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Panel on Health Services

Background brief prepared by the Legislative Council Secretariat for the meeting on 19 December 2016

Development of the Electronic Health Record Programme

Purpose

This paper provides background information and summarizes the concerns of members of the Panel on Health Services ("the Panel") and the Bills Committee on Electronic Health Record Sharing System Bill ("the Bills Committee") on the development of the Electronic Health Record Programme ("eHR Programme").

Background

2. Further to the public consultation on the future service delivery model of the healthcare system in 2005[1] and the launch of the Public Private Interface - Electronic Patient Record Sharing ("PPI-ePR") Pilot Project in 2006[2] to test the feasibility and acceptability of electronic health record ("eHR") sharing, the Steering Committee on Electronic Health Record Sharing was set up in July 2007 to advise the Food and Health Bureau ("FHB") on strategies and work programmes to take forward eHR development.

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1 The Health and Medical Development Advisory Committee released a Discussion Paper entitled "Building a Health Tomorrow" on 19 July 2005 proposing the future service delivery model of the healthcare system, in which the development of a territory-wide patient record system was proposed for the first time for public consultation.

2 The Hospital Authority ("HA") has been implementing the PPI-ePR Pilot Project since April 2006. It was a one-way sharing pilot that allows participating private healthcare providers to view their patients' records in HA subject to patients' consent.

3. The development of a territory-wide Electronic Health Record Sharing System ("eHRSS") to enable two-way health data sharing between healthcare providers ("HCPs")[3] in both the public and private sectors subject to patients' consent was one of the healthcare service reform proposals put forward by the Government in the Healthcare Reform Consultation Document in March 2008. Based on the broad support received during the public consultation, the Government's road-map was to implement a 10-year, two-stage eHR Programme from 2009-2010 to 2018-2019, with an estimated non-recurrent expenditure of $1,124 million,[4] to develop eHRSS.

4. The Finance Committee of the Legislative Council ("LegCo") approved a new capital commitment of $702 million in July 2009 for implementing the stage one eHR Programme straddling five years from 2009-2010 to 2013-2014. The main targets of the stage one eHR Programme were to set up the eHR sharing platform for connection with all public and private hospitals; make electronic medical record ("eMR") or electronic patient record ("ePR") systems and other health information systems available in the market for HCPs to connect to the eHR sharing platform; and have the relevant legislation in place to protect data privacy and system security prior to the commissioning of eHRSS. A dedicated eHR Office was set up in FHB in 2009 to spearhead and co-ordinate the eHR Programme under the guidance of the Steering Committee. The Finance Committee approved the creation and retention of the relevant supernumerary directorate posts to provide support to the eHR Office in 2009, and in 2013 and 2015[5] respectively.

5. From 12 December 2011 to 11 February 2012, the Government conducted a public consultation exercise on the legal, privacy and security framework for eHRSS ("the eHRSS public consultation exercise"). Based on the outcome of the consultation, the Government introduced the Electronic Health Record Sharing System Bill ("the Bill") into LegCo on 30 April 2014 to provide for, among others, the establishment of eHRSS and the sharing, using and protection of data and information contained in eHRSS. A Bills Committee was formed by the House Committee to study the Bill. The Bill was passed by LegCo on 13 July 2015. All provisions of the Electronic Health Record Sharing System

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[3] eHRSS registration is on HCP (i.e. organizational) basis.

[4] The Administration estimated in July 2009 that, as a ballpark reference, stage one and stage two of the eHR Programme would require a non-recurrent expenditure of $702 million and $422 million respectively.

[5] In March 2015, the Finance Committee approved the Establishment Subcommittee's recommendation to retain the supernumerary posts of one Administrative Officer Staff Grade B (D3) (designated as Head/eHR) and one Administrative Officer Staff Grade C (D2) (designated as Deputy Head/eHR) in the eHR Office for another three years from 1 April 2015 to 31 March 2018. The Administration has undertaken to review the continued need for the two posts by early 2018.

Ordinance (Cap. 625) ("the Ordinance"), except for those relating to the sharing restriction request and those relating to use of data and information contained in an eHR for carrying out research or preparing statistics for public health or public safety purpose,[6] has come into operation on 2 December 2015. The eHRSS developed under the stage one of the eHR Programme has commenced operation since 13 March 2016.

6. According to the Administration, it plans to commence the development of the stage two eHRSS after the stage one eHRSS comes into operation. The preliminary scope for the stage two development covers radiological image sharing, expansion of the scope of sharable data, new features to enhance patient control or choice, patient portal, Chinese medicine and relevant pilots.

Deliberations of the Panel and the Bills Committee

7. Issues relating to the development of the eHR Programme were discussed by the Panel in the Fourth and Fifth LegCo and the Bills Committee during the scrutiny of the Bill. The major views and concerns of members are summarized in the following paragraphs.

Scope of health data for eHR sharing

8. Members noted that by making reference to, among others, the sharable scope of health data used in the PPI-ePR Pilot Project, the index data and health data for sharing ("sharable data") in the stage one eHRSS included (a) personal identification and demographic data; (b) adverse reactions and allergies; (c) summary of episodes and encounters with HCPs (i.e. summary of appointments); (d) diagnosis, procedures and medication; (e) laboratory and radiological results; (f) other investigation results; (g) clinical note summary (i.e. discharge summary); (h) birth and immunization records; and (i) referral between providers. There were views that for the interest of healthcare recipients ("HCRs") who had registered for eHRSS, full reports of diagnostic tests (such as that for endoscopy and colonoscopy) for, as well as procedures performed on public hospital patients, which were available in the clinical

[6] It was agreed at the Bills Committee that the provisions relating to the sharing restriction request should take effect upon completion of the study on developing and implementing some form of new device or arrangement enabling additional choice for patients over the disclosure of their data during the stage two of the eHR Programme. For the provisions relating to use of data and information contained in an eHR for carrying out research or preparing statistics for public health or public safety purpose, the Administration has advised that they would be brought into operation after the formulation of the relevant operational guidelines for processing applications in this regard.

management system ("CMS") of HA and readily sharable electronically, should be included in the scope of sharable data.

9. The Administration advised that the existing sharable scope of health data used in the PPI-ePR Pilot Project was considered satisfactory to both patients and healthcare professionals according to the PPI-ePR qualitative research study and survey conducted in 2008 and 2012-2013 respectively. No adverse comment on the proposed scope of sharable data had been received during the eHRSS public consultation exercise. The Administration further advised that the design of the stage one eHRSS had catered for potential expansion of the scope of sharable data in the future. The Administration would commence further development of eHRSS during the stage two eHR Programme after the stage one eHRSS came into operation and upon approval of funding application. Its target was to expand the scope of sharable data to include radiological images and other health-related information such as personal life-style habits, occupation, long term care and treatment plan. Expansion or modification of the scope of sharable data could be pursued at different times during the stage two eHR Programme.

Control over data sharing by registered HCRs

10. Members noted that an HCR could give joining consent to join eHRSS. The joining consent allowed the Commissioner for the Electronic Health Record to obtain from, and to provide to, for healthcare and referral purpose, any prescribed HCP[7] (to whom the HCR had given a sharing consent) the sharable data of that person in eHRSS. When the joining consent was given, the HCR was taken to have given sharing consent to DH and HA. A majority of members of the Bills Committee were of the strong view that given the sensitive nature of health data, registered HCRs should be provided with additional access control over the health data contained in their eHR, such that HCRs could exclude certain prescribed HCPs which/whom they had already given a sharing consent to, from access to certain parts of their health data. A majority of members considered that a "safe deposit box" like feature, which allowed enhanced access control for certain health data, should be provided under eHRSS as suggested by the Privacy Commissioner for Personal Data and a number of patient groups.

[7] Under the Ordinance, the Department of Health ("DH"), HA, an HCP that was registered as an HCP for eHRSS for a service location, and a Government bureau or department that was registered as an HCP for eHRSS were prescribed HCPs. For the purpose of registration for eHRSS, HCP meant a person that provides healthcare at one or more than one service locations. In practice, HCPs might include entities operating hospitals, medical clinics, dental business, and residential care homes or specified entities that engaged members of the 13 statutorily registered healthcare professionals to perform healthcare.

11. The Administration explained that the "safe deposit box" like feature had not been included in the project scope of the stage one eHR Programme, but would be further studied in the stage two eHR Programme. It undertook to conduct the study along a positive direction in the first year of the stage two eHR Programme, with a view to developing and implementing some form of new device or arrangement enabling additional choice for HCRs over the disclosure of their health data. Relevant stakeholders including patient groups, professional groups and LegCo would be consulted on the recommended proposal upon completion of the study. Provisions enabling a registered HCR to, in relation to his or her health data, make a request to restrict the scope of data sharing had also been added into the Bill. The Bills Committee agreed that these provisions should take effect upon completion of the future study and after the feature was technically ready.

12. There was a question as to whether registered HCRs could request the prescribed HCPs, to whom they had given sharing consent, not to provide to eHRSS certain health data which fell within the pre-defined sharable scope. Some members expressed doubt about the need for DH and HA to obtain from the stage one eHRSS the sharable data of those registered HCRs who only used private (but not public) healthcare services.

13. The Administration advised that sharable data that had been entered into an eHR enabled eMR system of a prescribed HCP would automatically be extracted and be uploaded to eHRSS with no exclusion. Only if a piece of data within the sharable scope was not electronically readily available for sharing, it would then not be shared on eHRSS. In the meantime, those HCRs who used only private (but not public) healthcare services and did not wish DH or HA to obtain their health records could choose not to join eHRSS until the availability of the new feature to foster registered HCRs' choice over the scope of data sharing.

Provision of patient portal

14. Members noted that a patient portal with secure access and patient identity authentication was planned to be commissioned in stage two of the eHR Programme. Members requested the Administration to provide the patient portal as early as practicable to facilitate registered HCRs to more conveniently access or upload their data to eHRSS. The Administration undertook to conduct a study on the setting up of a patient portal in the first year of the stage two eHR Programme, with a view to striking a proper balance between the convenience of HCRs' access and data security.

15. On the question about the fees to be charged on registered HCRs making a data access request for a copy of their health data kept in eHRSS before the availability of the patient portal, the Administration advised that a non-excessive administrative fee would be charged by the eHR Registration Office for handling the data access request and compiling different formats of reports.

Transitional arrangement from PPI-ePR to eHRSS

16. Members were advised that PPI-ePR would be decommissioned after a transitional period upon the launch of stage one eHRSS. PPI-ePR participants could voluntarily decide whether to migrate to the new eHRSS. In the light of the fact that the new feature enabling additional choice for HCRs over the disclosure of their health data would still be in its design stage when stage one eHRSS was in operation, there was a view that the PPI-ePR system should be maintained until the time the new feature would be implemented. In so doing, those HCRs who did not wish DH or HA to obtain their health data could continue to enjoy the benefits brought about by PPI-ePR which allowed the healthcare professionals concerned to access to their medical records kept in HA.

17. Members were subsequently advised that new applications for joining PPI-ePR had been ceased to be accepted the day before the coming into operation of eHRSS. Existing PPI-ePR participants could continue to use the PPI-ePR system for no less than two years until it was eventually decommissioned. According to the Administration, a continuous increase in the number of PPI-ePR users would not be conducive to the transition from PPI-ePR to eHRSS. It was expected that more and more patients and HCPs would take part in the new two-way sharing arrangement under eHRSS which would bring more benefits to both patients and HCPs than the one-way sharing arrangement under the PPI-ePR Pilot Project. The Administration would review the arrangement in the third year of eHRSS operation.

18. Members considered that the above arrangement would undermine the interests of those patients who did not wish to join eHRSS until the availability of a feature to foster registered HCRs' choice over the scope of data sharing. At the meeting on 18 April 2016, the Panel passed a motion urging the Government and HA to expeditiously resume the original operation of the PPI-ePR Sharing Pilot Project, including accepting enrolment from new patients and HCPs.

Engagement of the private information technology sector

19. Members noted that HA was engaged as the technical agency in the

development of eHRSS under the stage one eHR Progrmme. Some members urged the Administration to engage the local information technology ("IT") sector, in particular the small and medium sized enterprises, in the development of CMS for registered HCPs to connect to eHRSS. The role of the Administration should be confined to maintaining a level playing field in this regard. Some members further suggested that a separate entity, instead of HA, should be entrusted with the responsibilities to provide technical training on application programming interface specifications, as well as certification services on the conformity of the non-government developed CMSs with the interoperability standards.

20. The Administration explained that the development of eHRSS required heavy input of clinical expertise not readily possessed by IT vendors in the private sector. While HA had performed the most critical development tasks of eHRSS, certain work assignments had been outsourced to the private IT sector. An eHR Engagement Initiative was launched in November 2010 to invite proposals contributing to the development of eHRSS from the IT professional bodies and private IT vendors. A total of 58 proposals were received and engagement plans were formulated. Separately, an eHR Service Provider Training Scheme was organized to provide training for, among others, interested IT vendors with necessary knowledge to provide end-user support services to HCPs on the installation of CMS On-ramp,[8] which was a low investment option developed by the Administration for private solo or group practice HCPs to adopt. Where necessary, IT vendors might also assist individual HCPs by customizing CMS On-ramp to meet their specific needs. The Administration assured members that it would ensure that the private IT sector would benefit from new business opportunities in the development of the stage two eHRSS.

Technical support for eHRSS

21. There was a concern about the technical safeguard for eHRSS against similar incident of malfunctioning of CMS of HA. The Administration advised that the technical risk of eHRSS was lower than that of CMS, as the latter was of a more complicated environment and had a lot more transactions. On the question as to whether the improvement work to enhance CMS of HA in the future would affect the technical manpower support for eHRSS, the

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[8] According to the Administration, CMS On-ramp was an open source and open standard clinic management software with the ability to share patients' clinical data with eHRSS. It was a turn-key system readily usable by private clinics. CMS On-ramp could be connected to eHRSS with the installation of a free licensed software module known as Encapsulated Linkage Security Application which would encrypt the communication between HCPs' computers and eHRSS.

Administration advised that there was no immediate concern but the overall supply of IT manpower in Hong Kong would be kept in view.

Recent developments

22. According to the Administration, as of 4 November 2016, more than 1 000 private HCPs have registered with eHRSS and over 300 000 healthcare recipients have joined eHRSS.

23. The Administration will consult the Panel on the financial proposal for implementing the stage two eHR Programme on 19 December 2016.

Relevant papers

24. A list of the relevant paper on the LegCo website is in the **Appendix**.

Council Business Division 2
Legislative Council Secretariat
13 December 2016

Appendix

Relevant papers on the development of the Electronic Health Record Programme

Committee	Date of meeting	Paper
Panel on Health Services	9.3.2009 (Item IV)	Agenda Minutes CB(2)1724/08-09(01)
	19.6.2009 (Item II)	Agenda Minutes CB(2)2101/08-09(01)
	12.12.2011 (Item IV)	Agenda Minutes
	11.6.2012 (Item IV)	Agenda Minutes
	18.3.2013 (Item VI)	Agenda Minutes
	15.12.2014 (Item IV)	Agenda Minutes
	18.4.2016 (Item III)	Agenda Minutes
Bills Committee on Electronic Health Record Sharing System Bill	--	Report of the Bills Committee tabled at the Legislative Council on 8 July 2015

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