Improving Patient Records Delivery and Management Using Lean-management Tools

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INTRODUCTION

KKH Department of Document Management Services (DDMS) is primarily responsible for the standardised and professional maintenance of medical records in a manner that protects patient confidentiality, while allowing healthcare providers adequate access to information in order to promote quality patient care. DDMS further supports hospital operation in such specific functions as diagnosis coding, medical report processing, records archival and patient bio data merging.

BACKGROUND

Despite the development and phased implementation of electronic records systems, physical patient records are still being created daily, placing increasing strain on existing hospital capacity and resources that have both patient and employee impact, e.g. misplaced or duplicated records, work stress, injury in the course of record retrieval (owing to overflowed storage shelves), etc. Hence, DDMS has engaged a third-party vendor to provide record storage and retrieval services, for approximately 44% of KKH casenotes deemed to be less active or inactive, since 2012.

However, notwithstanding the efforts in place to mitigate resource constraints, new operational issues have emerged with the heightened retrieval frequency of patient records, such as:
Time spent in verifying information on record request form due to illegible hand-writing (e.g. Hospital Registered Number (HRN).

## OBJECTIVE

Our objective for this project, therefore, aims to:

❖ **Reduce time** wasted in medical records validation and rectification arising from typographical or manual-written errors caused by both DDMS and vendor.

❖ **Improve the turnaround efficiency** of patient records delivery from vendor to DDMS, and DDMS to requestor.

METHODOLOGY

Value Time Stream

To map out all of the activities and seek the root causes of the non-value adding time.
✓ *Eliminate* the Non-Value Added Time (NVA)
✓ *Reduce* waste and seek continuous improvements
✓ *Optimize* Value Added Time (VA)

Average Total Time taken : 5.08 minutes / request
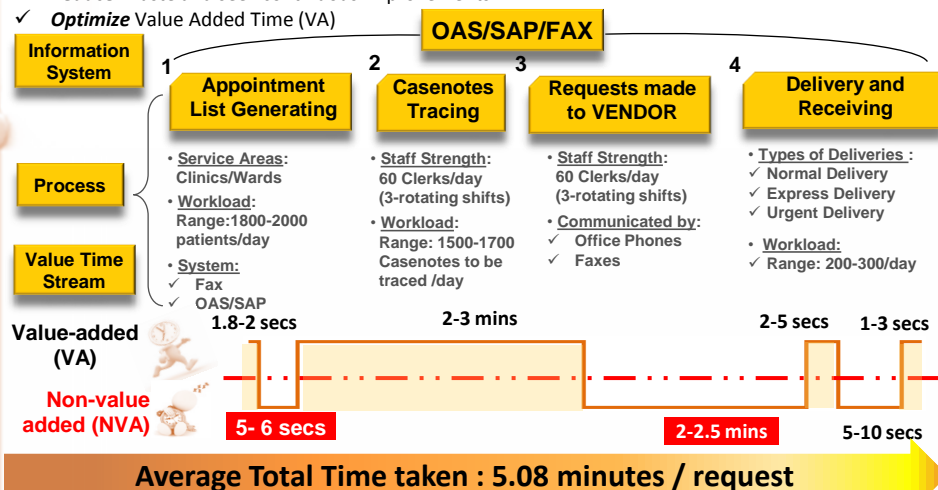
The Solution Selection Matrix

Solutions \ Criteria	Feasibility	Acceptability	Cost (low)	Effectiveness	Sustainability	Total Rating	Rank
To have additional storage space near KKH	1	1	1	2	3	8	5
To enhance SAP and direct export to the request form, and upload the patient list to our vendor's system for generating of work order	3	2	4	3	3	15	2
To increase manpower	2	3	2	3	2	12	3
To impose higher liquidated damages (LD)	4	2	2	1	1	10	4
To increase delivery trips	4	4	4	4	4	20	1

Rating Scale: 1 Strongly Disagree   2 Disagree   3 Agree   4 Strongly Agree

IMPLEMENTATION

After NVA had been mapped out, we analysed the roots cause by using fish-bone diagram and two solutions were selected to streamline the process – using 5 simple implementation steps

5 Simple Implementation Steps

1. To group the requestors into **5 priority teams (TOP 5)** for RECALL to take note
2. To **pre-group the patient's list** according to TD and doctors' resources in SAP for printing
3. All requests are to be sent via **EMAIL only**.
4. To provide **additional casenotes DOCUMENT** number beside giving HRN (This will helps VENDOR to locate the file if patient bio-data has been merged, which HRN will be changed but document number doesn't change)
5. To bring forward delivery set-out time and **1 additional trip** per day thus eliminating express delivery.

RESULTS and CONCLUSION

Revised - Value Time Stream

Average Total Time taken : 4.01 minutes / request
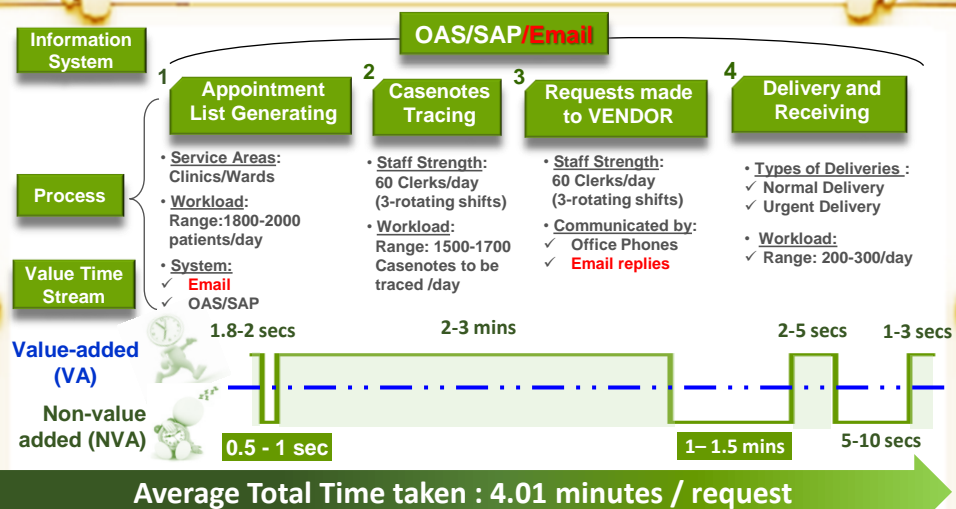
The following benefits have been attained by the team:
Improved delivery accuracy of casenotes by vendor to DDMS, within stipulated schedule Estimated time-saving:

1.07mins/ casenote/ day (about 250 casenotes delivered/day/staff) = 4.45 man-hour per day.

Estimated cost-saving (based on 4.45hrs = 0.5 FTE):
S$1000/ month x 12 months = S$10,800 per year
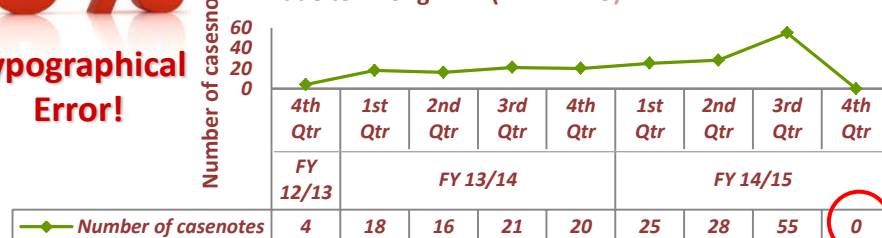**Estimated cost-saving from Liquidated Damage (for vendor):**
S$100/ month x 12 months = S$1,200 per year
Total estimated costs saved: S$12,000 annually

S$12000/yr SAVED!

0%
Typographical Error!

Number of cases delayed due to wrong HRN (FY12-FY15)

	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
	FY 12/13	FY 13/14				FY 14/15			
Number of casenotes	4	18	16	21	20	25	28	55	0

Conclusion

Significant process improvements have been achieved from this project, overall:

Streamlined Records Retrieval Process – Improved the turnaround efficiency and reduced time
Enhanced request-to-delivery process, with more precise execution of tasks to ensure accurate and on-time order fulfilment.

Enhanced Patient Safety
Minimisation of patients' risk exposure casued by erroneous records produced to clinicians.

Time-saving
Increased labour productivity from reduction of effort to perform error verification.

Cost-saving
Significant costs saved through elimination of process delays and error verification activities.

Improved Teamwork and Communication
Better collaboration and relationship with stakeholders, showcasing strong focus on KKH's core values.