



BLOOD WATCH
every drop counts



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COMMISSION

Blood Watch

Heading towards excellence in transfusion.

Professor Clifford Hughes, CEO
Clinical Excellence Commission
Transfusion Update 08

Overview



- Our problem
- Our approach
- Our progress to date

Aim: To achieve excellence in transfusion medicine in NSW



The Chronology



MACHCQ	1999
EHA Studies	2001 – 2003
NHMRC Guidelines	2001
BTIC Final Report	2002 – 2003
FPAC – Way Forward	2003
TMIP – Blood Watch	2006



Fresh Products Advisory Committee-NSW Health 2004



Priority areas:

- Appropriateness
- Reporting of Adverse Events
- Clinical Governance
- Education
- Communication
- Cost



A new approach



- Stakeholder consultation to develop work plan
- CEC funded 9 project officers 12 months
- Clinical leads in each Area Health Service
- Establishment of effective Area Transfusion Committees



What we didn't know and how we found out



- A review of blood/ blood product incidents reported in IIMS July05-June06
 - 680 entries
 - 36% mislabelled specimen
 - 20% immune complication of transfusion
 - Only 144/ 680 mapped to EHN definitions



What we didn't know and how we found out



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- Red Cell audit in March 2007
 - 323 tx episodes. 12.7% pts anaemic & had surgery with Hb's under 105g/L
 - 4% received tx with Hb's over 100g/L
 - 95% had post-op tx with Hb's over 70g/L
 - Standard dose 2 units



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What we didn't know and how we found out



- Red Cell Utilisation Database
 - Linked Health Information Exchange, pathology & blood bank data
 - Comparison of red cell usage and dosage by DRG and by hospital
 - Comparative data highlights great variation in practice
 - Six out of 9 metro hospitals prescribing up to 42% above state average



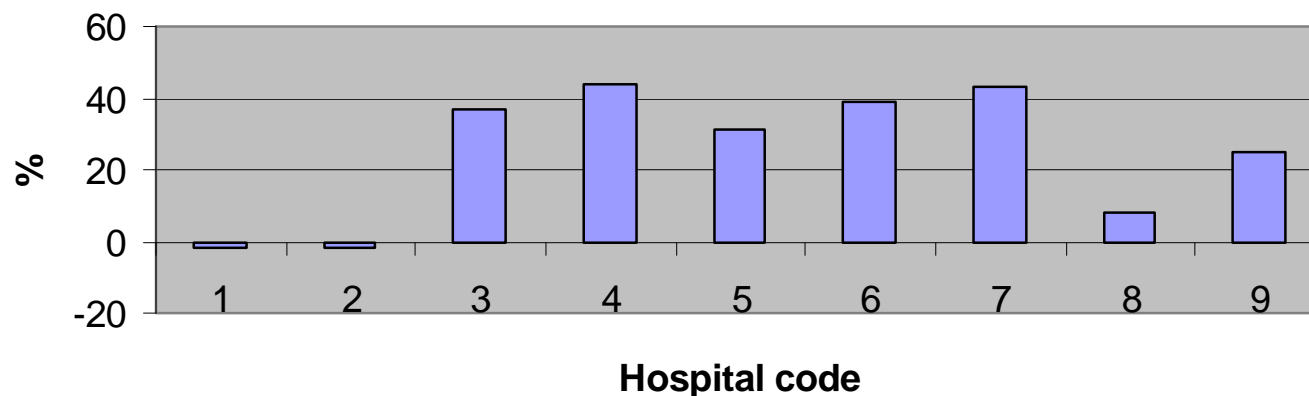
Relative Use Database- Metropolitan Hospitals



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Proportion of red cell transfusions occurring in metropolitan teaching hospitals which are either above or below the state average (2005-2006)

(calculated as casemix adjusted relative use index: source data CEC red cell data linkage project NSW)



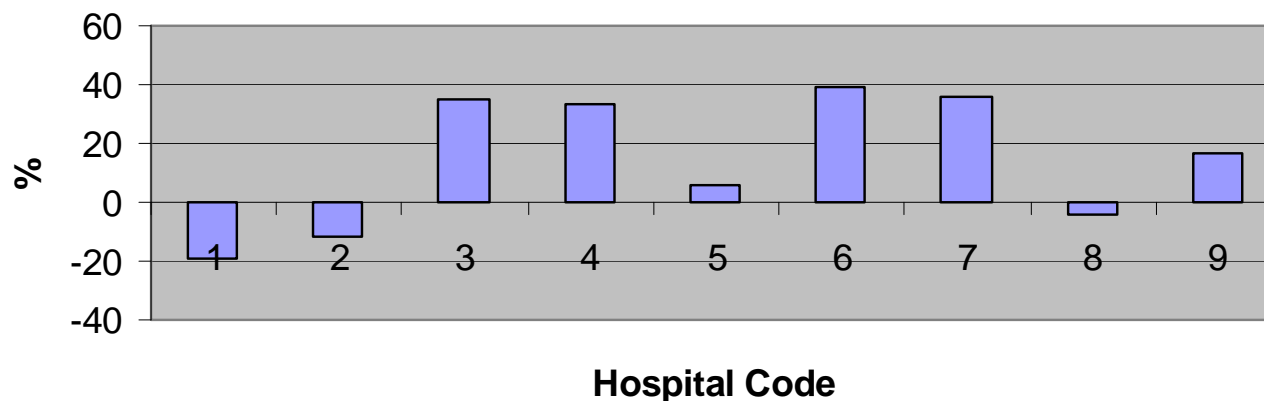
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Relative Use Database – Metropolitan Hospitals



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Proportion of red cell units (dose) transfused in Metropolitan Teaching Hospitals which are either above or below the state average (2005 - 2006)
(calculated as casemix adjusted relative use index: source data CEC red cell data linkage project NSW)



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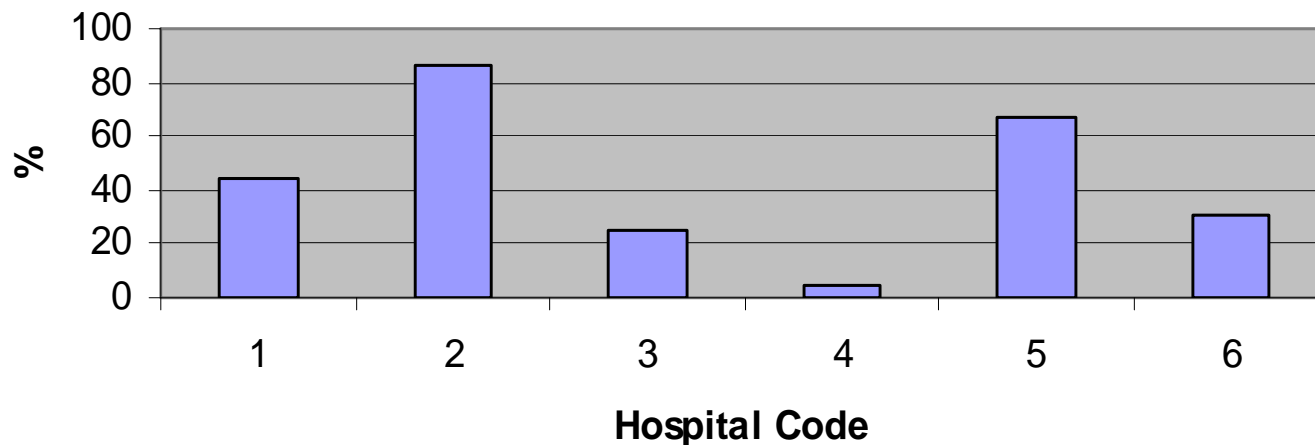
Relative Use Database- Major Rural Hospitals



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Proportion of red cell transfusions occurring in rural base hospitals which are above the NSW State average (2005-2006)

(calculated as casemix adjusted relative use index: source data CEC red cell data linkage project)



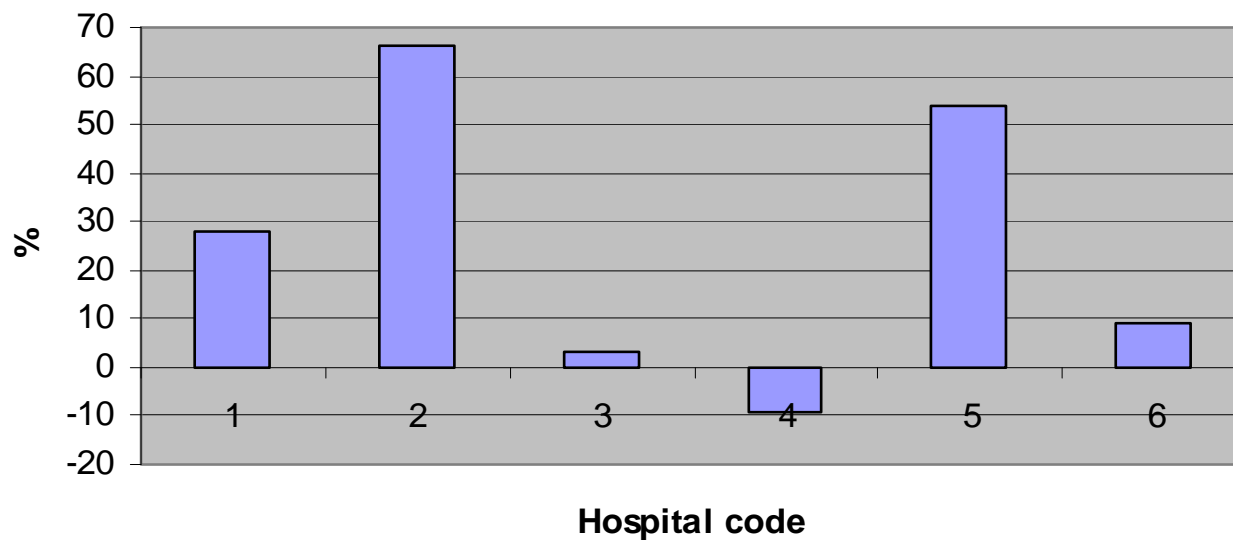
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Relative Use Database- Major Rural Hospitals



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Proportion of red cell units (dose) transfused in rural base hospitals which are either above or below the NSW State average (2005-2006)
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What we didn't know and how we found out



- Market Research into prescribing behaviours of clinicians
 - Co-sponsored by National Blood Authority
 - In-depth interviews with 21 senior surgeons and physicians, rural & metro
 - *“Senior doctors had a high personal confidence in prescribing habits, with a general assumption that they represent best practice. This is often incorrect, yet there is a reluctance to recognise this even when presented with the guidelines”*



What we didn't know and how we found out



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- Hb levels key indicator used when prescribing
- All doctors stated they prescribe a minimum of two units, felt one unit make little difference to patients.
 - a result of habit, or following standard, well-established practice. Few doctors were able to offer evidence-based support for this aspect of blood prescription.
- Development of communications strategy



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Our progress to date



- 2nd year of implementation
- Local gains:
 - Intro restrictive Threshold Guidelines in 2 Health services
 - Standardisation of Area policy – majority of AHS
 - Standardisation of blood order forms in many AHS
 - Savings: abolish filters; platelet wastage reduced
 - Widespread Nursing and JMO education
 - Mandatory accreditation in 3 AHS



Our progress to date



State-wide progress:

- Evidence of reduction in issue of all fresh products reported by NSW ARCBS
 - Red Cell Supply at 5% below previous year
 - Platelet supply continues at 5% below previous year
 - Clinical FFP supply is 8% below previous year
- Be aware of unintended consequences on supply



Our progress to date



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Blood,
it's safer than it's ever been...

MYTH

Bacterial contamination, including acute lung injury (TRALI) are immediately dangerous complications.

SERIOUS RISKS

Non Infectious Risk	Estimated Annual Incidence
Nonfatal reactions	1:10,000 to 38,000
Delayed	1:4,000 to 12,000
Bacterial sepsis	1:100,000
Anaphylaxis	1:10,000 to 38,000
Retained/ cardiac failure	Up to 1% of patients on TRALI
TRALI	1:5,000 to 300,000

Patients are often still concerned about the risk of HIV from blood transfusions. However recent studies show us that the risk of contracting hepatitis is rare occurrences in Australia.

VIRAL RISKS

Current estimated viral risks for Australian blood	Estimated Annual Incidence
HIV	1 in 600,000
HBV	Less than 1 in 10,000,000
HCV	Less than 1 in 10,000,000
HTLV	Less than 1 in 10,000,000
CMV	Less than 1 in 10,000,000
EBV	Less than 1 in 10,000,000
JCVD	Present, not reported in Australia. One of the most common viruses in the world.

A recent review of incidents reported in IMS, a blood products shows that one of the most common errors in blood transfusion is labelling. The risk of collection and labelling as well as the address.

For more information about a www.cec.health.nsw.gov.au



A blood transfusion will get my patient home sooner...

MYTH BUSTED

There is emerging evidence after surgery stay longer in infections following discharge.

The CRF study shows that RBC transfusion with longer ICU and hospital length of stay were more complications in the patient of transfused was an independent predictor.

Meta-analysis suggests that the number of RBC units transfused is related to the length of stay. For a transfusion amount of 1-2, corresponding increase in median length of stay is 10.1 days, respectively, and an increase in median hospital length of stay of 1.5 days for every 1000 units of RBC units transfused.

In addition, a 2006 study of blood transfusion shows a dose-dependent relationship between transfusion and an increase in the length of stay. A consistently negative, risk-adjusted cardiac surgery that extends well beyond.

A blood transfusion is a living tissue. With any transplant the human body is likely to react. The safety implications of this are significant. Remember - consider all the factors, not just the blood.

For details on these study guidelines on blood transfusion www.cec.health.nsw.gov



Blood transfusions improve healing...

MYTH BUSTED

Current, emerging evidence shows that patients who receive blood transfusions are at greater risk of transfusion associated adverse outcomes including infection, kidney failure, lung injury or death.

A recent study on red cell transfusions and nosocomial infections in patients concluded that infection rate was higher in those patients who received transfusions. Mortality and length of stay (intensive care and hospital) were significantly higher in transfused patients, even for those severely ill.

Transfused patients, even after adjusting for survival probability had significantly:

- Higher nosocomial infection (NI) rates (14.3% vs 5.9%; P < .001)
- Longer ICU LOS (8.2 vs 3.3 days; P < .0001)
- Longer hospital LOS (18.3 vs 9.9 days; P < .0001)
- Higher mortality rates (21.8% vs 10.2%; P < .0001)

A blood transfusion is a living tissue transplant. With any transplant the human body is likely to react. The safety implications of this are significant. Remember - consider all the factors, not just the blood.

GO

Hb < 70g/L
Lowest transfusion threshold with no clinical symptoms and/or laboratory evidence of iron deficiency.

CAUTION

Hb 70-100g/L
Only to be given to patients with clinical symptoms and/or laboratory evidence of iron deficiency.

For more information about appropriate transfusion www.cec.health.nsw.gov.au and www.tr.com.au



Autologous blood, (pre-donated) is risk free...

MYTH BUSTED

Pre-donated autologous transfusion is not risk free and there are a variety of adverse events associated with this practice.

Use of autologous blood still carries equal, if not greater, risk of bacterial contamination. There are three reasons for this:

- Autologous donor criteria are generally more flexible than allogeneic donor acceptance;
- It is possible that autologous donor screening, at the point of donation is less precise and rigorous;
- The typically longer storage interval of autologous RBC units maximises the opportunity for bacterial proliferation.

Complications of Autologous transfusion

- Blood wastage
- Errors and accidents
- Donor reactions
- iatrogenic anaemia
- Bacteremia
- Volume overload

Autologous donations may cost the patient \$200 or more, per unit collected.

For more information about the risk of autologous transfusion go to: www.cec.health.nsw.gov.au and www.transfusion.com.au



- Debunking the Myths
- Presenting emerging evidence
- Intended for clinicians



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What Next...?



- Develop & implement communications strategy – clinical engagement
- New patient information brochure – improving consent process
- Implementation of restrictive thresholds and risk controls around blood prescription
- Standardised blood prescription & support tools
- Spread interventions to platelets and FFP

