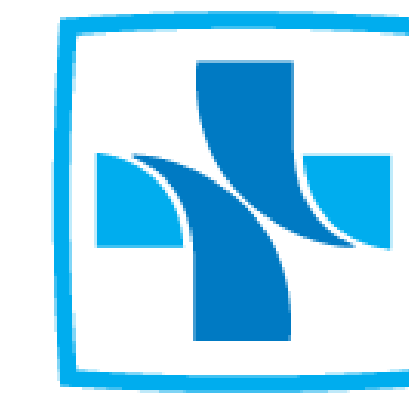




Singapore Healthcare Management 2018

# Digitization of Loose Medical Documents: Making EMR as A Consolidated Source



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SingHealth

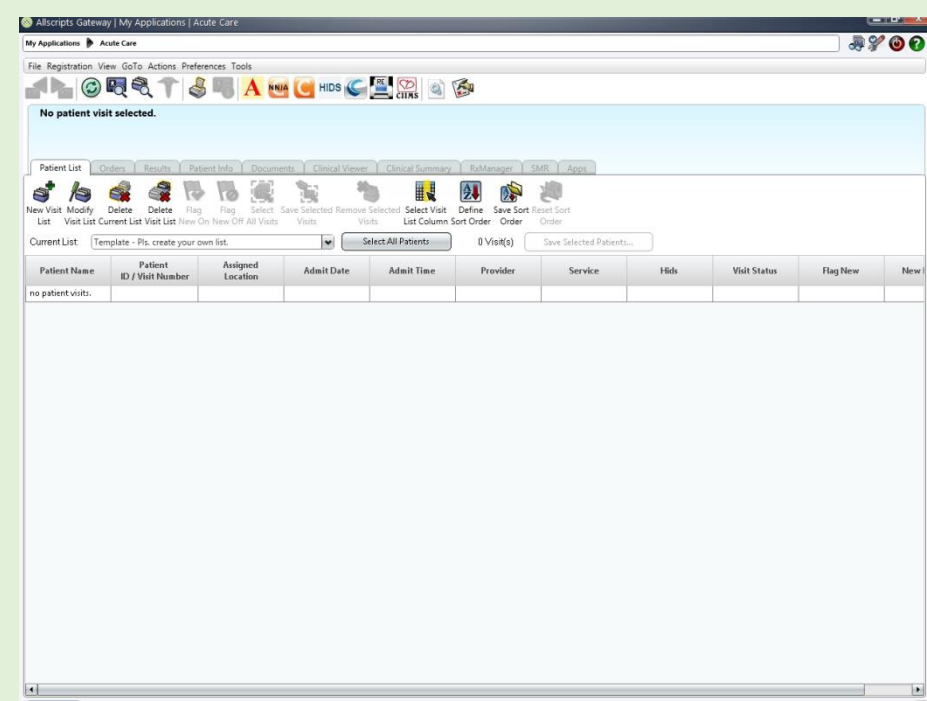
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## PROBLEM DESCRIPTION

Every active CGH patient had one Electronic Medical Record (EMR) and one folder of paper record.

### AIM

- EMR as the consolidated source of patient medical records.
- Stop creation and keeping of paper medical records.



## BACKGROUND

Digital records were created daily in EMR via Sunrise Clinical Management (SCM) System. Meantime, 55,000 of patients' paper records were provided to Specialist Outpatient Clinics (SOC) for continuity of care monthly. An average of 1,650 folders were created monthly and paper medical records continued to grow.

## METHODOLOGY

From 7 September 2017, we implemented scanning of loose medical documents created during SOC visits and made them accessible via SCM in next two working days. The images indexed with patient and visit details are uploaded in Scanned Medical Records (SMR) in SCM.

## SUCCESS FACTORS

- EMR provides better patient care clinically and operationally.
- Supported by Medical Board, Senior Management Committees like IT steering Committee and Medical Centre Steering Committee.
- Collaboration with stakeholders, namely, Director Clinical Informatics, Nursing and Allied Health staff, SOC operations and portering services.
- Setup capability and capacity of scanning facility with work processes that are certified as Evident Act compliance in MRO.
- Engaged scanning vendor with clear deliverables, methodology and workflow.

## CONCLUSION

The project helps to actualize the benefits and potential of EMR and transform the operational role of MRO. MRO plans to start in-house scanning in Sep 2018. This will upskill existing staff with clerical skill of providing paper records to IT skills of document automation in scanning and indexing, management of scanned documents via Onbase Unity and application of knowledge in medical documentations.

## RESULTS

**(1) Access to outpatient medical records dated from 7 Sep 2017 onwards, EMR is the consolidated source.**

We put a stop to the growth of paper records creation from new SOC visits.

**(2) Total savings: \*\$507,870 per year**

Cost comparison of 1 paper medical record folder management with loose notes scanning for 1 patient with 20 visits.

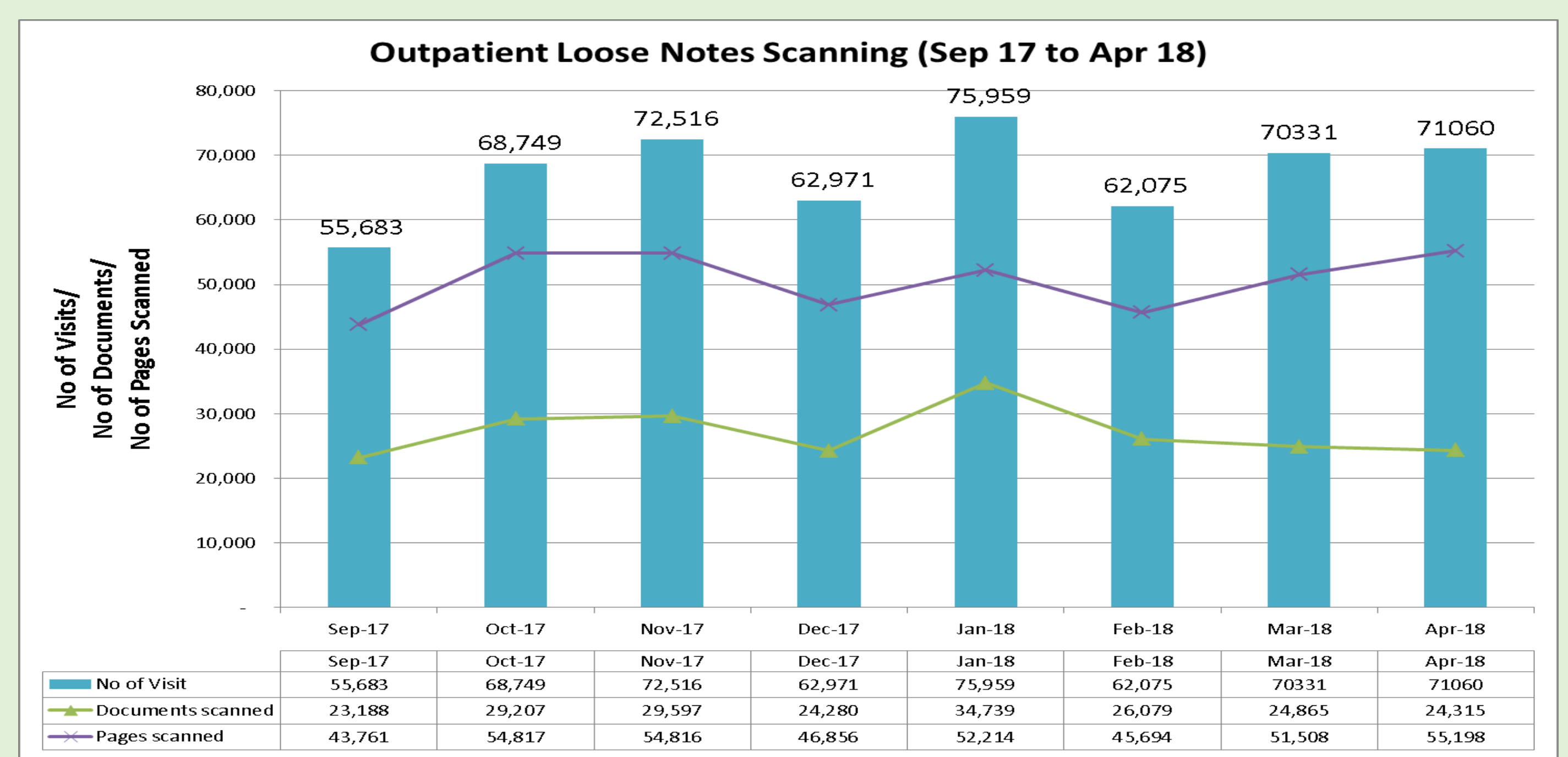
Main Cost Elements	1 Folder	Loose Notes Scanning
Medi Clip	\$1.65	\$0
Active Management (4 years)	\$24	\$0
Archive/Scan	\$9	\$9
<b>Total</b>	<b>\$34.65</b>	<b>\$9</b>

\* Saving per file is (\$34.65-\$9) \$25.65.

**Total savings (1,650 new folders/month x\$25.65x12 month) is \$507,870.**

**(3) Reduction in provision of paper medical record folders to SOC by 65% monthly**

Together with scanning of old outpatient records that were filed into folders (created prior 7 September 2017) and made them accessible via SCM, 25,000 folders (35%) were provided monthly (as of May 2018 figure). This figure is still falling and expected to be stabilized at 10% by June 2019.



	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18
1 Referral	Referral	Referral	Referral	Referral	Referral	Referral	Referral	Referral
2 Outpatient Clinic Form	Consent / Acknowledgement For Operation/ Procedure	Consent / Acknowledgement For Operation/ Procedure	Consent / Acknowledgement For Operation/ Procedure	Referral for Continuation of Treatment	Consent/ Acknowledgement For Operation/ Procedure	Outpatient Clinic Form	Outpatient Clinic Form	Consent/ Acknowledgement For Operation/ Procedure
3 Consent / Acknowledgement For Operation/ Procedure	Outpatient Clinic Form	Outpatient Clinic Form	Outpatient Clinic Form	Outpatient Clinic Form	Outpatient Clinic Form	Referral for Continuation of Treatment	Consent/ Acknowledgement For Operation/ Procedure	Outpatient Clinic Form
4 Referral for Continuation of Treatment	Referral for Continuation of Treatment	Referral for Continuation of Treatment	Referral for Continuation of Treatment	Consent/ Acknowledgement For Operation/ Procedure	Referral for Continuation of Treatment	Consent/ Acknowledgement For Operation/ Procedure	Referral for Continuation of Treatment	Referral for Continuation of Treatment
5 Results	MPI (Myocardial Perfusion Imaging) Report	Correspondence	Correspondence	Correspondence	Medical Reports	Medical Reports	Medical Reports	Medical Reports
6 Rehabilitative Services - Request for Physiotherapy	Results	Medical Reports	Medical Reports	Correspondence	Correspondence	Correspondence	Correspondence	Correspondence
7 Audiology Report	Rehabilitative Services - Request for Physiotherapy	Referral	MPI (Myocardial Perfusion Imaging) Report	MPI (Myocardial Perfusion Imaging) Report	MPI (Myocardial Perfusion Imaging) Report	MPI (Myocardial Perfusion Imaging) Report	MPI (Myocardial Perfusion Imaging) Report	Rehabilitative Services - Request for Physiotherapy
8 ECG Tracings	Audiology Report	MPI (Myocardial Perfusion Imaging) Report	Results	Audiology Report	Rehabilitative Services - Request for Physiotherapy	Rehabilitative Services - Request for Physiotherapy	Rehabilitative Services - Request for Physiotherapy	CDM Patient Clinical Data Form
9 Bladder Scan	Physiotherapy Exercise Sheet	Memo	Memo	Results	Results	Results	Results	MPI (Myocardial Perfusion Imaging) Report
10 Time-out Checklist for Procedure	Time-out Checklist for Procedure	Results	Audiology Report	Memo	MMS Flowmaster: Uroflow	ECG	Operation Report Form	