

How is a tool developed for the
Aerospace Industry
being used to prevent a leading cause of
ABO incompatible transfusions?

Jo Main
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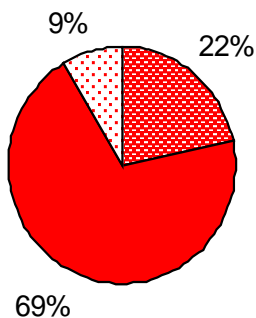
What is the leading cause of ABO incompatible transfusions?

- Human error¹
- Mislabeled specimens – what is the risk?

¹ Dzik W. Emily Cooley Lecture 2002: Transfusion Safety in the Hospital Transfusion. 2003;43:1190–1199

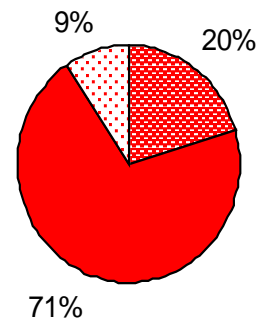
Peter Mac enforces ABSOLUTE Zero tolerance

2007



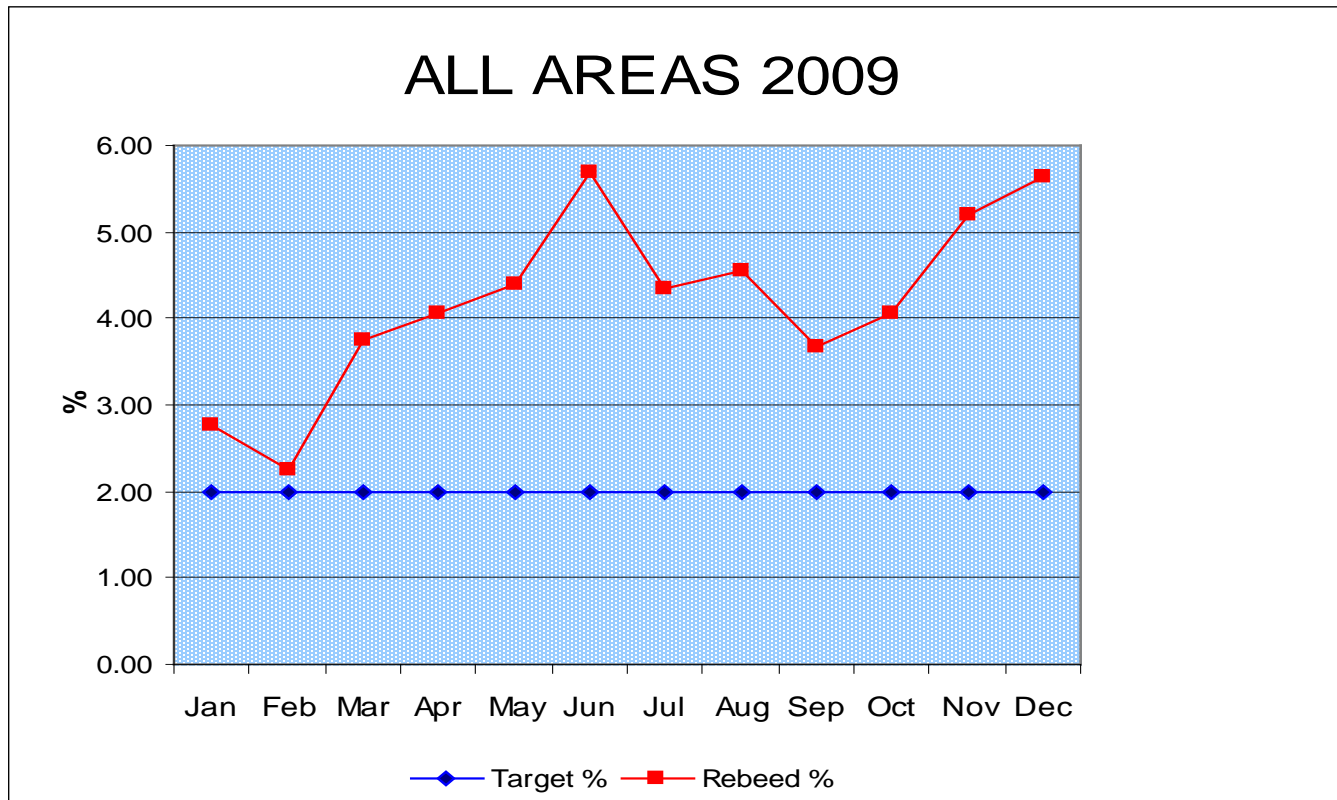
Form Specimen Haemolysed

2008

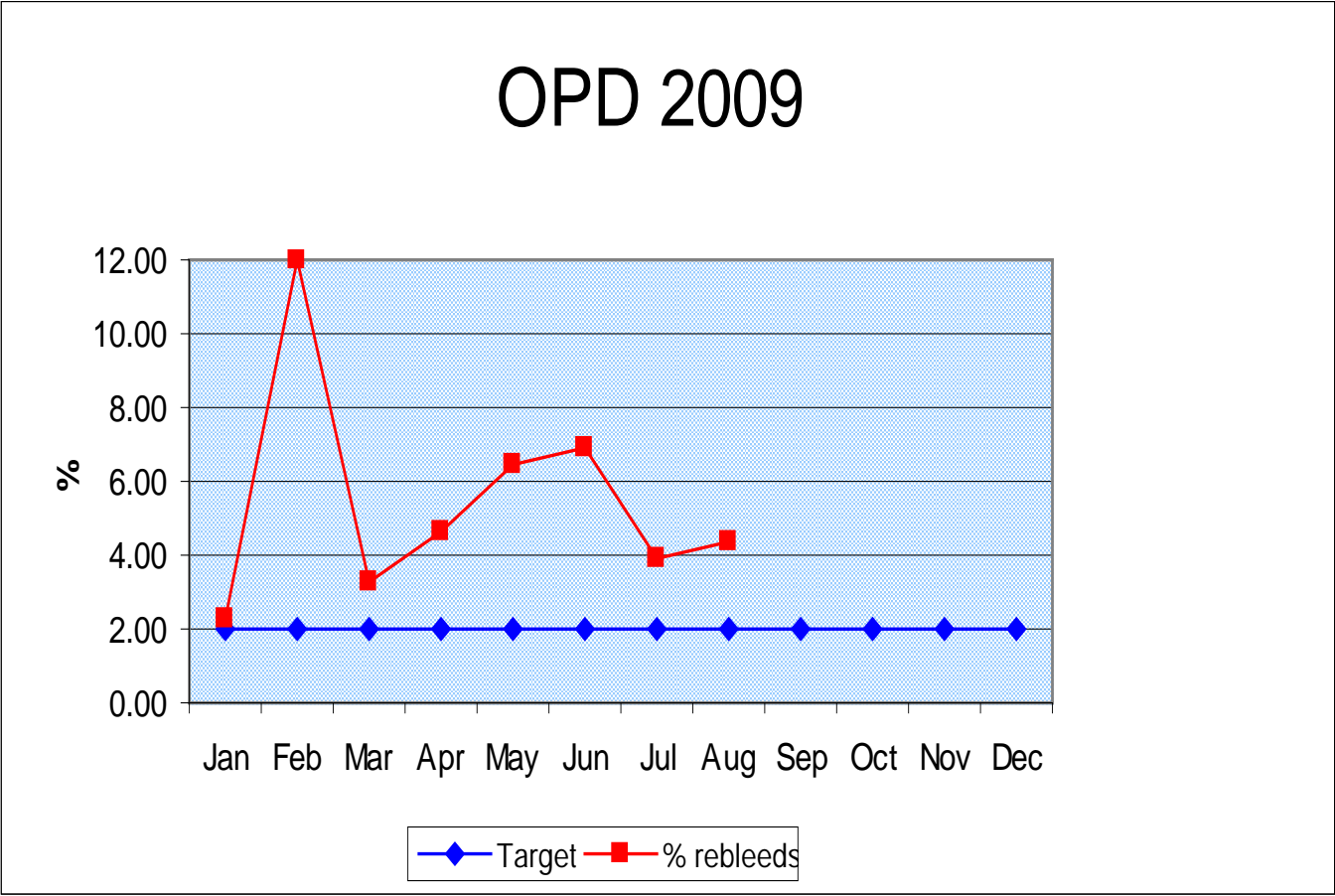


Form Specimen Haemolysed

The Hospital Transfusion Committee monitors rebleeds due to pre-transfusion blood sample errors



OPD rebleeds due to pre-transfusion blood sample errors



Failure Mode and Effect Analysis

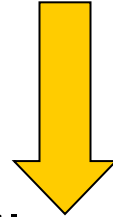
What is it and Why use it ?

“A systematic, proactive method for evaluating a process to identify where and how it might fail and to assess the relative impact of different failures, in order to identify the parts of the process that are most in need of change.”²

² Institute for Healthcare Improvement, 2004

FMEA Process

Phase 1 Understand and Describe the Process



Phase 2 Conduct Failure Mode and Risk Analysis



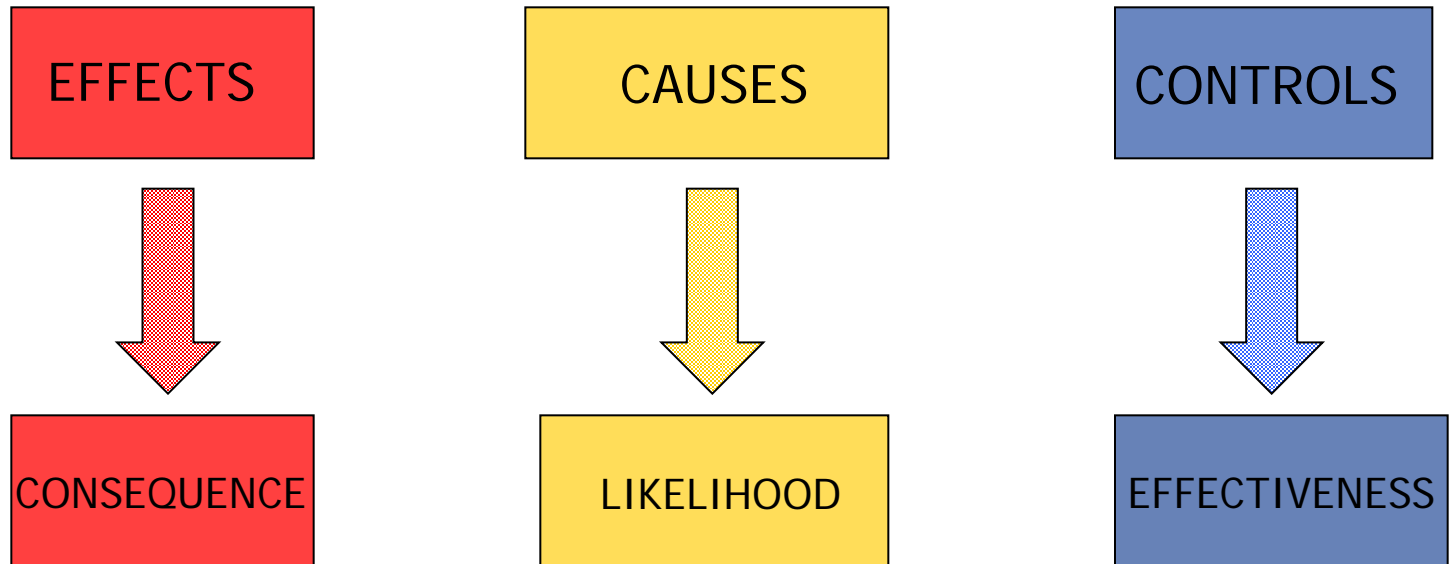
Phase 3 Redesign Process and Corrective actions



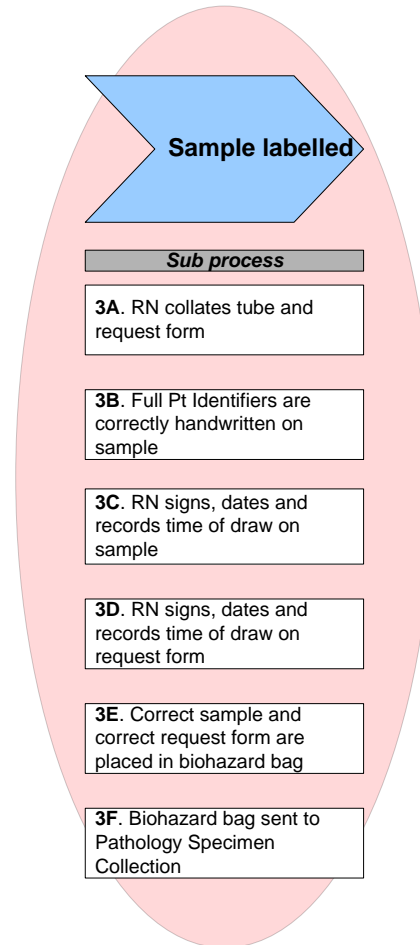
Phase 4 Implementation and Monitoring

FMEA Tool

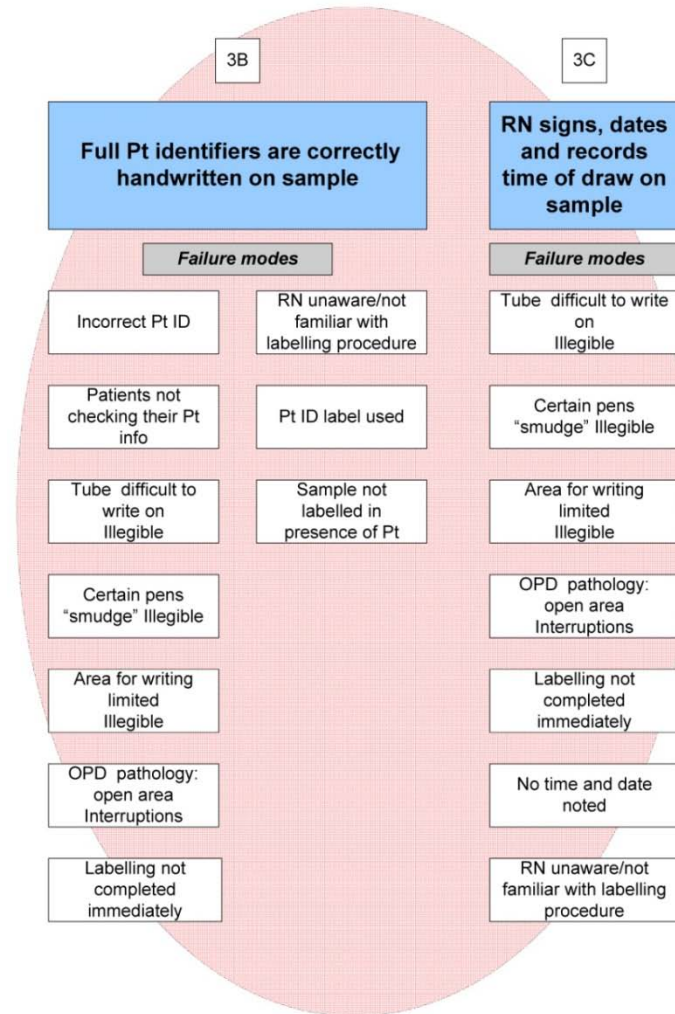
$$\text{RPN} = \text{SEVERITY} \times \text{OCCURRENCE} \times \text{DETECTION}$$



FMEA on the labelling of a pre-transfusion blood sample



Failure Modes



Failure Mode Risk Priority Numbers

Failure Mode: *Specimen tubes are difficult to write on*

Severity **10** X Occurrence **9** X Detection **2** = RPN **180**

Failure Mode: *Human errors in positive patient identification*

Severity **10** X Occurrence **6** X Detection **5** = RPN **300**

Failure Mode: *Physical environment – privacy issues*

– workflow issues

Severity **10** X Occurrence **9** X Detection **7** = RPN **630**

Failure mode: Specimen tubes are difficult to write on

- Why?

Corrective action

- New tube

Specimen Tube

SARSTEDT
Monovette®

7.5 ml

EDTA KE FOR BLOOD TRANSFUSION

01/26

SURNAME

GIVEN NAME

U R NO.

D.O.B.

WARD

COLLECTOR NAME

SIGNED

TIME

DATE

Exp 2008-09

7235001

LOT

Mix well

EDTA KE FOR BLOOD TRANSFUSION	
SURNAME	
GIVEN NAME	
U R NO.	
D.O.B.	WARD
COLLECTOR NAME	SIGNED
TIME	DATE

Failure mode: **Human errors in positive patient identification**

Corrective action

- New patient information brochures
- Education
- Policies

Outpatient Pathology Department (OPD)

Clinical Trials Research Nurse

Nurse delayed

Nurse trying to concentrate

Clerk with a query

HIGH RISK!

Constant interruptions
No privacy for patients
Cluttered, cramped space
Very sociable!
But....Chaotic

In 1 hour : 32 blood samples collected
12 had 0 interruptions
9 had 1 interruption
6 had 2 interruptions
5 had >2 interruptions

Chair 1 – 16 venepunctures 23 interruptions
Chair 2 – 11 venepunctures 11 interruptions
Chair 3 – 4 CVAD accesses 2 interruptions
Pneumatic tube accessed 4x by non OPD staff.
100% of accesses resulted in interruptions to OPD staff.

High risk settings for error

Why?

- Environment
- Distraction/Interruption
- Repetitive tasks
- Complacency
- High familiarity with patients
- > Patient volume
- Value

Failure mode: **Physical environment**

- **privacy issues**
- **workflow issues**

Corrective action

- Redesign
- New Procedure
- Signage

Redesigning Care Team - LEAN



Corrective Action Risk Priority Numbers

Failure Mode: *Specimen tubes are difficult to write on*

Severity **10** X Occurrence **2** X Detection **2** = RPN **40**

Failure Mode: *Human errors in positive patient identification*

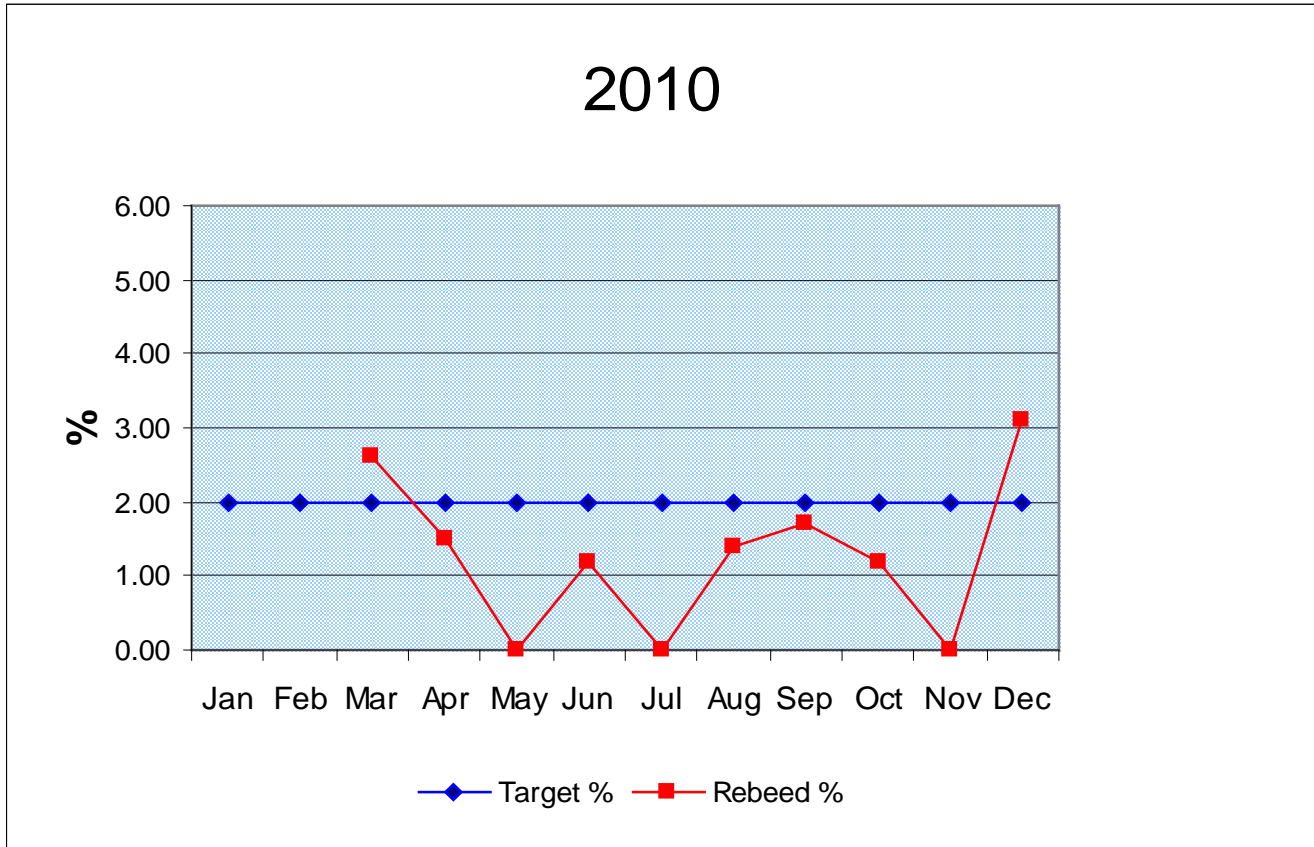
Severity **10** X Occurrence **3** X Detection **5** = RPN **50**

Failure Mode: *Physical environment – privacy issues*

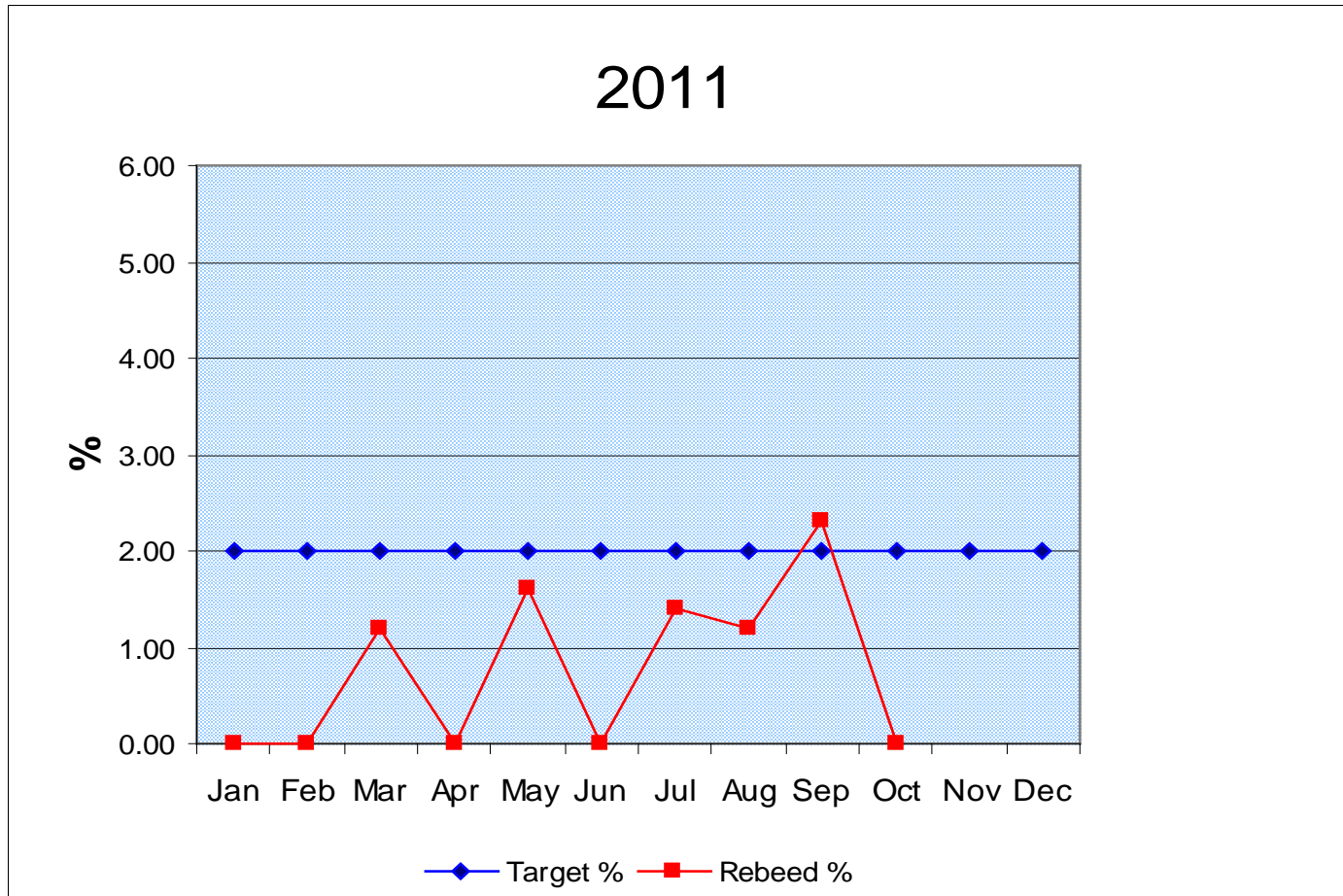
– workflow issues

Severity **10** X Occurrence **3** X Detection **3** = RPN **90**

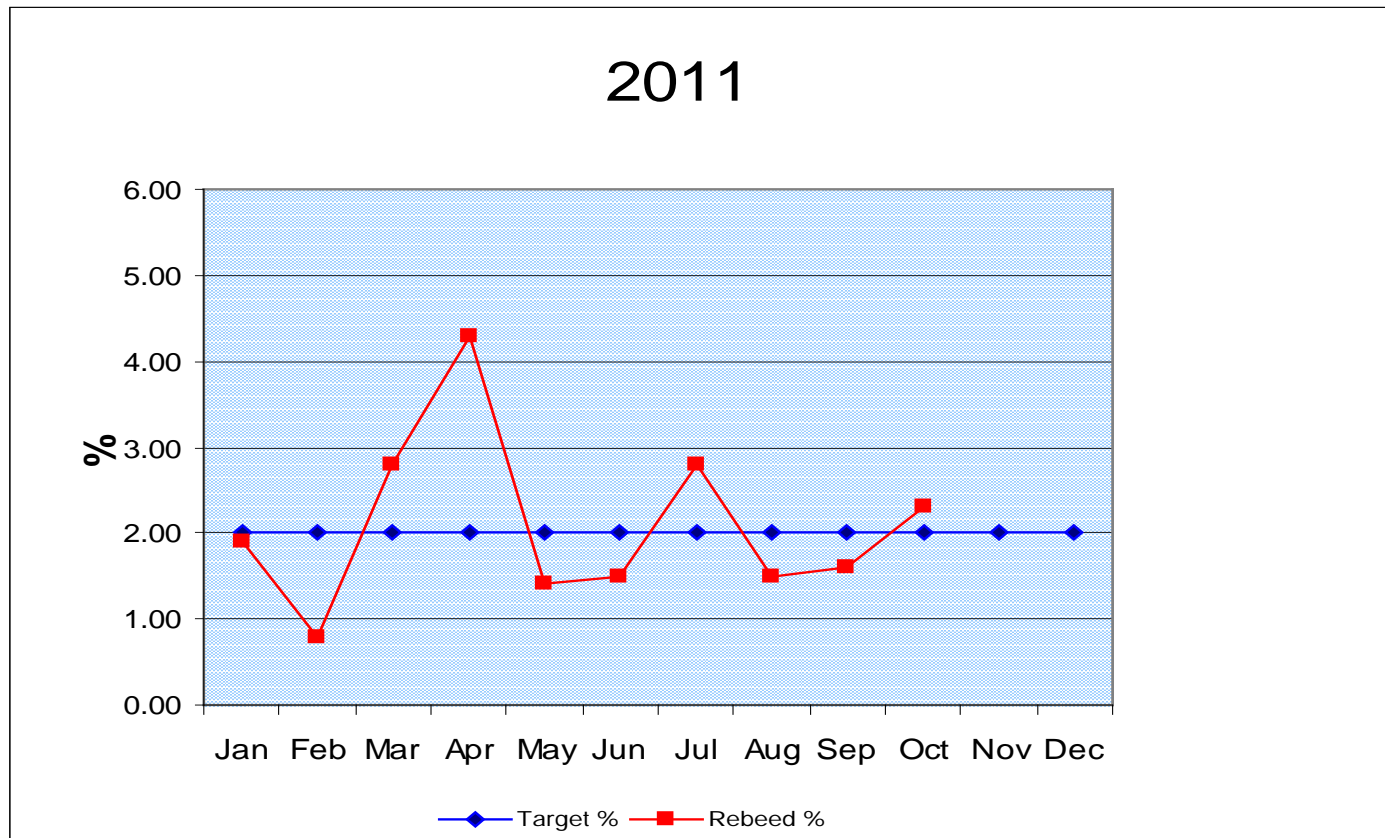
OPD rebleeds due to pre-transfusion blood sample errors



OPD rebleeds due to pre-transfusion blood sample errors



The Hospital Transfusion Committee monitors rebleeds due to pre-transfusion blood sample errors



What have we learnt?

- Moved away from blaming frontline staff
- Work forwards not backwards
- Understand the process
- Stakeholder engagement
- Culture: Changes won't stick until they become "the way we do things here"
- Staff see the connection between the corrective actions and the ↓ in errors
- Communication
- Acknowledgement

Acknowledgement

Liz Cox

Acting Manager

Clinical Risk Management

VMIA

THANKYOU



Australia's Leading Cancer Centre