Queensland Health
Clinical Excellence Queensland

Clinical Audit

Optimising the Quality of Diagnostic Imaging Referrals

Enhancing Patient Care Through Better Clinical Communication

Kai Bin. Law[1,2], Keeyeon. Kim[1,2]

[1]Faculty of Medicine, University of Queensland, Brisbane, Australia
[2]Caboolture Hospital, Caboolture, Australia
The authors declare no conflicts of interest.

Introduction

The quality of diagnostic imaging referrals directly impact radiologic interpretation as radiologists rely on the clinical context to guide their image analysis and reporting. Based on the clinical question, the images are reviewed with a specific purpose during a goal directed feature search process.

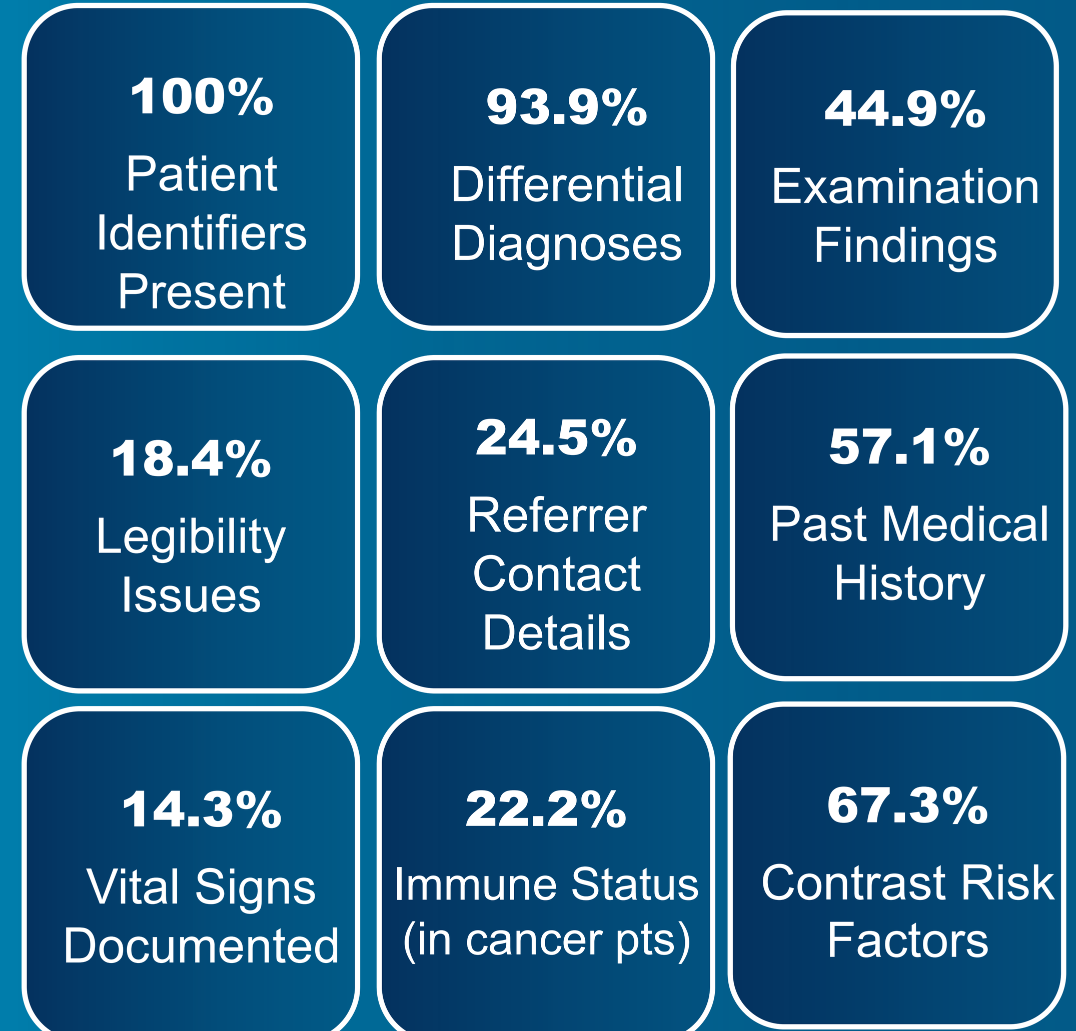
At Caboolture Hospital, imaging is outsourced to I-MED Radiology, separate to Queensland Health. As a result, the imaging referral form often serves as the sole source of clinical context.

This audit aims to review the quality of CT abdomen referrals in Caboolture Hospital based on recommendations from the Royal Australian and New Zealand College of Radiologists (RANZCR). An emphasis is placed on communication of relevant medical history including malignancy and immunosuppression. The purpose of this audit is the identify areas of improvement and propose strategies to address these.

Key Results

Among the 49 referrals, 24.5% scored 7 or below on the 14-point scale. The median score was 9 (range 5–12). Discrepancies between referral forms and The Viewer were identified in 28.6% of cases.

Out of the 12 patients with a history of malignancy, 3 were not discussed, and only 2 patients were reported as immunosuppressed out of a total of 5.



Method

A retrospective chart review was conducted on 49 CT abdomen referrals (1 duplicate referral) submitted in December 2024 throughout the hospital, including inpatient wards, emergency department, and outpatient clinics.

A 14-point scoring system was developed based on RANZCR recommendations to include the identity of patient, referrer, sufficient clinical detail to justify and select the diagnostic imaging and being unambiguous. The scoring system below includes relevant criteria such as diagnosis of interest, history of presenting complaint, examination findings, relevant past medical history including recent procedures.

As the referrals used a paper based system, handwriting legibility was assessed by two reviewers independently to give a final score, and discrepancies between referral forms and clinical records in The Viewer were analysed.

Criteria	Point Breakdown (total 14 points)
Patient Identification Details	1 point
Referrer Identification Details	3 points total • Referring Clinician's name (1 point) • Contact details (1 point) • Referring Consultant's name (1 point)
Legibility	2 points total 1 point each from 2 separate reviewers
Clinical Information	5 points total • Diagnosis of interest (1 point) • History of presenting complaint (1 point) • Examination findings (1 point) • Vital signs (1 point) • Relevant past medical history incl. previous diagnoses or recent procedures (1 point)
Investigations	2 points total • Pathology (1 point) • Previous imaging (1 point)
Contrast Risk Factor Questionnaire	1 point

Discussion

This audit demonstrates that a substantial proportion of referrals lack essential clinical details that may compromise diagnostic accuracy such as immunosuppression or malignancy. These gaps are concerning given that radiologists rely solely on referral information when lacking access to clinical records.

Malignancy history increases clinical suspicion for metastatic, recurrent, or paraneoplastic lesions. Therapy-associated radiological changes including post-surgical variations and chemo/radiotherapy effects can be considered. Immunosuppression increases risk of opportunistic infections with atypical presentations, cavitating lesions, and altered healing responses. Without clinical context, subtle signs may be overlooked, leading to false interpretations or missed diagnoses.

To address this issue and enhance patient outcomes, our suggestions include:

- Standardised referral template for relevant medical history, including malignancy/ immunosuppression
- Include prompts that I-MED Radiology lacks QH medical records access
- Consider granting I-MED access to ieMR and The Viewer
- Departmental education on accurate imaging request forms
- Follow-up audit to assess impact of above strategies

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