

# Optimizing Patient Medical Records Digitisation Processes for Improved Turnaround Time

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## Mission Statement

To improve the turnaround time for availability of patient medical records online for faster access by clinicians

1. To deliver quality healthcare aided by the intelligent use of health informatics and the intersection of people, technology, and data to improve the safety and quality of patient care
2. Leverage AI technologies to streamline operations, improve efficiency to remove possible oversight in manual work preparations in various tasks

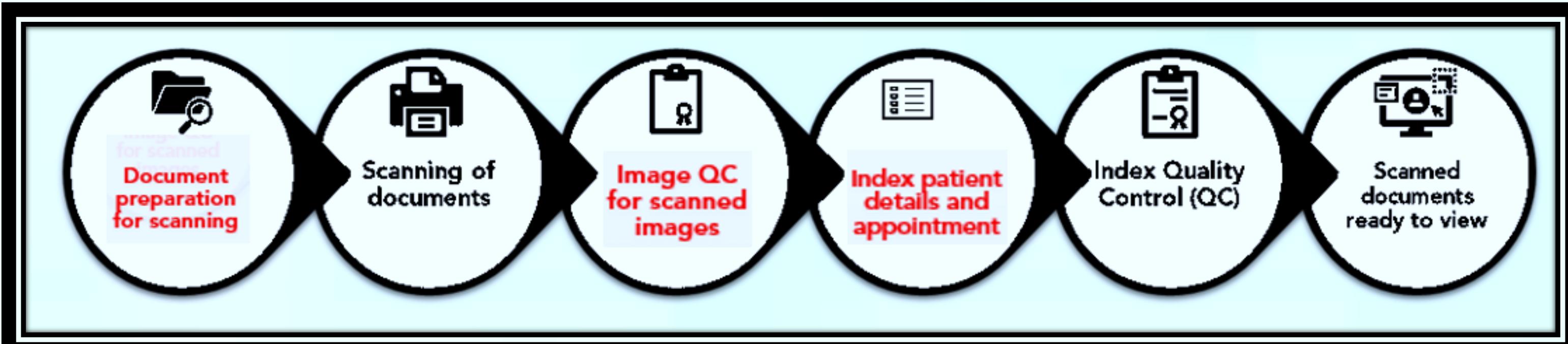
## Team Members

•Acknowledge the rest of the authors

	Name	Designation	Department
<b>Team Leader</b>	Lau Younan	Executive	CHIO
<b>Team Members</b>	Sim Xuan Wei	Executive	CHIO
	Norfadzillah Bte Esman	Snr Executive Asst	CHIO

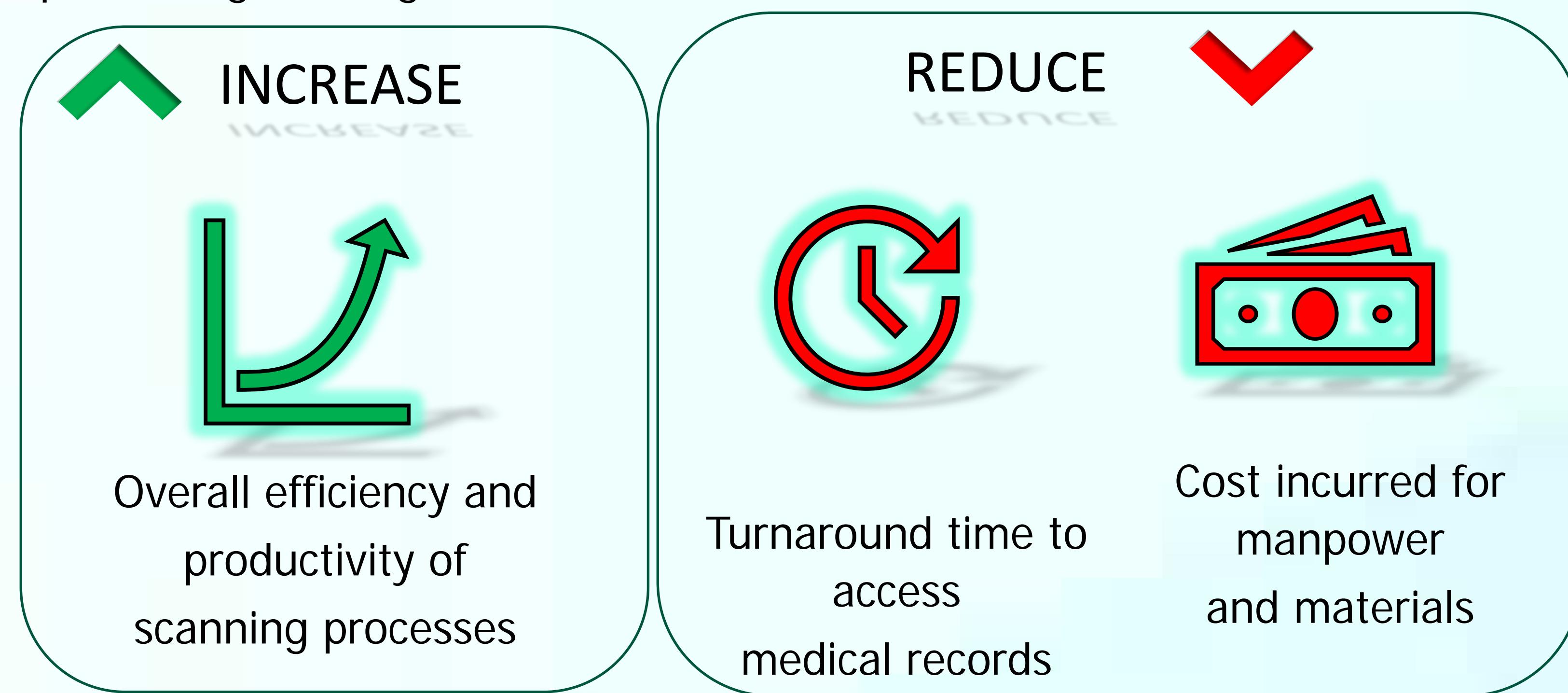
## Evidence for a Problem Worth Solving

- CHIO scanning workflow involves preparing, scanning, quality & index checking, indexing and uploading the document



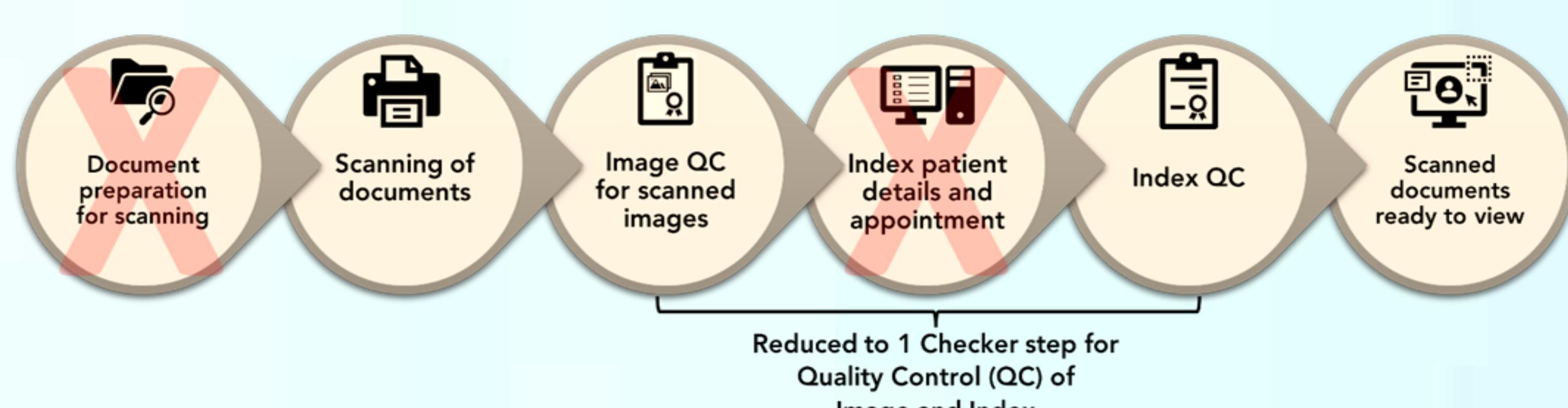
1. Significant human intervention is required in manual document preparation, quality control, and indexing
2. Use of separators and coversheets complicates the scanning and QC processes
3. Manual processes can be error-prone, time-consuming, and costly

Integrating AI into the document digitization process. This integration would leverage AI's strengths in automation, accuracy, and data processing, leading to:



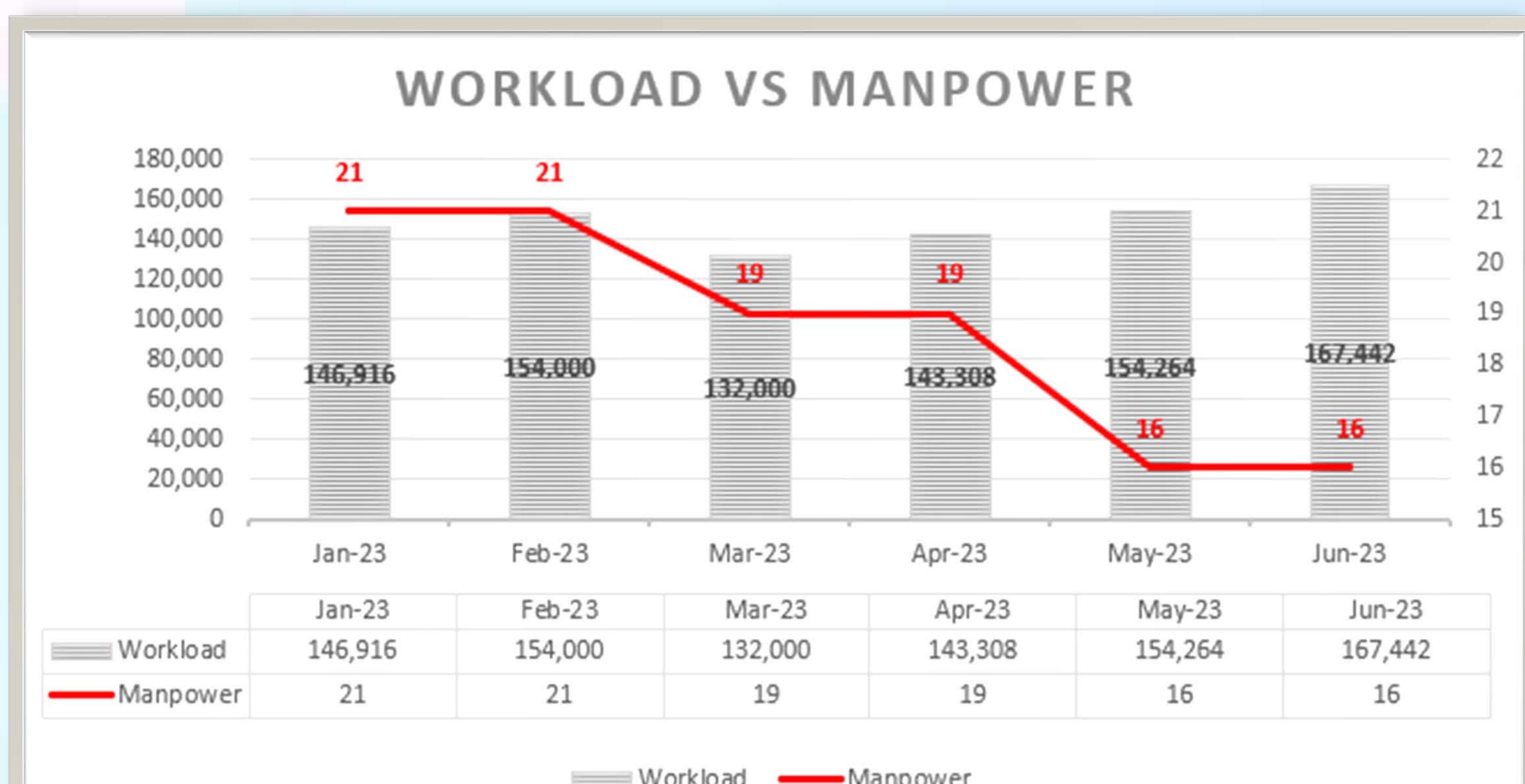
## Implementation

1. Use AI optical character recognition (OCR) to identify form structures and auto sort the forms into the correct document types to eliminate manual document prep
2. Embed QR code on documents to enable auto indexing of patient details and appointment to eliminate manual indexing

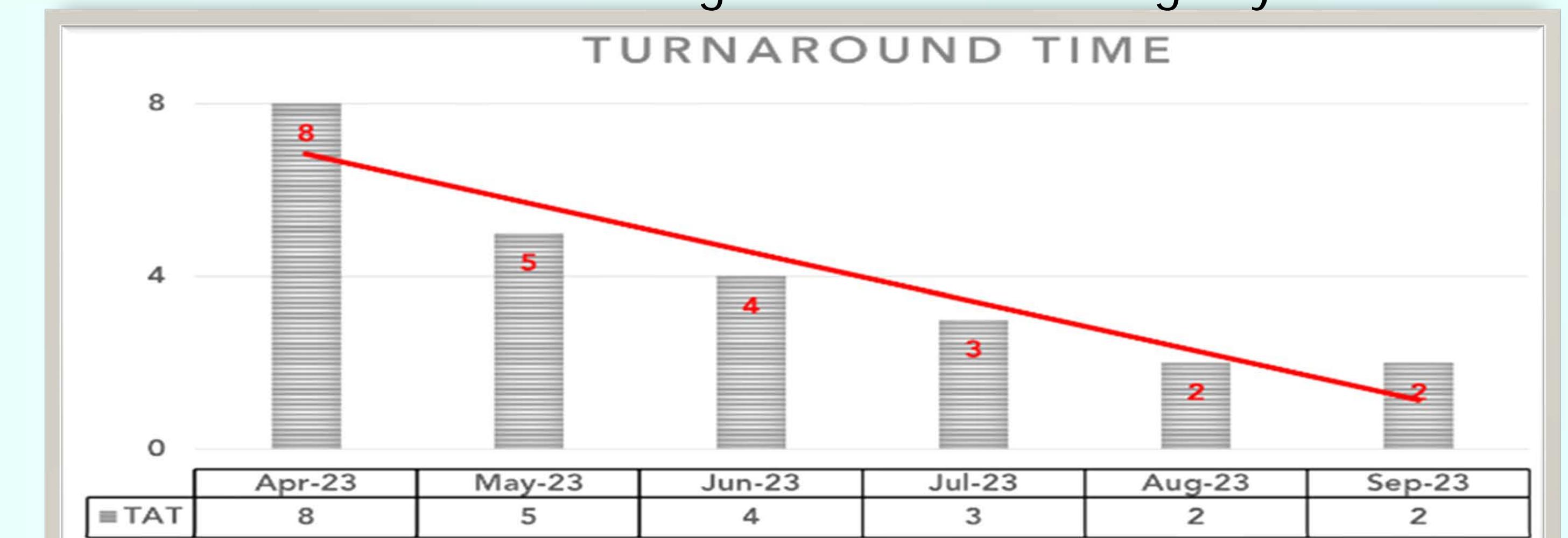


## Results

1. The implementation of AI technologies allowed us to cope with increasing demands despite a reduction in team size. This also creates opportunities for members to grow and be redeployed within the department



2. Impressive 400% improvement in average turnaround time of medical record scanning from 8 to 2 working days



## Cost Savings

1. An estimated \$24,000 annual materials cost savings is projected with the elimination of manual document preparation and scanning



2. \$200,000 annual manpower cost savings estimated with a reduced team size from 21 to 16 members

## Problems Encountered

1. Training staff on machine learning technology and new enhancements
2. Engaging stakeholders and vendors to maintain system performance
3. Training the machine to recognize form structures using image processing, and machine learning techniques

## Strategies to Sustain

### System update

#	Fix release	Preparation Start	Document Submission	UAT	Sign off	Release date
1	M4HX1-2024	11-Mar-24	18-Mar-24	21-Mar-24	5-Apr-24	
2	M5HX1-2024	8-Apr-24	15-Apr-24	18-Apr-24	10-May-24	
3	M5HX2-2024	6-May-24	13-May-24	16-May-24	31-May-24	
4	M7HX1-2024	14-Jun-24	21-Jun-24	24-Jun-24	12-Jul-24	
5	M7HX2-2024	29-Jun-24	6-Jul-24	9-Jul-24	27-Jul-24	

Bi-monthly hotfixes and updates keep the system current

### Training

	Sun	Mon	Tue	Wed	Thu	Fri
Abu	Checker	Checker	Checker	Checker	Checker	Checker
Jeri	Marker	Marker	Marker	Marker	Marker	Marker
Agila	Marker	Marker	Marker	Marker	Marker	Marker
Anu	Checker+	Checker+	Checker	Checker+	Checker+	Checker+
Asiah	Checker	Checker	Checker	Checker	Checker	Checker
Dinesh	AL	AL	AL	AL	Marker	Marker
Fadzil	Checker	Checker	Checker	Checker	Checker	AL
Weeling	Marker	Marker	Marker	Marker	Marker	Marker
Bee Kian	Marker	Marker	Marker	Marker	Marker	Marker
Steven	Marker+	Marker	Marker+	AL	AL	AL
Sue	SatOFF + AL	AL	RW	Marker	Marker	Marker
Siew Kuen	Marker	Marker	Marker	Marker	Marker	Marker
Weimin	Marker	Marker	Marker	Marker	Marker	Marker
Yazit	Marker	Marker	Marker	MC	MC	MC

Weekly role rotation ensures comprehensive training