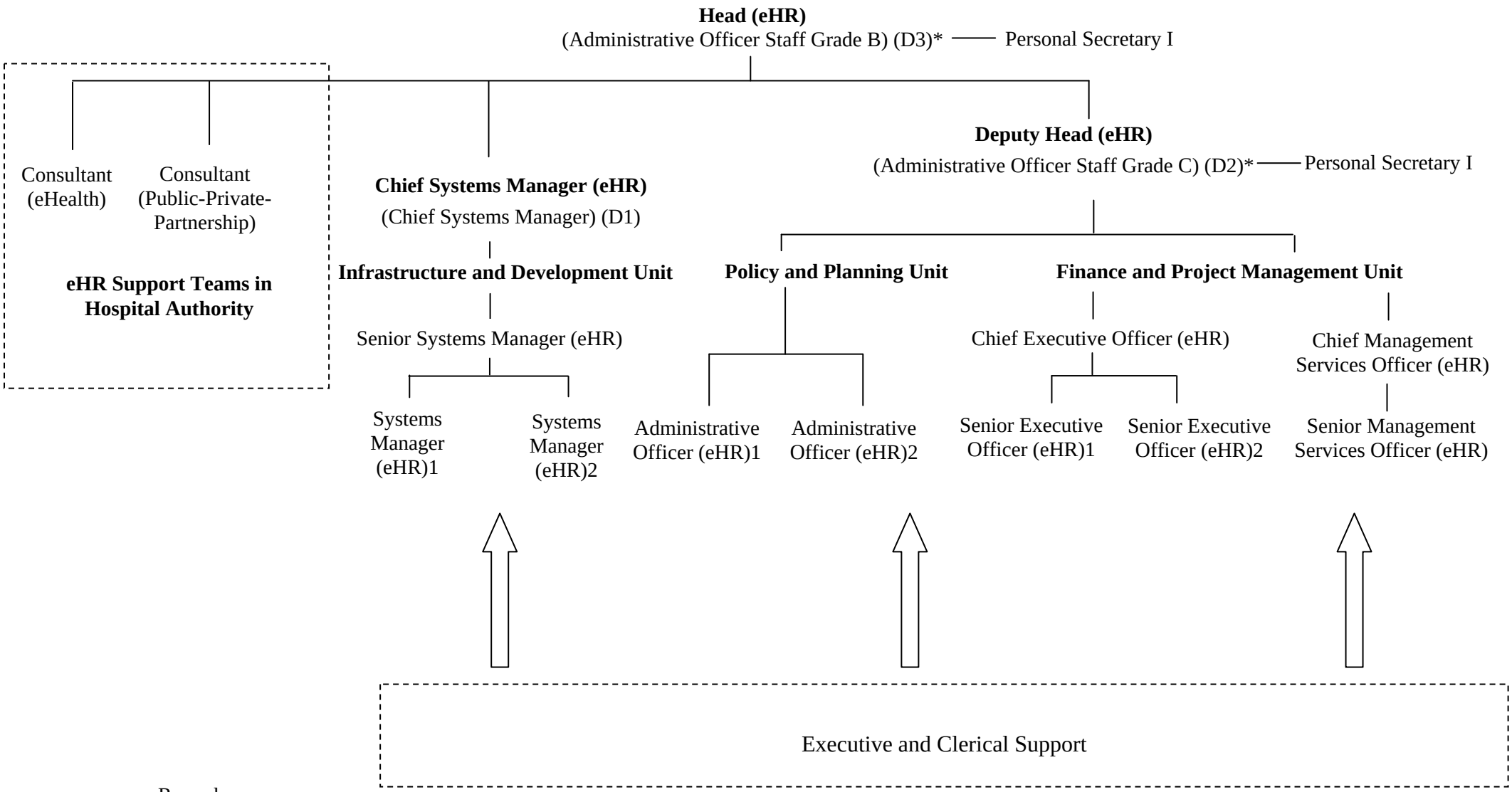
WAY FORWARD

52. Subject to Members' views, we will seek the Establishment Subcommittee's support of the proposed extension of the AOSGB and AOSGC posts. We will afterwards seek the approval of the Finance Committee.

Food and Health Bureau
March 2013

Annex A

Organisation Chart of the Electronic Health Record Office (eHRO)



Remarks:

* Supernumerary directorate posts proposed to be extended

Proposed Job Description for the Post of Head (eHealth Record)

Rank : Administrative Officer Staff Grade B (D3)

Responsible to : Permanent Secretary for Food and Health (Health)

Main Duties and Responsibilities –

1. To lead a dedicated team in the Health Branch of the Food and Health Bureau to oversee and co-ordinate efforts to develop and implement the eHR sharing infrastructure.

2. To formulate policies, development plans and work targets for the eHR development having regard to expertise advice from healthcare and IT professionals in the public and private sectors.

3. To provide strategic steer and advice to the overall implementation of the eHR and to oversee the services provided by the Hospital Authority IT Service which serves as an agent to the eHR Office to implement the eHR infrastructure.

4. To review the legal framework for eHR sharing to ensure sufficient protection for data privacy and security.

5. To promote and engage private sector participation in the development and adoption of eHR in the community.

6. To oversee the financial management for the eHR and formulate policy on the funding of public-private eHR partnership projects.

Proposed Job Description for the Post of Deputy Head (eHealth Record)

Rank : Administrative Officer Staff Grade C (D2)

Responsible to : Head (eHealth Record)

Main Duties and Responsibilities –

1. To assist in formulating the policy and strategy in developing eHR sharing infrastructure.

2. To commission a Privacy Impact Assessment and Privacy Compliance Audit to examine the legal framework required for eHR sharing and to devise solutions to address privacy and security issues in the interim where necessary.

3. To assist in developing the institutional arrangements and governance structure for the effective development and implementation of eHR sharing.

4. To assist in managing the financial resources provided for the development of eHR, including preparation of budgeting and work plan especially in exercising budget and accounting control during the development of the eHRSS.

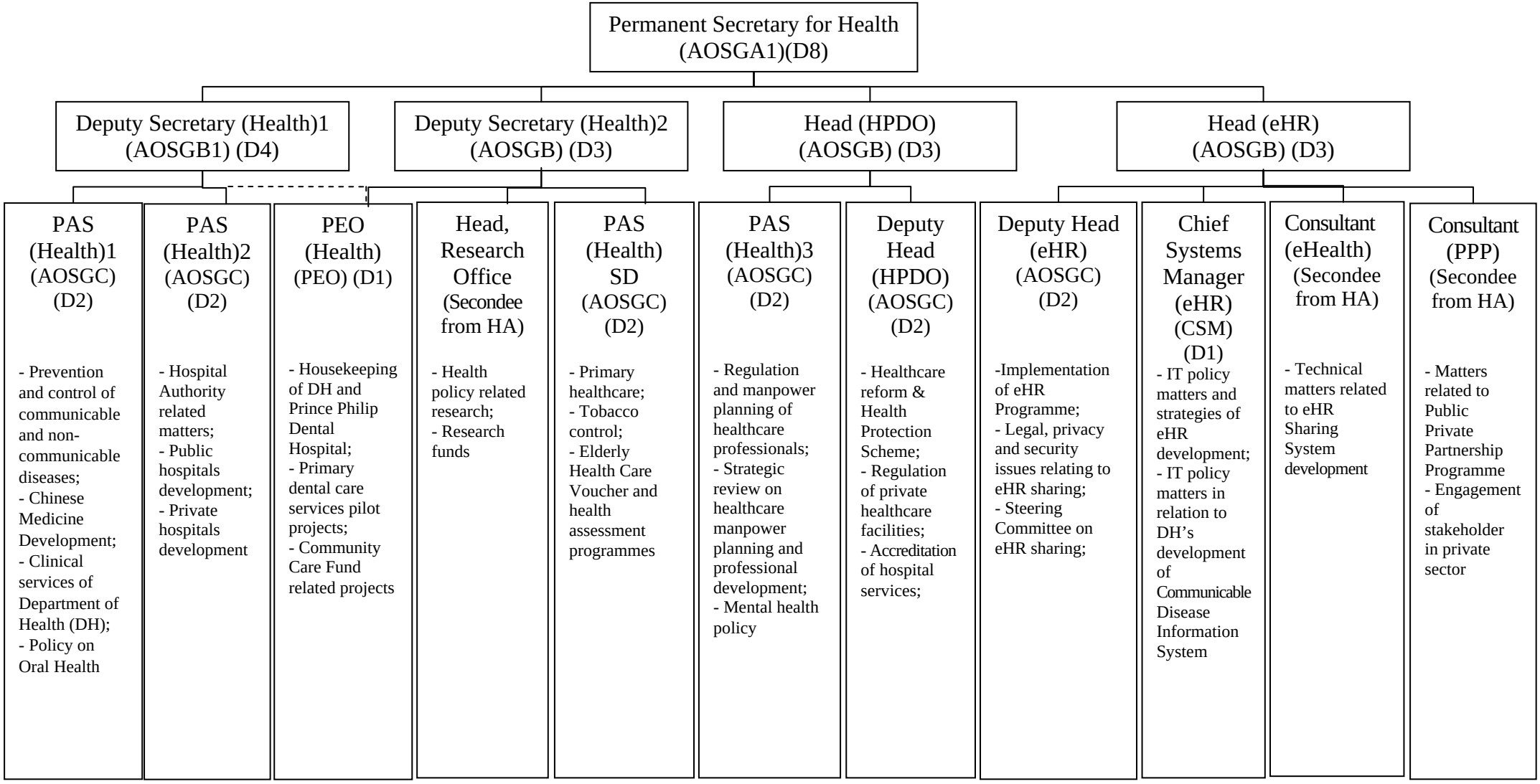
5. To liaise closely with the Hospital Authority's IT Service, the agent for Government to develop the eHR, on policy aspects of the eHR and to devise detailed implementation programme.

6. To liaise with healthcare providers in the private sector to identify public-private partnership to facilitate the implementation of eHR in the private sector and to devise publicity strategy to promote adoption by the community.

7. To provide secretariat service to the Steering Committee on Electronic Health Record Sharing and its Working Groups.

Annex D

Organisation Chart of Health Branch of Food and Health Bureau



Legend

AOSGA1	Administrative Officer Staff Grade A1	eHR	eHealth Record
AOSGB1	Administrative Officer Staff Grade B1	PEO	Principal Executive Officer
AOSGB	Administrative Officer Staff Grade B	HA	Hospital Authority
PAS	Principal Assistant Secretary	SD	Special Duties
AOSGC	Administrative Officer Staff Grade C	CSM	Chief Systems Manager
HPDO	Healthcare Planning and Development Office	PPP	Public-Private-Partnership