

Refining the use of CXR AI findings for the prioritisation of CXR reporting– A QIP

Background

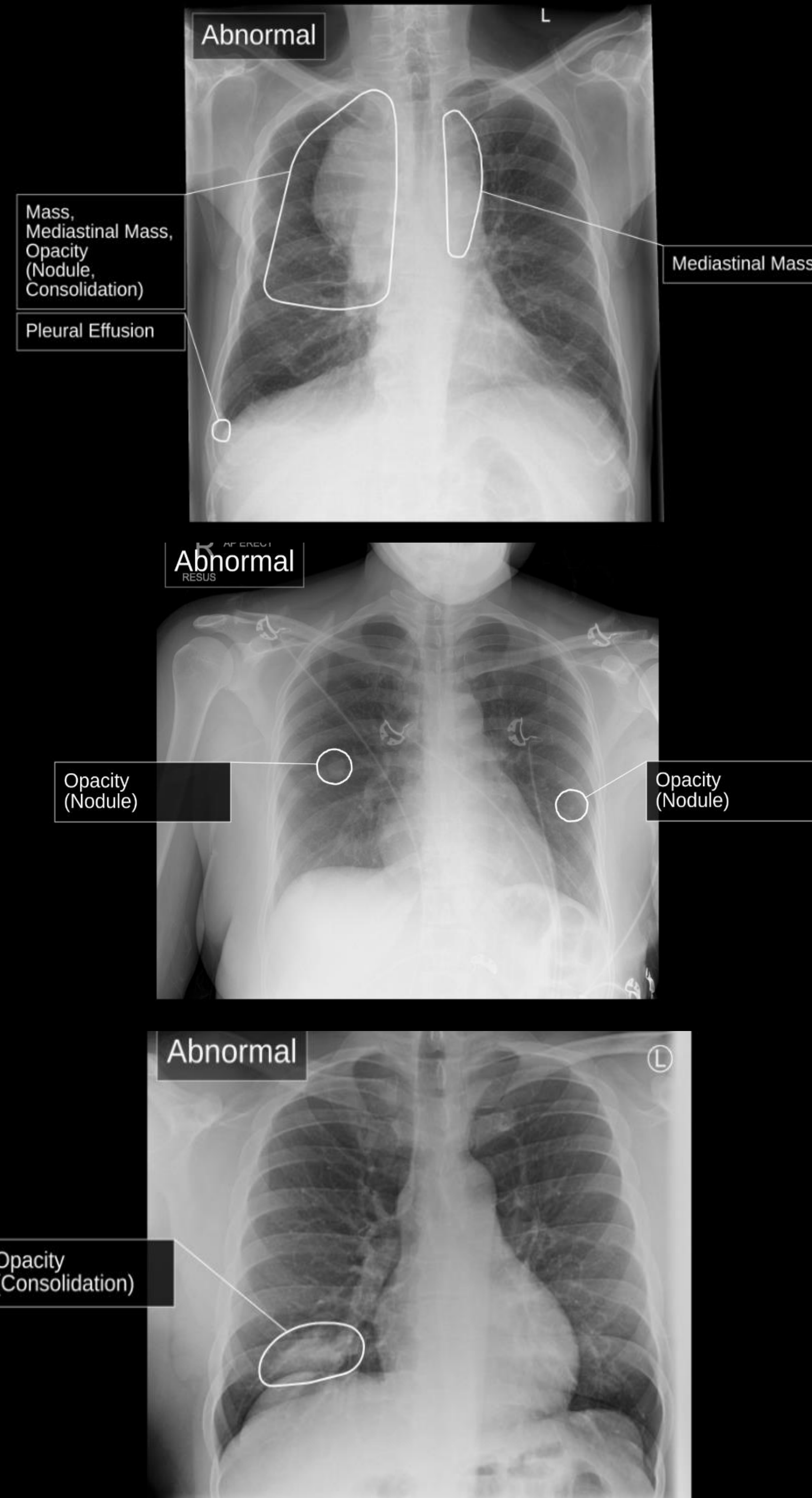
CXR AI triage was introduced to prioritise reporting enabling expedited management of actionable findings – this QIP aimed to optimise the AI prioritisation process.

Methods

The AI solution was applied to all outpatient, general practice and emergency department CXRs with 3 groups of priority: **P1A** (e.g. pneumothorax or TB) CXRs were reviewed immediately, **P1B** findings that might suggest cancer reported within 24hrs and **P2** less urgent abnormalities. Inclusion criteria for this QIP included all patients who had a CXR flagged by the AI (**P1B-P2**) and flagged by the radiologist for a significant finding pathway between 10/07/24 - 04/22/25. 605 cases were identified, following review 223 exams were deemed to not be significant leaving **382 exams**. The significant findings group was further divided into cases that should proceed to a treat and repeat CXR (T&R) or cases that require further investigation (FI).

Results

Only 5 AI findings were noted to be of value in detecting an actionable abnormality; **nodule**, **reticulonodular**, **pleural effusion**, **mediastinal widening** and **opacity**. A control group comprised all the CXRs prioritised as **P1B or P2** in the study period. The frequency of each finding within the T&R and FI subgroups was compared to its frequency in the control group. ‘**Nodule**’ occurred 3x more frequently in the FI group and 2x more in the T&R group, **mediastinal widening** occurred 2x more frequently in the FI group, and **opacity** occurred 50% more often in T&R group.



Intervention

Nuance reporting list were generated by dividing CXR flagged as abnormal into two groups to more accurately identifying those that required further investigation and no further action.

-**P1B** - Selected phrases “**nodule**” and “**mediastinal widening**” for further investigation.

-**P1B** - Selected phrase “**opacity**” – treatment and repeat.

Conclusion

This QIP identified the AI findings more frequently found in actionable CXRs and confirmed that those were included in the findings that contribute to the P1B priority, thus increasing the likelihood of identifying examinations that required further action and improving efficiency of CXR reporting.

AI finding	Significant Findings total	%	Treat and repeat	%	Further imaging	%	Total cohort	%
Total	382	1.9%	280	73.3%	102	26.7%	19834	-
Nodule	171	44.8%	107	38.2%	64	62.8%	4014	20.2%
Reticulonodular	40	10.5%	32	11.4%	8	7.8%	2015	10.2%
Pleural effusion	101	26.4%	80	28.6%	21	20.6%	7021	35.4%
Mediastinal widening	11	2.9%	2	0.7%	9	8.8%	746	3.8%
Opacity	292	76.5%	230	82.1%	62	60.8%	12129	61.2%
P1b	209	54.7%	130	46.4%	79	77.5%	6644	33.5%
P2	173	45.3%	150	53.6%	23	22.6%	13190	66.5%