Pioneering Territory-Wide Sharing of Radiological Examination Results in Hong Kong

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Abstract

Under a Public-Private Interface (PPI) initiative, a pilot project was implemented to examine the feasibility of diverting patients to private healthcare providers to conduct radiological examinations, which enables prompter clinical care. Radiological examination results taken in private healthcare providers are electronically transferred to Hong Kong Hospital Authority (HKHA), the public healthcare provider in the territory, where the patients originally sought care. These results are further incorporated by HKHA IT infrastructure and be combined with the Authority's patient-based, longitudinal medical record. In this way patients are given more flexibility while selecting public or private radiology investigation services and prompter clinical decision can be made. This directly improves the quality and safety of patient care.

Keywords:

Radiological examination, Private-public interface, Patient care, Electronic patient record

Introduction

Radiological examination is an important investigation for clinical decision-making. The Electronic Patient Record (ePR) of HKHA is currently housing 70 million radiological study results. Utilization of radiological investigation facilities within HKHA has, however, reached its maximum capacity and patient typically need to wait for 6 to 12 weeks before a radiological examination can be taken in the Authority's premises.

A collaboration pilot was started to offer patients under public healthcare an alternative by enabling them to take radiological examination in the private sector. The pilot defined and testified viable business and technical model for a safe and secure sharing of radiological investigation result.

Methods

The pilot was defined under Public-Private Interface (PPI) initiatives between HKHA and Hong Kong Sanatorium Hospital (HKSH). If a patient under HKHA hospital treatment decided to take a radiological investigation in HKSH, he would be issued an examination request form with a 2-Dimensional (2D) barcode, which carried the patient's identity information.

When radiological examinations were completed in HKSH, the radiological images and examination reports were sent to HKHA electronically in compliance with industrial standards such as DICOM III, HL7 XML 2.5, etc. Security was taken seriously to ensure site-to-site confidentiality. Technologies such as IPSec Virtual Private Network (VPN), multi-level firewall and Intrusion Detection System (IDS) were deployed.

Results

The pilot commenced in January 2009. 150 patients had taken 184 examinations in the first month of pilot. An increase of 38% of utilization was observed in the subsequent 7 months. CT (52%), MRI (34%) and Ultrasound (10%) contributed over 90% of the examinations involved.

According to the results obtained from small-scale end-user surveys, it was concluded that the initiative was welcomed by clinical personnel of both HKHA and private providers. Other comments also indicated that the same is true regarding the general public.

Conclusion

With more choices of clinical services from different providers, waiting time for radiological examinations in the public sector was shortened. Patients could receive treatment in a more timely manner and the corresponding clinical outcome could be improved.

The technical and operational model of this pilot provides a good reference and example for future public-private partnership initiatives. At the same time, technical readiness of partnered institutions, and the ownership and responsibility of shared data are crucial issues which need to be addressed for implementation of larger scale.