P01
Refrigeration of Platelets for Prolonged Storage: Effect on Quality Parameters

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Pooled buffy coat platelets are currently stored at 22ºC ± 2ºC but due to the risk of bacterial contamination the storage limit is five days. Refrigeration of platelets is an option to reduce the risk of bacterial contamination possibly enabling extension of storage.
Buffy coat platelets stored at 22ºC and 4ºC were assessed on days one, six and eight, for morphology, activation and metabolic function. A two-tailed student's t-Test was used to determine significance (p=0.05).
Platelet morphology was shown to be affected by cold storage. Platelets at 4ºC had a higher count and MPV. Basal CD62p expression was greater in 22ºC platelets, basal levels of CD40L expression did not change significantly. CD40L expression did not correlate with CD62p expression despite both being activation induced. No significant differences were observed in the level of CD62p expression induced by ADP until day eight, when platelets stored at 4ºC expressed significantly higher levels. A peak in CD40L levels was observed at day six, returning to lower levels by day eight. Soluble levels of CD62p and CD40L were found to be significantly higher in 22ºC platelets than those at 4ºC.
Functional ability of platelets to regain shape was measured by extent of shape change (ESC) and hypotonic shock response (HSR) assays. In both tests, the ability of cold stored platelets to regain shape after stimuli was significantly impaired. When platelets were resuspended in plasma prior to retesting, platelets resumed some function over time. The influence of cold storage on metabolic activity, measured by TxB_2, was not significant.
The most effective indicator of the effect of cold storage on platelet quality were the HSR and ESC assays, demonstrating the greatest significant difference between storage temperatures. Release of soluble CD62p is a promising indicator of platelet quality, however cold storage inhibited release of this molecule.

P02
Reducing the Risk of Bacterial Contamination in Blood Components from the New Zealand Perspective

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Background: Many publications, in recent years, have concentrated on the risk of bacterial contamination in blood components. In many cases, the focus has been on platelet components in particular. Techniques to reduce or detect the occurrence of bacterial contamination in blood components have now been introduced by several international blood services.
Aims: To evaluate the benefits of the introduction of procedures to reduce the risk of bacterial contamination in blood components from the New Zealand perspective.
Methods: Universal leucodepletion was implemented in New Zealand in 2001. Since then, several other methods have been progressively introduced. A 2-stage arm cleansing technique was adopted in 2002. The protocol involved the use of povidone iodine, followed by alcohol. A subsequent validation is currently in progress comparing 3 different types of disinfectant. September 2003 saw the implementation of diversion of initial blood flow. In April 2004, a pilot study for monitoring bacterial contamination using microbial detection systems was initiated.
Results: Over 4,500 platelet doses have been monitored using the BacT/Alert system while close to 1000 have been examined using the Pall eBDS system. Platelet doses were sampled on Day 2 and a sampling rate of approximately 45% of total platelet doses prepared has been achieved during the pilot study. To date, 4 positive results have been detected. 3 were concluded to be false positives.
Conclusions: The New Zealand Blood Service experience has demonstrated a contamination rate similar to other published data. Decisions now need to be made regarding maintaining a monitoring programme, or progressing to a policy of culture negative at release of platelet components.

P03
Mode of Platelet Agitation Affects Quality of Platelets Over an Extended Storage Time

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The VibraQ planetary motion agitator offers multiple patterns and variable rates for the agitation of platelets. The purpose of this study was to determine whether the mode of agitation of platelets influenced the quality of the platelets over an extended storage time.
Pooled buffy coat platelets resuspended in T-sol were used for this study. Platelets were tested at Day 1 and after storage under constant agitation up to Day 8. Platelet parameters tested included: product volume, platelet concentration, pH, CD62p expression, shape change induced by ADP and the hypotonic shock response. The acceptability target was set at 66% of the response obtained with fresh platelets.
Three VQ patterns delivered good comparative composite scores for platelet function. Improved activation state was observed at high agitation rates but this did not necessarily translate into improved functional responses. A single mode of agitation was selected for direct comparison with current technology. No difference was observed in platelet count at Day 6 when comparing Helmer to VibraQ agitated platelets. But at Day 8, significantly more platelets were present in VibraQ agitated platelets, which suggests an improved survival to Day 8. pH was marginally higher in VibraQ agitated platelets but did not exceed the acceptance limits and was not significantly different to platelets agitated on the Helmer agitator. Marginally better activation status was seen in VibraQ platelets at day 6 compared to Helmer platelets. VibraQ platelets performed significantly better than Helmer platelets at Day 6 for shape change responses. The mean composite score for Helmer platelets was 1.06 at day 6, significantly lower than the mean composite score of 1.21 at Day 6 for VibraQ platelets. No significant difference was observed between day 8 results.
The data suggest that a number of different modes of agitation may deliver some benefit to platelet quality.

P04
Validation of Gambro BCT Trima Accel Plasma Reduced Leuco-Depleted Platelets and Plasma Utilising Baxter T-Sol Platelet Additive Solution

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The aim of this project was to develop and validate a protocol for the preparation of apheresis platelets in T-Sol using Gambro technology (Gambro Trima Version 5 software) and to evaluate the platelets and plasma against ARCBS Blood Component Quality Control (QC) specifications, Council of Europe guidelines (11th edition), Gambro Trima specifications and the European Union Directives (EUD).
Platelets were assessed for platelet and white cell count at day 1, while pH, platelet activation and platelet shape change responses were assessed at both day 1 and day 6. Platelet microbial contamination was evaluated at day 6 only. Plasma was assessed for white cell, red cell and platelet contamination, total protein, Factor VIII, plasma haemoglobin and lipaemia.
Phase 1 evaluated ten concurrent platelet/ plasma collections comprising 3 double collections and 7 single collections with a yield scaling Factor of 1.0. Since both platelet and plasma results met the acceptance criteria, Phase 2 commenced and another 40 concurrent platelet/plasma collections were assessed to further evaluate both the process and the products.
Results obtained for the plateletpheresis units were all within the current ARCBS Blood Component QC Specifications for Single Donor Platelets, Apheresis. All platelet units demonstrated the swirling phenomenon, had nil clumping and were negative for microbial contamination. These platelets met the Gambro Trima specifications, Council of Europe specifications (11^{th} edn) and the EUD.
Results obtained for the plasmapheresis units were all within the current ARCBS Blood Component QC Specifications for Plasma (for fractionation) and Clinical Plasma Components. All plasmapheresis units had acceptable levels for plasma haemoglobin and lipaemia. These plasma units also met the Gambro Trima specifications, Council of Europe specifications (11^{th} edn) and the EUD.
Plasmapheresis and leucodepleted plateletpheresis units resuspended in T-Sol produced using the Gambro Trima version 5 software meet existing product specifications for these products.

P05
Four Unit Leucodepleted Buffy Coat Platelet Pools in T-Sol Utilising Terumo Teruflex BP Kit with Imugard III-S Pl filter

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Aim: Develop a protocol for the manufacture of Leucocyte Depleted Platelet Pools from 4 buffy coats with the use of Teruflex BP-Kit with Imugard III-S PL, S-PL filter holder and a Terumo-Automated Component Extractor (T-ACE).
Methods: Whole blood intended for platelet production was stored at 20ºC to 24ºC for a minimum of 18 hours. The whole blood was centrifuged in Beckman J6MI. Four buffy coats were pooled in T-Sol utilising a Teruflex BP-Kit with Imugard III-PL. The leucocyte depleted platelet pools were extracted on a Terumo Automated Component Extractor (T-ACE) with the aid of an S-PL filter holder.

Results: The resultant Leucocyte-depleted platelet pools in T-Sol met ARCBS Blood Component Quality Control Specifications version 2. These results were also compared against the Council of Europe 11th Edition and the European Union Directives March 2004.
Conclusions: ARCBS-Discovery previously provided Platelets Pooled in T-Sol derived from 4 buffy coats with an extraction process which is totally automated. The previous method of manufacture did not involve the removal of any contaminating leucocytes. The new component has been introduced to meet Hospital demand of a 100% leucocyte depleted platelet supply. Leucocyte-depleted components have been shown to maximize the safety, quality and clinical efficacy of the blood supply.

P06
Rh D Immunoglobulin Prophylaxis in Rh D Negative Haematology Patients. Is Prophylaxis Really Required?

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Background: Antibodies to Rhesus (Rh) D have been reported in up to 19% immunocompromised Rh D negative patients receiving Rh positive platelet transfusions. Modern production methods result in platelet products with extremely low levels of red cell (RC) contamination and more recent alloimmunization rates are significantly lower. Routine use of Rh D immunoglobulin (RhD Ig) in immunocompromised Rh D negative females with child-bearing potential who receive Rh incompatible platelet transfusions remains controversial.
Aim: To assess whether RhD Ig is justified in haematology patients receiving Rh D mismatched platelets.
Method: Retrospectively, laboratory data bases across two teaching hospitals were analysed for the period 1998-2004. All patients had malignant haematological disorders or were undergoing bone marrow/stem cell transplant. Patients were eligible if they were Rh D negative and had received Rh positive platelets on at least one occasion. Patients were excluded if Rh mismatched RCs or RhD Ig was administered. Follow up was a minimum of 7 days.
Result: A total of 120 patients were identified; 28 were excluded due to incomplete follow up, 2 as they were given RhD Ig post-platelets, 3 had anti-D demonstrable pre-exposure to Rh positive platelets, leaving 87 patients evaluable. Median age was 56 years (range 18-79). Median number of Rh D positive units administered was 6.5 (range 1-140). Products included whole blood-derived platelets (as individual units or pools), single donor ABO- and HLA-matched apheresis platelets with different collection methodologies, leading to variable RC contamination, residual white cell count and plasma content. Median follow up from initial exposure to Rh mismatched platelets was 86 days (range 7-1022). Three patients had documented anti-D antibodies following Rh D positive platelet administration.
Conclusion: Our retrospective study suggests that routine prophylactic administration of RhD Ig in women of child bearing potential with a malignant haematological condition requiring Rh mismatched platelet transfusion should continue until prospective studies can delineate more conclusive evidence to alter practice.

P07
Prophylactic Anti-Rh (D) Immunoglobulin – Impact on the Laboratory

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Aim 1: Review the impact on the laboratory, and measure clinical compliance levels for the administration of purely "Prophylactic" Anti-Rh (D) Immunoglobulin at 28 and 34 weeks gestation.
Method: Administration of "prophylactic" anti-Rh (D) immunoglobulin at 28 and 34-week gestation is expected to reduce the incidence of HDN to 0.1%. Introducing the recommendations required an initial education phase; review and preparation of hospital policies; review and preparation of laboratory policies; change relevant test methods; obtain and maintain immunoglobulin stocks; review policy on interpretation and reporting positive antibody test results in context of recent passive administration.
Results: Data extractions from the Laboratory Information System (LIS) are expected to measure compliance by identifying the number of eligible patients that were administered anti-Rh (D) immunoglobulin at 28 and 34 weeks; identify the number of additional positive antenatal antibody screens and the number of additional panels performed, calculate increased laboratory costs of providing purely "Prophylactic" anti-Rh (D) immunoglobulin.
Conclusion: Compliance rates are not expected to be optimal. Administration of purely "Prophylactic" Anti-Rh (D) Immunoglobulin has had a significant impact on laboratory workload, costs and required the development of revised protocols and procedures for investigation and reporting.

P08
Case Study: Anti-D Formation in a Partial D (DAU-4)

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Aim: An antenatal patient of Ethiopian origin was initially phenotyped as RhD positive. She had several failed pregnancies and was transfused urgently with RhD positive blood. Further investigation on subsequent samples showed an unusual RhD phenotype pattern, and formation of an anti-D antibody. In conjunction with Australian Red Cross Blood Service, Victoria (ARCBS) and International Blood Group Reference Laboratory (IBGRL), Bristol, the aim was to determine her partial D category.
Method: RhD phenotype was done using several anti-D reagents by tube method and Diamed gel technology. A panel of monoclonal anti-D was used to determine the RhD category. Testing by IBGRL included serology, and molecular studies involving the sequencing of Exons 5 and 8 of the *RHD* gene using genomic DNA.
Results: The patient's cells were negative with IgM Monoclonal Epiclone®-2 Anti-D (CSL), but positive with other IgM, IgM/IgG and polyclonal anti-D reagents. The reaction pattern against the panel of monoclonal anti-D did not correlate with the RhD categories: DII, DIII, DIV^a, DIV^b, DV, DVI, DVII, DFR, DBT, R_O^{Har}. As the patient was cDe and of African origin, IBGRL suggested an association with the *DAU* allele cluster of the *RHD* gene, possibly DAU-4. This was subsequently confirmed by IBGRL. Molecular studies showed Exon 5 was homozygous for mutation 697G>A. There were no mutations in Exon 8. The partial D was classified DHK (also known as DYO or DAU-4).
Conclusion: This is a case of a partial D phenotype that routinely tested as RhD positive and subsequently formed anti-D. In areas of ethnic diversity such as Melbourne, this case highlights limitations of the current choices of anti-D reagents tailored to avoid anti-D formation in partial D DHK or those of the DAU gene cluster.

P09
Screening for Feto-Maternal Haemorrhage Using Acid Elution Techniques

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Aim: This laboratory uses a modified Kleihauer method for the detection of foetal -maternal haemorrhage (FMH). This method has a reputation of overestimating FMH. The purpose of this small, in-house study was to compare the results obtained with two acid elution methods with flow cytometry.
Method: In a blind study, 10 staff examined 2 sets of prepared slides with theoretical concentrations of 0% (slide A, N=19), 0.25% (slide B, N=23) and 0.50% (slide C, N=21) of Rh (D) positive foetal cells in Rh (D) negative adult cells. One set was stained with an acid citrate elution method (method 1) and the other with an acid $FeCl_3$ method (method 2).
Results: Slide A, no foetal cells were detected with either staining methods (flow cytometry – 0.06%)
Slide B, method 1 (mean - 0.240%), method 2 (mean - 0.365%), flow cytometry (0.16%).
Slide C, method 1 (mean - 0.420%), method 2 (mean - 0.475%), flow cytometry (0.26%)
No false positive results were obtained with only one false negative result (slide B, method 1).
Conclusions: Both staining methods overestimated counts when compared to flow cytometry results. These results support the use of a carefully performed Kleihauer as a screening test for FMH but suggest flow cytometry may be preferable when foetal cell enumeration is critical.

P10
Foetomaternal Alloimmune Thrombocytopaenia Presenting as Severe Neonatal Hyperbilirubinaemia: A Case Report

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Case Report: A 2 day old male term infant was retrieved from a regional hospital for ongoing management of bilirubin encephalopathy, the aetiology of which was unknown. The infant had been born in good condition following an uncomplicated pregnancy. Extensive bruising was noted on the first day of life, thought to be secondary to precipitous delivery. At 28 hours of age the infant was found to be deeply jaundiced with a serum bilirubin of 650µmol/L, rising to 760µmol/L (conjugated fraction 20µmol/L) at 42 hours of age. Full blood count revealed severe thrombocytopaenia (15x10E9), but other parameters were within normal limits. Screening for haemolysis and sepsis yielded normal results. Imaging studies demonstrated a small subdural haematoma, but no evidence of a haemangioma. Platelet count increment following transfusion was only transient, suggestive of peripheral platelet destruction. Count recovery occurred spontaneously by 8 days of age. Platelet typing performed on parental blood demonstrated platelet alloantibody in maternal serum with anti-HPA5b specificity, a recognised cause of FMAIT.

Conclusions: Severe thrombocytopaenia at birth due to FMAIT may have resulted in the extensive bruising observed in this infant, with subsequent hyperbilirubinaemia secondary to red cell lysis.

P11
Parallel Testing for Maternal Alloantibodies by Column Agglutination Techniques

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Aim: A comparison of maternal alloantibody titres performed at the time of initial antibody identification, and subsequently re-titred after plasma/serum had been frozen and thawed for a period of up to 12 months. The aim is to demonstrate that re-titring shows no significant difference to the initial antibody titre.
Method: Diamed 0.8% screening cells, Diamed Liss/Coombs card and Rainin EDP-2 pipettes were used. 310 plasma/serum samples were tested. Titres were graded from 1:1 to 1:1024. 15 different antibodies were tested including many multiple antibody combinations. After initial antibody identification and titre all specimens are frozen at –25C, thawed and re-titred for the purpose of parallel testing.
Result: 98%of the tested specimens varied by no more than one titre with the historical levels.
Conclusion: Alloantibody titres are used to monitor the quantity of alloantibody in the maternal serum during pregnancy. Increasing levels of antibody are used to indicate when a foetus is at risk of haemolytic disease of the newborn. The increase in antibody titre is confirmed by testing a previous specimen in parallel with a current specimen. A rise of two titres is taken as being a significant rise.
Demonstrating that initial titre is comparable to subsequent re-titre means the re-titre may be redundant. There may be no advantage in titring in parallel when compared to historical titres. This may indicate that parallel testing is not required when using the described techniques.

P12
Testing for Blood Group and Antibody Screening After 30 Days Storage of EDTA Specimen at 4C

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Aim: The aim of this study is to determine the viability 10ml EDTA blood specimens for blood group testing and antibody screening after 30 days of storage at 4C. The study includes testing the grossly haemolysed buffer layer at the cell/plasma interface. This study is to examine of possibility of using an alternative specimen (i.e. has not been spun, separated and frozen) for performing a 30 day crossmatch.
Method: The sample is tested for blood group and antibody screen within a day of collection. The sample is centrifuged, left unseparated and stored at 4C for at least 30 days. The sample is retested for blood group and antibody screen at least 30 days after collection.
All tests are performed by column agglutination techniques, either manually or by Diamed ID Walkaway analyser.
Specimens with known positive antibody screens are included.
Result: Most samples showed little or no loss of reactivity over the period of storage, regardless of the degree of haemolysis.
Conclusion: 10ml EDTA specimens stored at 4C for up to 30 days may be used for blood grouping and antibody screen.

P13
Improving Detection of Drug-Induced Thrombocytopenia in the Hospital Setting Through the Introduction of a Diagnostic Algorithm

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Introduction: Drug-induced thrombocytopenia (DITP) is caused by antibody specific destruction of platelets. Evidence of causation is provided by detection of drug-specific platelet reactive antibodies. Drug withdrawal results in prompt platelet recovery.
Aims: Drug-specific antibody testing (excluding heparin) was reviewed to examine the roles of antibody testing in DITP evaluation and review of DITP diagnostic processes.
Method: Drug-specific platelet antibody (DRG) investigations performed over 5 years (hospital patients and referrals) were reviewed. Laboratory results were correlated with clinical information. Published diagnostic criteria for DITP were modified to include antibody testing and these criteria were applied.

Results Sixty-six patients had DRG investigations. Overall, 33 of 67 DRG episodes (49.3%) were positive. Clinical information was available for 40 thrombocytopenic patients. Twenty of 22 patients with positive DRGs were categorised as 'definite' DITP and 5 of 18 patients with negative DRGs were classed as 'probable' or 'possible' DITP using the modified criteria. All patients with 'definite' or 'probable' DITP had clinical courses and count-recovery typical of DITP. Bleeding complications occurred in 75% of these patients. Documentation of DITP was suboptimal.
Conclusions: Diagnosing DITP is important but it can be easily overlooked. DITP may cause significant morbidity and it has implications for patient management. Despite present limitations of drug-specific platelet antibody testing, this audit demonstrated that testing can be successfully incorporated into criteria for DITP diagnosis. Positive drug-specific platelet antibody testing provides strong evidence for DITP making deliberate drug re-exposure unnecessary. This study led to a review of DITP assessment in our hospital. A flow chart for evaluation of suspected cases was developed which included a standardised worksheet for collection of information and patient review by transfusion nurses. 'Definite' or 'probable' DITP now prompts an implementation of action plan which includes direct notification of the patient and referring doctor.

P14
Severe Immune Haemolysis Following Orthotopic Liver Transplantation

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Introduction: Immune haemolysis is well recognised following ABO mismatched bone marrow transplantation; however it is less common following solid organ transplantation. Donor lymphocytes are unavoidably transplanted along with the organ itself. These transplanted passenger B-lymphocytes may continue to survive and function in the recipient, actively producing isohaemagglutinins for a substantial period of time after transplantation.
Case Report: A 62 year old male with chronic autoimmune hepatitis underwent an orthotopic liver transplant. His blood group was A1 Positive and his pre-transplant blood group antibody screen was negative. The liver donor's blood group was O Positive. Transplant was uneventful. Intra-operatively, he was transfused 4 units of A Positive red cells. By day 12 post-transplantation marked anaemia had developed. Haemoglobin had fallen to 63g/L from 118g/L post transplant and LDH increased from 250U/L to 400U/L. Spherocytes and autoagglutination were noted on the blood film. The antibody screen was negative, however the direct antiglobulin test (DAT) was positive with anti-IgG. Drug induced haemolytic anaemia and blood loss were excluded. All crossmatched A Positive red cells were incompatible at that time. Circulating anti-A was identified in the patient's plasma and in an eluate from the patient's red cells. The patient subsequently received 4 units of crossmatch compatible O Positive red cells. Three months post transplantation all signs of haemolysis had disappeared (haemoglobin 100g/L).
Discussion: Transplantation of ABO mismatched solid organs has been associated with the development of donor derived antibody by residual donor lymphocytes in the recipient. Recipients of ABO mismatched livers are at risk of development of severe but self limiting immune haemolysis due to isohaemagglutinins produced by the donor lymphocytes in the transplanted organ. This haemolysis can be confused with a delayed haemolytic transfusion reaction. Therefore it is important to recognise this unusual complication of liver transplantation and associated morbidities.

P15
A Prospective Clinical Audit Of Intravenous Immunoglobulin (IVIG) Use In New Zealand

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Background: IVIG as replacement therapy in patients with immunodeficiency is well established. The relative ease of IVIG therapy and its wide-spread off-label use help make it the most widely used plasma component in the world. There are no generally accepted guidelines for IVIG use in New Zealand. NZBS uses the Australian Health Minister's Advisory Council (AHMAC) guidelines which identify diseases rather than specific criteria. Auckland District Health Board (ADHB) developed recommendations (in final draft) that identify specific criteria within diseases.

Aim: A prospective 6 month audit of IVIG use in seven centres covering over 75% of New Zealand's use assessing whether usage conforms to ADHB and AHMAC guidelines.
Method: All patients who received IVIG from participating centres were audited once only unless the indication changed or two or more months elapsed between visits. Data collection for each episode included total course dose and clinical data.
Interim Results: 275 episodes were captured during the first two months of the audit. The median dose was 0.5g/kg. 85% of cases were in AHMAC category 1 (convincing evidence of benefit), 6% in category 2 (inconclusive evidence of benefit). 8% had no AHMAC category. 72% of patients met the ADHB guidelines with some variation between centres. Immunology, Haematology and Neurology met the ADHB guidelines in 79%, 74% and 83% of cases respectively. Antibody deficiency, CIDP, ITP and Guillain-Barre consumed 62% of all IVIG issues.
Conclusion: The majority of IVIG use appears evidence-based and also meets the ADHB guidelines. Lack of required historic data prevented some cases meeting ADHB guidelines. The majority of IVIG use is restricted to few diagnoses. This can guide strategies to monitor or contain its use. 8% of diagnoses were not mentioned in ADHB guidelines. Either more diagnoses are needed in the guidelines or individual requests will need review.

P16
Electronic Monitoring of Transfusion Quality Assurance Throughout Western Australia

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Aim: We undertook to develop an electronic system to monitor Transfusion Quality Assurance (QAP) of 80 scientists in 24 peripheral laboratories throughout Western Australia.
Methods: PathWest (formerly PathCentre) is a public pathology laboratory in Western Australia, which has 24 peripheral laboratories up to 2,500 kilometres from the central laboratory in Perth. These laboratories perform basic transfusion including blood groups, antibody screens and crossmatches.
We utilised MS Excel as a template to input data. The spreadsheet included, a request form detailing patient clinical information, photographs of blood results using gel technology, and an area for Scientists to enter their results. The MS Excel Transfusion QAP was then e-mailed to all peripheral laboratories for performance by all Scientists. When completed, the spreadsheet was then e-mailed back to the central laboratory for evaluation. By utilising existing systems we have overcome the need for IT involvement.
Once the closing date had passed, the correct results were posted in the network for all participating Scientists to view.
The Scientists' answers and correct results were stored in MS ACCESS database. From the database individualised feedback and management reports including performance progress, summary, various participatory reports are generated.
Results: We have found enormous enthusiasm and compliance for the Transfusion QAP because it is visually appealing, very simple to use and educational. This program has overcome major problems of monitoring laboratory transfusion in peripheral laboratories associated with isolation due to the size of Western Australia. It is completely maintained by the central Transfusion Medicine laboratory and not dependent on IT or input from other sources. It has been a powerful tool for monitoring individual scientist and laboratory performance and providing education on transfusion practices.
Conclusion: We have developed a simple yet powerful tool for electronically monitoring the individual performance of scientists. This has overcome the problems of distance from the central transfusion laboratory and has been critical for improving quality of service, clinical outcome and educational needs of our scientists.

P17
Blood Component Wastage: A Simple System for Data Collection

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Aim: Collection, analysis and review of blood component discard data are important in the management of the blood supply and efforts to reduce wastage. In Victoria, ARCBS historically has collected discard data from returned units. However, there are several disadvantages with this process, including transport costs and extra handling required. Additionally, this system does not provide information about location or exact reason for discard, and data about damaged products are lost as these units cannot be returned for safety reasons.
Method: In Victoria we developed and piloted a web-based system for collection of wastage data at source. Hospitals use password-protected unique logins, and enter unit number, product code and group from barcodes on blood bags for discard. Reason for discard is selected from a drop-down menu. Additional comments may be added.
Results: The system was piloted in 11 laboratories (6 metropolitan, 3 regional, 2 remote) for 5 months in 2005, resulting in records of 1979 discards. Of these, 81.4% (n=1611) were time-expired; 6.2% (122) lost due to damage [95% (117) of these were broken frozen products]. Incorrect storage at hospitals resulted in 7.2% (142) discards. At least 36 FFP and 7 cryoprecipitate were discarded after being thawed but not transfused. Participating hospitals found the system simple to learn and quick to use. Data were supplied to each reporting institution for review.
Conclusions: Blood component discards are widely regarded as due to poor inventory management. However, we have identified that problems with packaging, transport, handling and thawing all have significant effects on product losses, and should be actively monitored. A convenient, real-time, remote-access, electronic system for collection of wastage data results in less work for hospitals and ARCBS, and in more complete and meaningful information, indicating areas for further improvement.

P18
Transfusion Reaction Management Project

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Introduction: Transfusion related adverse events including fluid overload, TRALI and allergic and febrile non-haemolytic transfusion reactions are often under reported and inconsistently managed and investigated. A retrospective review of transfusion reaction investigations from 2004 showed a reporting rate of less than 0.1% of red cell units transfused.
Method: A team consisting of the BloodSafe Program Transfusion Nurse, Transfusion Scientist, Haematology registrar and senior haematology nurses was formed to review transfusion reaction management strategies within the Haematology Oncology Day Unit. The aim being that all blood product reactions within HODU would be reported, investigated and managed appropriately within a defined time frame. Consensus was reached regarding the management, reporting and investigation of all suspected transfusion reactions. Utilising Clinical Practice Improvement (CPI) methodology priorities were identified including

1. Development of a simple transfusion reaction management flow chart
2. Development of a Transfusion information leaflet for day patients with discharge information about transfusion reaction symptoms and hospital contact details.

Observation and reaction data from the HODU were reviewed within 24 hours for transfusions during the 5-month pilot period. All suspected reactions were reviewed for the appropriateness of management.
Results: 180 red cell transfusions were reviewed. Baseline transfusion reaction data showed inconsistent management and a lack of reporting in 3/3 transfusion reactions. After the Reaction Management Project was introduced to the pilot area the management, reporting and investigation was within guidelines in 100% of cases (6/6). Limiting factors were the low number of observed reactions (6/180) and staff awareness that all transfusion episodes were being monitored. Despite enthusiasm by clinicians for the reaction flow chart, only 13% (4/29) returned evaluation surveys.
Conclusions: Team consensus was that the management and reporting improvements reflected a combination of staff experience with reaction management and the availability of the flow. Within a six-month period using CPI team methodology in a small pilot area the multidisciplinary team has designed, trialled and implemented both a transfusion reaction management flow chart and patient information leaflet that is adaptable across the entire area health service.