

# Serious Transfusion Incident Report (STIR) 2013-14

## Blood Matters



Blood Matters



# Haemovigilance

## Definition:

- Haemovigilance is an organised set of surveillance procedures covering the entire transfusion chain from donor to patient, and encompassing products and processes.
- To collect and assess information on unexpected and undesirable effects resulting from the therapeutic use of labile blood components and to prevent their occurrence or recurrence.<sup>1</sup>

1. Faber JC. Worldwide overview of existing haemovigilance systems. *Transfusion and Apheresis Science* 2004;31:99–110.



# STIR

- The Blood Matters program commenced in 2002 as a collaboration between the Victorian Department of Health and the Australian Red Cross Blood Service, with the aim of improving clinical transfusion practice.
- STIR commenced in 2006. It now has private and public health services from four states reporting (Victoria, Tasmania, ACT, and NT).
- STIR is a voluntary reporting system that aims to capture information on incidents, reactions and near misses relating to transfusion of blood products and provide recommendations to improve the safety of transfusion.



# STIR (cont.)

- All data reported is de-identified, with no patient details except for age and gender.
- Health services are identified by a code assigned by the STIR office, and these codes are not used in any expert reviews or reporting.
- Summary reports for health services are available as requested or on a six monthly basis.
- Previously STIR reports were available every two years, this is the first of what is to become an annual report.
- The report includes summary data, case studies and recommendations.



# Reporting categories

The system captures two main categories of incidents, clinical and procedural.

## Clinical reporting forms:

- Acute transfusion reactions –this includes febrile non-haemolytic reactions, allergic or anaphylactic reactions and acute haemolytic reactions
- Transfusion related acute lung injury (TRALI) / transfusion associated circulatory overload (TACO)
- Delayed reactions
- Transfusion associated graft versus host disease (TAGVHD)
- Post transfusion purpura (PTP)
- Transfusion transmitted infection (both bacterial and other)

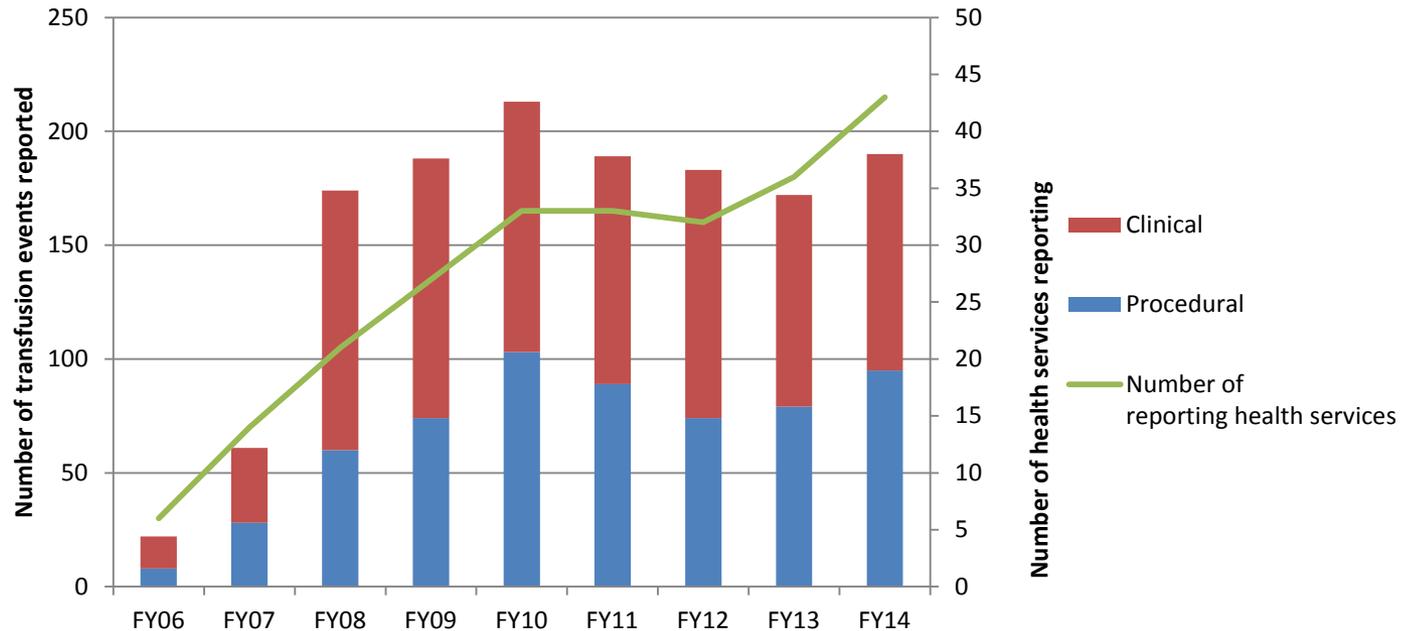
## Procedural reporting forms:

- Incorrect blood component transfused (IBCT)
- Wrong blood in tube (WBIT)
- Other near miss



# Report for 2013-14

## Reports to STIR by year

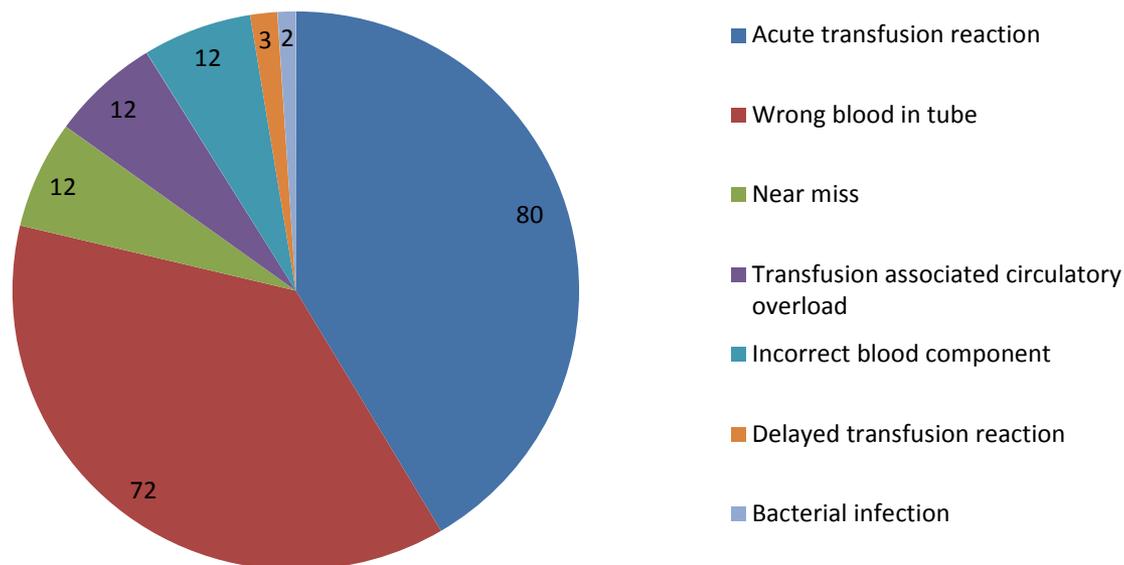


Reporting to STIR has remained steady after several years of increasing reports. This may be due to changes in the reporting criteria, that has reduced the number of minor reactions being reported.

There were 190 notifications reported for the period July 1, 2013- June 30, 2014, resulting in 193 adverse events.



# Types of events reported 2013-14



Acute transfusion reactions includes

- Febrile non-haemolytic reactions (24)
- Allergic reactions (40)
- Acute haemolytic reactions (2)

There were no reports of post-transfusion purpura, TRALI or viral infection in this period.



# Blood products implicated

Product	Number	Percentage
Red Cells	79	41
Platelets	24	12
Fresh Frozen Plasma	17	9
Cryoprecipitate	1	<1
Multiple products	7	14
Other*	65	34

\*Events involving pre-transfusion specimens



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# Recommendations

## Recommendation 1:

- Allergic/anaphylactic reactions are the most common acute reaction reported to STIR
- Investigation of severe allergic reactions should include testing for IgA deficiency on a pre-transfusion specimen



[http://www.transfusion.com.au/blood\\_basics/blood\\_groups/abo\\_rh](http://www.transfusion.com.au/blood_basics/blood_groups/abo_rh)

# Recommendations (cont.)



## Recommendation 2:

- TACO is under-reported and under-recognised, but associated with potentially high mortality for transfusion recipients. STIR recommends transfusing health services must ensure there is improved monitoring and assessment of at risk-individuals, especially those with pre-existing cardiac failure prior to transfusion.
- STIR recommends health services should investigate and implement the use of a single-unit guideline for high-risk clinical areas to help prevent TACO.
- Information on a single-unit guideline, including tools and resources is available through the National Blood Authority website [www.blood.gov.au/single-unit-transfusion](http://www.blood.gov.au/single-unit-transfusion).



# TACO case study

A 92-year-old woman with anaemia related to ongoing gastrointestinal bleeding (Hb 77 g/L) and a history of congestive cardiac failure was admitted by her GP to a day ward for transfusion of three units of red cells.

Each unit was administered over three hours successively without medical review.

At the end of the third unit the patient developed dyspnoea, restlessness and reduced oxygen saturation. She was treated with oxygen therapy, diuretics and salbutamol.

Chest X-ray supported the diagnosis of TACO.  
The patient recovered after an extended stay.

This case triggered a review of the governance of patients attending the day unit within the health service.



# Clinical reports

Type of Report	Number
Acute Transfusion Reactions	80
• FNHTR	24
• Allergic	40
• Acute haemolytic	2
Transfusion associated circulatory overload	12
Delayed haemolytic	2
Bacterial sepsis	2

There were no reports of TRALI, TA-GVHD, PTP or viral infections in this period.



# Wrong blood in tube (WBIT)

- WBIT remains the most common procedural event reported (72% of procedural events)
- Failure of the patient identity check is the most frequently reported contributing factor to these events
- Many health services are working on methods to address this issue, including the use of staff reflection tools to address issues of professional accountability
- Self-reflection is used widely in healthcare to consciously and critically analyse one's own practice
- Two self-reflection tools are included in the report.



# Recommendations (cont.)

## Recommendation 3:

- All staff involved in the collection of blood specimens should have training, not only in collection technique, but also in the process of patient identification and specimen labelling.
- Zero tolerance policies must be in place regarding acceptance of all pathology specimens to ensure compliance with collection policy at all times, and to reduce the risk of unnecessary transfusions due to incorrect full blood examination (FBE) results.
- Health services should consider the use of technology to assist staff in patient identification and specimen labelling processes.
- Free courses are available through BloodSafe eLearning Australia  
[www.bloodsafelearning.org.au](http://www.bloodsafelearning.org.au)

The screenshot shows the BloodSafe eLearning Australia website. At the top, the logo 'BloodSafe eLearning Australia' is displayed, along with the tagline 'Award winning transfusion practice and patient blood management education'. Navigation links include 'Home', 'Our courses', 'Links & Resources', 'Promotional materials', 'About us', and 'Help & FAQs'. There are also buttons for 'Report Administrator' and 'Login / Register'. A search bar is present on the right. The main content area features a video player with the title 'Learn the risk:' and a description: 'Mistakes in collecting blood specimens can start a chain of interconnected events leading to the transfusion of incorrect blood.' Below this, there are two columns of course categories: 'Transfusion Practice Courses' and 'Patient Blood Management Courses'. The 'Transfusion Practice Courses' section lists 'Clinical Transfusion Practice', 'Collecting Blood Specimens', and 'Transporting Blood'. The 'Patient Blood Management Courses' section lists 'Patient Blood Management', 'Critical Bleeding', 'Iron Deficiency Anaemia', 'Perioperative', and 'Postpartum Haemorrhage'. A video player is also visible on the right side of the page, showing a close-up of a blood specimen being collected. At the bottom right, there is a section for the 'Iron Deficiency Anaemia (IDA) App' with a mobile device image and text indicating it is available for free on iPhone, iPad, and Android.

# Incorrect blood component transfused (IBCT)

Category	Number reported
Antigen-antibody issues	1
Components that did not meet specific requirements for patient	5
Inappropriate plasma/platelet product	3
Inappropriate red cell product	3
Incorrect blood component to incorrect patient	1

- In this reporting period there was no serious harm to patients.
- A health service shared their response to the issue of a number of IBCT episodes in their emergency department by developing a “time out” prior to transfusion.



# Recommendations (cont.)

## Recommendation 4

- Education of staff regarding correct checks at the patient side. This must emphasise patient identity checks, and confirmation that the product details match the prescription.



The screenshot displays the BloodSafe eLearning Australia website. The header includes the logo, navigation links (Home, About Us, Our Courses, Resource Centre, FAQ, Contact Us), and a red navigation bar with 'New Registration' and 'Login' buttons. The main content area is titled 'Our Courses' and features a large image of a healthcare professional performing a transfusion. Below the image is a red banner for 'CLINICAL TRANSFUSION PRACTICE' with a navigation menu (Introduction, Course Details, Endorsement & CPD, Assessment, Development Team) and an 'ACCESS COURSE' button. The 'Introduction' text describes the course's aim to develop knowledge of blood transfusion practice and lists learning modules: 1. Risk and benefits - The decision to transfuse, risks, benefits and informed consent. 2. Pre-transfusion samples - Importance of patient identification and specimen labelling. 3. Picking up blood - Transporting and storage of blood. 4. Administering blood. A sidebar on the right lists 'Transfusion Practice Courses' (Clinical Transfusion Practice, Collecting Blood Specimens, Transporting Blood) and 'Patient Blood Management Courses' (Patient Blood Management (PBM), Critical Bleeding, Perioperative, Critical Care, Postpartum Haemorrhage (PPH), Iron Deficiency Anaemia (IDA), Medical and Specialities).

# Conclusion

- Errors and incidents can occur at any point in the transfusion chain.
- It is important that all staff involved in this chain are aware of their role and the risk to patients.
- Serious errors are rarely just one mistake or lapse, there are often several steps that have gone wrong.
- The final bedside identity check is the last opportunity to find an error from earlier in the chain, and it is therefore vital to get right every time.



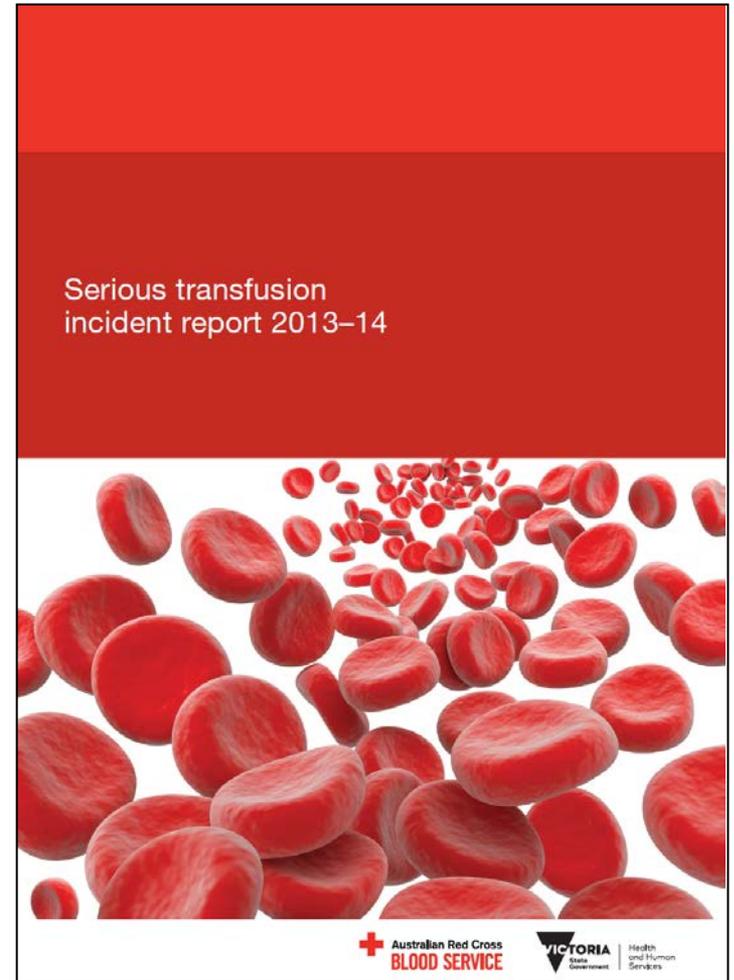
# Conclusion

- Some incidents will occur regularly with there is little clinical or laboratory staff can do to prevent them e.g. allergic reactions.
- Some incidents will occur rarely due to the steps taken to prevent them e.g. bacterial contamination of products.
- Some incidents occur regularly, and may have disastrous results for patients. These are generally preventable with good patient/product identification procedures e.g. wrong blood in tube, incorrect blood component transfused.
- All staff should be aware of their role in the transfusion chain and what they can do to prevent incidents.



The report is available at:

<http://www.health.vic.gov.au/bloodmatters/>



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# References

1. Faber JC. Worldwide overview of existing haemovigilance systems. *Transfusion and Apheresis Science* 2004;31:99–110.
2. Bolton-Maggs, P. SHOT. Haemovigilance and the UK schemes. Oct 2014. <http://www.shotuk.org/wp-content/uploads/SHOT-Information-and-teaching-slide-set-Oct-2014.pdf>



# Acknowledgements

*Thank you to the participating Victorian, Tasmanian, Australian Capital Territory public and private health services for their contribution to STIR.*

*“We would like to acknowledge the Australian Red Cross Blood Service and the Australian governments that fully fund the Blood Service for the provision of blood products and services to the community”.*

