Recognising and reporting acute transfusion reactions: Experience from STIR

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State Government Victoria

Australian Red Cross BLOOD SERVICE

Department of Health

Serious Transfusion Incident Reporting (STIR)

- Blood Matters:
  - Clinical transfusion practice improvement program
  - Victoria and Tasmania
  - Partnership between DoH and Blood Service
  - Clinical governance
  - Transfusion nurses
  - Graduate certificate transfusion practice
  - Haemovigilance

Serious Transfusion Incident Reporting (STIR)

- Pilot 2006
- Multi-state participation
- Voluntary reporting
- Fresh components
- Categories based on SHOT
- National HV data dictionary
- Near misses
- Links with state sentinel event program
- Report to national HV program

Aims of STIR

- Measure and monitor serious transfusion incidents, including near misses, relating to administration and handling of fresh components and pretransfusion samples

- Derive recommendations for better, safer transfusion practice and disseminate these to health services, state and federal governments and the Australian Red Cross Blood Service

STIR

- Two-stage on-line reporting:
  - Initial notification
  - Detailed case investigation form
- MS Word fillable form, MS Access database
- De-identified for patient, staff, institution after report
- Review by HTC prior to submission


Serious Transfusion Incident Reporting (STIR) program

health

Procedural reporting form- incorrect blood component transfused (IBCT)

IBCT-patient was transfused with a blood component or plasma product that did not meet the appropriate requirements or was intended for another person.

Incident Identifier [redacted] Office Use only

Please complete information into the grey shaded boxes and check boxes, notification information maybe be included in this form.

1. Date and time of incident:
   Date 23/06/2010 dd/mm/yyyy Time 17:00 hrs (24hr clock hh:mm)
2. Summary of what happened: Not sure, I was asleep at the time
3. Patient diagnosis and reason for admission? missing an arm, think it might have been a mosquito bite.
4. Reason for transfusion? It was a BIG mosquito
5. Was the implicated incident between?
   ☐ 8am–8pm ☐ 8pm–midnight ☒ midnight–8am
6. Was the transfusion episode?
   ☒ emergency ☐ routine ☐ unknown ☐ N/A
7. Where did the incident occur? (please one check box)
   ☐ Theatre ☐ ICU ☐ Emergency Department ☐ Maternity/Delivery suite
   ☐ Ward ☐ Ambulatory care ward/ Day ward ☒ Home Transfusion
   ☐ other (please specify)

Review by multidisciplinary expert group: final classification, severity, imputability

ATRs

- Acute haemolytic
- FNHTR
- Allergic/anaphylaxis
- Bacterial infection
- TACO
- TRALI

Occurring during or up to 24h following transfusion

(Transfusion-associated dyspnoea)

Initial notifications 2006-2012

- 984 reported events
- 973 patients (54% F)
- Mean age 49y
- 190 events in <18y
- Initially reported as
  - suspected: 396
  - confirmed: 592
- 542 events (55%) a/w RBCs

Reaction	N	%	
ATR	499	50	
WBIT	239	24	42%
Near miss	110	11	
IBCT	66	7	
DTR	27	3	
Bacterial*	18	2	
TRALI*	29	3	
PTP*	1	<1	

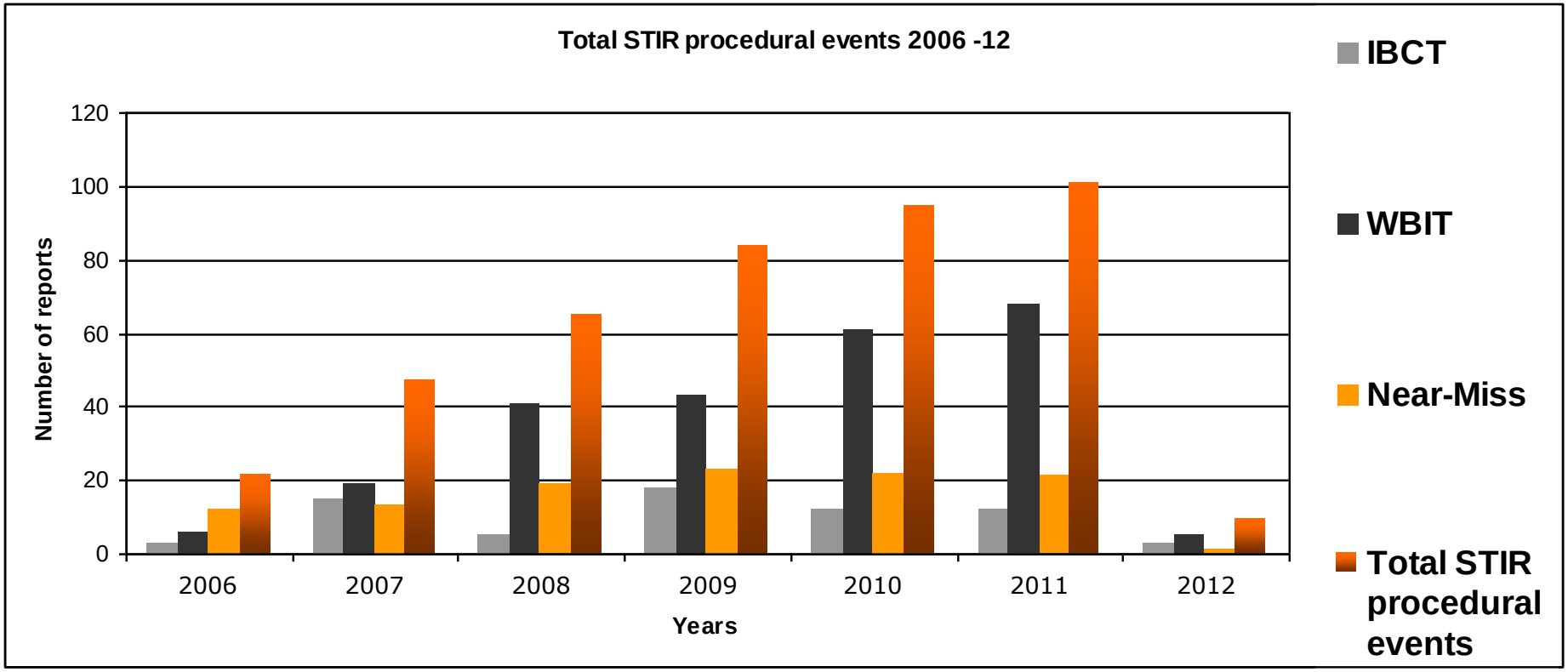
* Suspected, not confirmed

ATRs 2006-2012

- 60% occurred in general ward
- Fever most common reported symptom, often with chills and/or rigors
- Sometimes with dyspnoea, hypertension, tachycardia, nausea, vomiting

- Average 68 min from start tx to identification symptoms

- 9 sentinel events, mostly ABO inc tx
- No deaths
- Many cases ultimately called FNHTR
- 192 allergic reactions (37% all ATRs)
- Severity allergic reactions:
  - mild to moderate (56%)
  - other severe allergic requiring adrenaline (23%), anaphylaxis (21%)



(To March 2012)

Case 1: IBCT: storage and patient ID

- Anaesthetised patient – emergency surgery for spinal cord compression
- Incorrect unit and paperwork retrieved from theatre fridge
- Checked unit against paperwork – match
- Not checked against patient wristband
- Blood group of red cell unit: B RhD positive
- Blood group of patient: O RhD positive
- Unclear how many mL administered
- Admitted to ICU post-op and made a full recovery

"Yee-ouch! That's gotta hurt."

Case 2: IBCT: ID and labelling

- Sample tube unlabelled and left behind when ED patient removed from resuscitation bay
- Deteriorating (new) patient moved from ED bay to resuscitation bay
- Tube labelled with the new patient's label
- Request for blood sent to lab
- Lab issued 4 units group A RBC
- 2 units transfused in ED and 2 issued for transfer
- Patient found to be group O at receiving hospital

Case 2 cont'd: IBCT

- Lack of compliance with patient ID and specimen labelling protocols
- Lab queried Hb discrepancy AND and unsigned collector's declaration person but still accepted and processed sample
- Lab "was urged to continue" due to deterioration of patient
- Provision of group A blood when could have issued emergency group O unXM

Case 3: IBCT: transcription error

- Preterm infant – emergency transfusion in NICU
- Prescribed red cells for Hb 93g/L
- Pathology results transposed
  - *Platelets 93, Hb 130*
- Post-tx Hb not documented
- Clinical consequences unknown

Case 4: Blood group discrepancy/patient ID

- Historical blood group different to current specimen
- Nursing staff collecting specimen – correct patient ID procedure

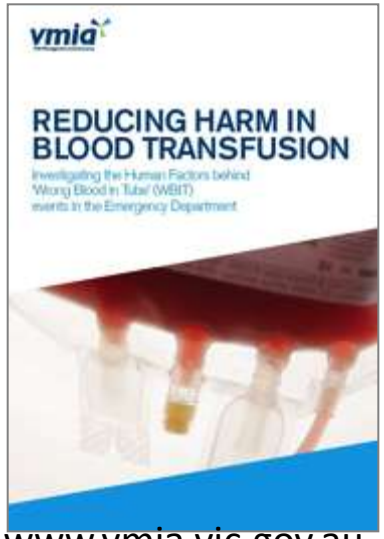
- Patient using sister's name, DOB and Medicare card

Our experience

- ATRs common but often difficult to classify (data, definitions)
- Many mild – but accepted anyway to encourage participation
- Improvements in data completeness with e-forms reduce delays/re-work and assist with assessing cases
- Hospitals generally now review before submission – data quality
- Role of TN and HTC
- Imputability and severity assignments still challenging – esp WBIT and near misses
- Value of central expert review group
- Role of human factors in procedural errors/ATR
- Patient education and participation

Taking action

- Share data with reporting hospitals
- Share experience: TN network, ANZTP SIG (www.anzsbt.org.au)
- Feedback to hospitals on sentinel events and investigations
- Recommendations to DH on policy and practice issues
- Advice/instruction to hospital CEOs, quality managers
- Educational activities for diverse range of staff
- Provide data to national HV system
- Research
- Design and test interventions



www.vmia.vic.gov.au

How do we monitor hospital transfusion practice using an end-to-end electronic transfusion management system? Murphy MF et al, Transfusion 2012

www.health.vic.gov.au/bloodmatters

- Blood Matters program
- STIR definition guide
- 2006-07 & 2008-09 reports

Acknowledgements

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