

# Health Roundtable

## Standardised Contrast Reaction Documentation

Redland Hospital MSHHS:

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# Key Problem

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- The incidence of contrast reactions is reported as 142.5 per million and deaths 2.1 per million (et al E C Lasser)
- A retrospective audit (01.2017 – 10.2018) identified 9 IV contrast reactions which were documented in an inconsistent manner.
- IV contrast studies are performed at hospital and non-hospital sites.
- For some external referrers (eg GP) the only documentation that would contain notification of a contrast reaction is the Radiology Report or My Health Record (if the patient had one).
- A clinician, nurse, radiographer, medical imaging assistant or radiologist may be the one person to check for a contrast reaction alert in a single record according to their scope of practice and/or access rights.

# Aim of this Innovation

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- To identify and implement a departmental multi-alert protocol for documenting and communicating patient contrast reactions to all relevant stakeholders.
- This will allow for the correct referral (ie hospital vs suburban private practice) and consideration (ie Pre med or alternate imaging) for patients with a previous contrast reaction.
- To capture and categorise all patient contrast reactions for documentation and review.



# Baseline Data / Current Situation

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- Medication Management (contrast reactions/adverse events) were bundled together with Extravasations (Ct contrast injections) and an audit already covered extravasations.
- Historically contrast reactions were reported as a number with no further investigation or associated audit.
- With the introduction of ieMR – how were reactions communicated to relevant stakeholders??
- Data on contrast/medications reactions became a retrospective audit and expanded to a QIA by Nicole Turley.

# Key Changes Implemented

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- Review of CT Contrast reactions process to ensure contrast reactions:
  - are listed on the contrast checklist
  - are documented within RISKMAN
  - are documented within RIS
  - are documented within ieMR
  - that the documentation is via a proforma/template to ensure relevant applicable information is recorded
- Review into how allergies/alerts should be entered in ieMR
  - How to categorise CT reactions
  - Orientation instructions updated to outline the process
- Update the Medication Management Forms to enable improved record keeping of reactions and enable a cleared pathway for medication management.
- QScan Radiology MI reports
  - Reports to document reactions at time of reporting or amended if patient has a delayed reaction or radiologist not notified at the time of reporting.

# Outcomes so far

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- Due to the number of recommendations within the audit report the scope for the innovation was to be conducted as a Quality Improvement Activity.
- Documentation and protocols have been reviewed and updated by the audit and QIA author : Nicole Turley.
- Medication Management Log amended to reflect a separate section for contrast reactions.
- Consultation with Qscan Radiologist in-charge across two sites to confirm inclusion of contrast reactions in Radiology Reports.
- Disseminate new protocol to all relevant staff and monitor utility.

# Lessons Learnt

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- Having medication reactions and extravasations combined in a register created a mask where the more frequent extravasation activity made the less frequent contrast reactions become less visible and therefore not investigated or audited.
- Recommendation: Have a separate log, process and audit for patient reactions.
- Recommendation: Review reactions and types of reactions internally. Review criteria and pathways for reporting reactions both internally and external to the MI department.
- It was highlighted that there was no current pathway (apart from verbally) to notify and communicate a contrast reaction to the Radiologist for inclusion in the Radiology Report.

# Innovation Summary Slide

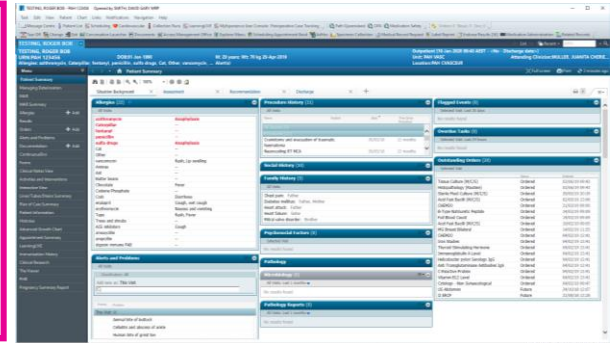
## Title: Standardised Contrast Reaction Documentation

### Health Service: Redland Hospital MSHHS

Problem: Documented contrast media reactions for patients can be sporadic and inconsistent.

Solution: Reactions should be documented using multiple methods as to notify all relevant internal/external stakeholders and multiple disciplines performing final checks.

Recommendations:  
Document reactions in: The Radiology Report; Electronic Medical Record; and Radiology Information System to prevent “Swiss Cheese” model patient incident.



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# Incidence of Contrast Reactions

- **Reports on contrast media reactions: analysis of data from reports to the U.S. Food and Drug Administration.**
- [E C Lasser](#), [S G Lyon](#), [C C Berry](#)
- Published Online: Jun 1 1997 Doi: <https://doi.org/10.1148/radiology.203.3.9169676>
- **Abstract**
- **PURPOSE:** To compare U.S. Food and Drug Administration (FDA) and manufacturer data about patient reactions to ionic and nonionic, low- and high-osmolar contrast media from 1990 through 1994.
- **MATERIALS AND METHODS:** Reactions to all available high-osmolar and four low-osmolar contrast media (ioxaglate, iohexol, iopamidol, and ioversol) were compared. Ioxaglate is composed of charged particles, and data are reported separately. Reactions were also compared with data from 1980 to 1984, when only high-osmolar contrast media were available.
- **RESULTS:** With high-osmolar contrast media compared with the three noncharged low-osmolar media, the incidence (per million examinations) was highest for all reported reactions (193.8 vs 44.4), severe reactions (37.4 vs 10.5), and deaths (3.9 vs 2.1). With high-osmolar media compared with ioxaglate, respectively, the incidence of total reactions was higher (193.8 vs 142.5), of severe reactions was almost the same (37.4 vs 33.6), and of death was lower (3.9 vs 6.4). The incidence of severe reactions to total reactions was higher with nonionic media (23.7%) and ioxaglate (23.6%) than with ionic media (19.3%). The incidence of death to severe reactions was 19.7% with nonionic media, 19.0% with ioxaglate, and 10.4% with high-osmolar media. The incidence of renal failure (as a percentage of total reports) was approximately 3.6 times higher with all low-osmolar contrast media (2.3%) than with high-osmolar media (0.6%), usually in patients with pathologic cardiac conditions.
- **CONCLUSION:** All of these factors merit consideration in the evaluation of the utility of a given contrast medium.



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