## **Transfusion reaction investigation:** Is a targeted approach effective?

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## Background



Acute transfusion reactions are varied, but can generally be categorised into mild, moderate and severe; allergic/anaphylactic, haemolytic, respiratory, febrile.



To review the effectiveness and efficiency of a targeted transfusion reaction investigation approach between 2020 and 2022.



Historically, in our organisation all transfusion reactions were reported to the transfusion laboratory and investigated by repeat pre-transfusion testing and microbiological testing of implicated components.



Following the BSH guideline in 2012 a move towards a targeted approach to investigations was initiated.



A flow chart guiding the clinical team in differentiating mild transfusion reactions from moderate or severe, and suggesting relevant investigations was initiated in 2017 (Figure 1).

In 2020 the laboratory investigation form was updated to promote the targeted approach.



In 2022 the transfusion reaction order sets on the electronic patient record system were enforced with all moderate/severe reactions discussed with a haematologist. Orders sets include default tests appropriate for the reaction type, including pathology and imaging.

## Results

A total of 22 transfusion reactions were investigated between 2020 and 2022.

Inappropriate investigations were reduced by 40%. Inappropriate investigations of mild reactions were reduced from 5 in 2020-2021 to 0 in 2022.

Appropriate investigations being missed were reduced from 5 in 2021 to 0 in 2022.

Instances where no clear outcome was recorded for the patient and no advice on subsequent transfusion reduced from 30% in 2020 and 37.5% in 2021 to 0% in 2022.

NHS

Figure 1: Flow chart for advice on reporting

Patient exhibiting possible features of an acute transfusion reaction which may include:

Fever, chills, rigors, tachycardia, hyper- or hypotension, collapse, flushing, urticarial, pain (bone, muscle, chest, abdominal), respiratory distress, nausea, general malaise



Accessible on the electronic patient record (EPR) system via a hyperlink

Order sets in the EPR guide appropriate investigations depending on reaction type.

Test orders are default but can be amended by the user *if required*.

Multiple order sets can be used if appropriate.





- Laboratories face challenges with staff recruitment and retention and budgets
  - It is important to ensure that all testing is appropriate and necessary
- Unnecessary repeated pre-compatibility testing for all suspected acute transfusion reactions can be avoided using a targeted approach to investigation
- Flow chart has enabled clinical and laboratory teams to identify patients with mild transfusion reactions, without need for haematologist involvement, that can continue to receive transfusion with appropriate support
  - Haematologist input in moderate/severe reactions ensures appropriate order sets are used
- Default order sets support standard practice ensuring all appropriate testing is completed based on specialist advice
- This approach has reduced the number of unnecessary laboratory investigations, improved identification of clear outcomes for the clinicians and has proved to be effective and efficient

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