

**Singapore Office**

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**Clinical Practice**

**Leveraging on IT to Support Clinical Practice in Enhancing Patient Safety and Quality Electronic Verification of Histopathology/Cytology Reports**

Aim

The aim of the project is to reduce missed results to reduce delayed diagnosis and treatment of cases in NUH.

Team

Cross-functional team led by A/Prof Benjamin Ong, Clinicians, Operations, MA (QA) and IT personnel.

Introduction

A busy hospital setting has competing demands on every doctor's time including reviewing the ordered investigations results in a timely manner and act on them.

A missed result, if significant, compromises patient safety and can lead to an adverse outcome or delayed treatment for the patient, which may lead to morbidity and even mortality.

Problem

There have been cases of missed diagnosis in recent past resulting in delayed diagnosis and treatment, a few of which were identified as sentinel events where patients experienced delayed treatment after re-presenting in a late stage of metastatic disease, with attendant consequences and outcome associated with late disease.

Solution

The existing Computerised Patient Support System (CPSS) was used to build a module for verification of histopathology reports.

The system was implemented in March 2006. Doctors are notified by auto-generated e-mail followed by reminder e-mail to review reports on line. Alerts are escalated to respective chiefs and pathology chief. Printing hard copy reports was stopped from April 2006.

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Escalation Rules & Alerts

- Level 0 Alert : Patient's attending doctor will get notified via email notification upon receipt of results in the CPSS
- Level 1 Alert : Attending doctor will get reminder email for unverified results after 7 days from the first notification
- Level 2 Alert : Attending doctor's Chief will receive an e-mail for unverified results 7 days after the e-mail reminder (level 1 alert)
- Level 3 Alert : Pathology Chief will receive an e-mail alert for unverified results after 21 days

Results

1. Compared to the baseline data, the rate of reminders decreased for all 3 levels since the start of the process, indicating significantly fewer delayed results. There were also no missed results impacting patient care, and this has contributed significantly to clinical quality improvement.
2. Going paperless is environment-friendly move, and has resulted in an estimated cost savings of about \$3,000/ year due to reduced paper and printer usage.
3. Departments' clerical staff save time not having to sort/file hardcopies; and the time saved is better spent on other value-added services for our patients

Conclusion

Effective information management is essential in the modern clinical environment. A comprehensive results review system produces better clinical outcomes for patients, and reduces litigation risk.

Future Directions

Our target is to reduce the escalation rate to zero percent and to extend this system to all other test results.