

Improving radiology work prioritisation through implementation of smart worklists

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Introduction

With the rapidly growing volume of imaging examinations performed daily, prioritising worklists in order to produce timely reports has never been more challenging. Prior to this project, worklist prioritisation within the Radiology Information System was essentially performed manually; where the user was able to identify the referral source e.g A&E and priority e.g 2 Week-wait. Target turnaround times (TAT) are set nationally and are based on a combination of both source and referral priority, as outlined below.

	Urgent IP/A&E	Routine IP/A&E	2 Week-wait	Urgent GP/OP	Routine OP
Cross-sectional	12 hours	24 hours	3 days	1 week	4 weeks
Xray	12 hours	1 week	3 days	1 week	4 weeks
Fluoroscopy		24 hours	3 days		1 week

Aims

This project aims to optimise reporting worklist prioritisation by incorporating national TAT targets within the RIS worklists. This will allow reporters to easily identify which study is the next most urgent to report in order to provide reports in a timely manner for all patients.

New Process

We developed "Smart Worklists" within the Radiology Information System to incorporate national TAT targets. The Smart Worklist provides two main functions:

1. Automated worklist ordering based on time until TAT target breach
2. A traffic light system highlights time until breach for each scan

The worklist continuously updates breach times and reorders when new examinations are completed. Baseline data was acquired in 2022 and the new process was implemented at the start of 2023.

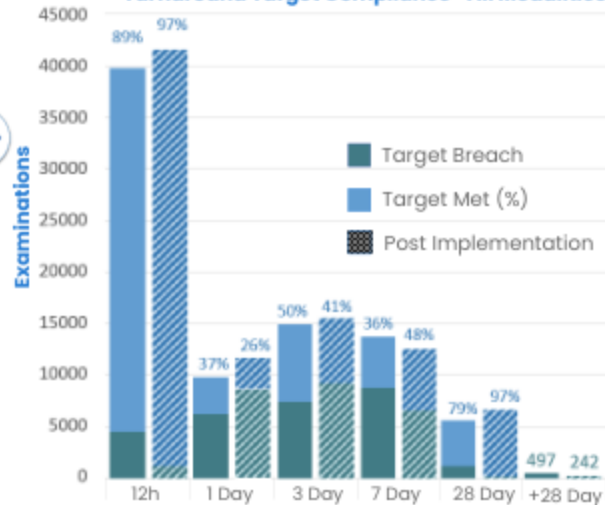
Category	Examination	Study Priority	Wait Type	Time to breach	Flag	Speciality
NHS	CT Shoulder fit	Urgent	Out Patient	11 Hours	Red (Breach)	TRAUMA & ORTHOPAEDICS
NHS	CT Abdomen and pelvis us	Urgent	Emergency Department	11 Hours	Red (Breach)	ACCIDENT & EMERGENCY
NHS	CT Colonography virtual	URG-ZWW	Out Patient	1 Day	Yellow	GENERAL SURGERY
NHS	CT Thorax with contrast	URG-ZWW	Out Patient	1 Day	Yellow	GENERAL SURGERY
NHS	CT Thorax abdomen pelvis	Urgent	Out Patient	6 Days	Yellow	GENERAL SURGERY
NHS	CT Thorax and abdomen w	Planned	Out Patient	14 Days	Green	MEDICAL ONCOLOGY
NHS	CT Thorax abdomen pelvis	Planned	Out Patient	18 Days	Green	RADIOTHERAPY
NHS	CT Shoulder fit	Normal	Out Patient	19 Days	Green	TRAUMA & ORTHOPAEDICS

Results

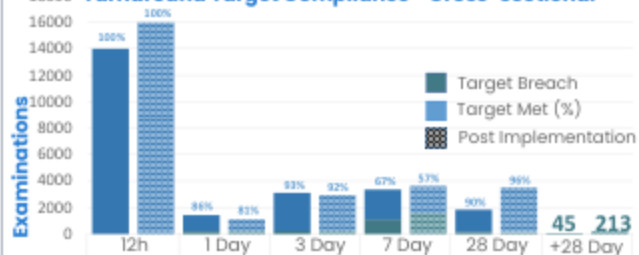
	Cross-sectional imaging		X-ray		Fluro, US and Mammo		Total	
	2022	2023	2022	2023	2022	2023	2022	2023
Total Exams	23720	27348	49613	48988	11084	11858	84417	88194
% Target Met	92.66	91.37	46.55	52.04	96.73	98.39	66.10	70.47

Despite a 7% increase in number of examinations performed within 2023, there was an increase of 4.4 % of TAT targets met. Although cross-sectional imaging was the worst performing, reducing by 1.3%, it should be noted this saw the largest increase in workload; up 15%.

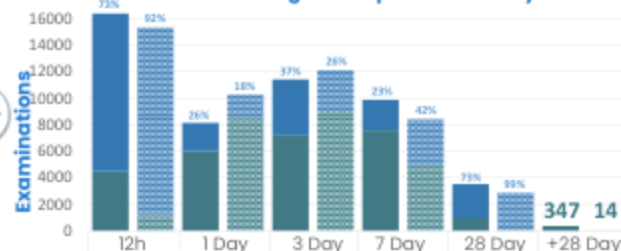
Turnaround Target Compliance – All Modalities



Turnaround Target Compliance – Cross-sectional



Turnaround Target Compliance – X-ray



The largest improvements have been demonstrated within the longer TAT targets, with 28 day showing the most significant percentage increase. Although the shorter TAT targets are not as impressive the largest increase in volume of examinations has been in the 12 hour category (particularly cross-sectional) and despite this there has been an overall improvement.

Conclusion

Despite an increase in imaging volume and a static workforce, following the introduction of Smart Worklists there has been an improvement in TAT targets achieved. This is now integrated as BAU in how we organise our reporting, has proven to be a useful visual tool to monitor performance and the methodology has been spread across NWL sector.