SYD – Natasha Kearey

In terms of the next part of the program, before lunch, we are very lucky to have someone from Queensland and we are going to ratchet down another level to actually talking about experiences of implementing a patient blood management program. I am very pleased to welcome Ms Natasha Kearey. She is a transfusion clinical nurse consultant from Princess Alexandra Hospital, Queensland. Natasha's background, where is Natasha? I was looking for you in the front row thinking, I hope she appears when I say "and come on down Natasha". Natasha's background is in haematology, oncology and apheresis nursing and she has worked in a variety of roles within these specialties, both overseas and in Brisbane.

She commenced her current position at Princess Alexandra Hospital in Brisbane, as the first permanently appointed transfusion CNC in a Queensland facility in 2009. Natasha has been recognised for her contribution to the Queensland haemovigilance program, Queensland incidents in Transfusion (QiiT). In 2013, Natasha, along with effective blood use transfusion CNC project team, received an Australia Day Honours award from the Department of Health in Queensland for excellence in driving strategies which benefit patients and the greater community in the preservation of appropriate use of a precious resource. Please join me in welcoming Natasha. Thank you.

So I guess we are actually kind of New South Wales about eight years ago. So basically I'm going to talk to you about our implementation, our experience of implementing a single unit transfusion red cell guideline within Princess Alexandra Hospital but in reality it was part of a much bigger project, a state-wide project and that was a 12 month program and a little bit of a sad story as well I guess as with New South Wales, the team that created the project, the Queensland Blood Management Program, have actually moved on and they are now a different team but we do have little bit of a happy ending I suppose at the end. So it's not a full-blown blood management program, there's many elements to that. We have some of those elements but I don't know that it's been brought together as a full program, this is just one activity that we participated in.

Just to give you a background of Princess Alexandra Hospital, we're a large tertiary facility and we do have a lot of bloody specialties such as cardiac surgery, cancer care, major transplant centre for livers and kidneys. We don't have obstetrics or gynaecology, which is less complicating for me and obviously we have gone through a lot of changes in Queensland recently, we're going to local health service districts, so now we're part of Metro South Health Service district and we don't have that over-ach in Queensland Health, we're all independent bodies now.

So I guess one of the things that I learnt in my graduate certificate in transfusion practice was about change management and it's a really important role I guess, if you are going to implement any kind of change in a hospital, to have some understanding of these concepts. So I'm going to go through on two levels, the state-wide level and then what we did within our facility and the changes that happened. So first of all, creating a sense of urgency. So what happened in Queensland is that the executive team decided to devolve the budget to the

health services districts as of July 2011, so this was the budget for fresh components, similar to what happened in New South Wales. In fact, we were learning from New South Wales and South Australia in terms of their data linkage, etc. We established a guiding coalition so the effective blood working group was established and being the first transfusion nurse in Queensland, I was able to be part of that group and I really, really wanted more local support and transfusion nurses within Queensland because it was quite difficult to get that done without that. I was able to impact on nursing education administration but in terms of appropriate use and things like that, it was a lot more difficult to actually get anything changed. So lots of different people on the effective blood use working group from a variety of settings, scientific, financial, laboratory, etc.

We also held a workshop which brought together a whole bunch of clinicians from various hospitals to discuss what the changes meant, what the financial implications meant to the hospitals and to get some agreement on strategies that could be adopted to assist hospitals with implementing the blood budget. So they came up with an effective blood use framework, which is available on the internet and it just went through the sorts of things that we needed to have in place similar to the national standards I guess but just how we could manage it in our hospitals.

Initially also there was going to be a pilot transfusion CNC scheme and it was probably going to be one hospital but one of the outcomes from that workshop was needed to be more transfusion clinical nurse consultants if they were going to impact on improving appropriate use of blood and blood products in their facility so they ended up agreeing on five transfusion nurses across the state and we really did learn from New South Wales and South Australia in terms of getting some data linkage happening. They created a database in the decision support system that we have in Queensland, which enabled us to go down to a DRG level and doctor level to see who was using blood and blood products.

So they also decided to have an effective blood use forum to launch all of those strategies, so since March until June, they got all these things in place, so it was incredibly quick. Obviously they'd been working on the data linkage for a long time prior to that. So the two permanent transfusion nurses in Queensland were invited, so I was joined shortly after by Janelle, who is in Townsville, so she was another transfusion CNC and then they employed the five other state positions. They were in Cairns, Royal Brisbane, the Prince Charles Hospital at Nambour and the Gold Coast and then Mater Private also came on board partway through the project. So the idea here was to employ transfusion nurses to implement strategies to improve effective use of blood and also to work with blood banks in their clinical champions to reduce wastage and influence clinicians in their hospitals. So they chose those hospitals because it actually accounted for 69% of all the blood use in Queensland Health and obviously made us all a bit braver as well with what we were able to do.

So they held the forum, probably more than 200 people were at the forum. Like what was said in the previous presentation, they'd brought in people from throughout Australia, experts to help us understand the problem and the issues that we were facing and manage our supplier inventory, explain what a transfusion practitioner role meant because that was something that was new to Queensland, we're obviously about 10 years behind Victoria on that front and

eight years on New South Wales front. We tried to learn from what the other states had done.

Bernie Harrison came up and actually helped the transfusion CNCs and the clinical champions to empower us to actually be able to introduce changes. Of course, the transfusion CNCs don't do it by themselves, it's obviously a medical clinical champion that is essential and the support of your blood bank as well and a good transfusion committee. All of those things make these things easier to work, so Bernie was excellent and we had a two-day work shop with her. We also had to, obviously following the changed management strategies, generate some short term wins, so there was ongoing data to the transfusion CNCs and then we were learning how to get that data out ourselves as well so that we could continue once the project was finished. The program was linked so that the hospitals could actually save, they were given a budget in excess of what they probably needed so it was based on the 10 and 11 blood usage plus 8% and so whatever the hospital saved they actually go to keep. Of course, that didn't get fed back into any patient blood management programs, it just sort of got absorbed by the overall budget of the hospital. So there were some things that the transfusion nurses needed to do in order to change practice, which we learnt from our workshop, so the transfusion nurses agreed on …

Okay. So sorry about that. So each of the hospitals chose an area to audit and I guess they all agreed on elective orthopaedic surgery to try and impact cause there was some wide variation and they got agreements within their hospitals, of course, PA had to be different and do something completely not orthopaedic but we had a short time period to do these things, so the five state-funded transfusion nurses literally had 12 months to try and impact on their hospitals and then hopefully the value of the role would be seen and they would be able to be employed permanently. Each hospital was at a different level obviously, so Royal Brisbane and Nambour had previously had blood projects before. I had actually come from the Royal Brisbane in the blood project before getting the permanent role at PA, Townsville obviously had a permanent transfusion CNC, very different hospitals. Mater Private had come along later on as I said earlier.

Most hospitals decided to create some sort of single unit guideline, so Cairns just ended up having an anaemia clinic in the end, which I think was a fantastic result but we tried the single units first just to see if we'd get some really gain.

I can't really go through the whole state one project but there were so many layers to it and so many different hospitals involved, doing different things, so I was really just going to focus on what happened at PA. This is an overall graph of what happened and the difference between what was budgeted and what ended up being used and this graph is actually at the 37% cost so it was not the 100% cost. They were $856,000.00 lower than what the budgeted amount was but you obviously deduct that 37% as well so it does take a long time, there is an initial start-up period for any of these projects and 12 months really isn't a great deal of time to have a significant impact but I think they did a pretty good job, so that was just the five state-funded transfusion CNCs.

So at PA, we implemented a single unit procedure, as did Nambour, Royal Brisbane, I think Gold Coast also and Cairns. Townsville I don't think, didn't get to implement that but they had other initiatives going on. So we didn't use any original slogans, I'm not a fan of reinventing the wheel. The New Zealand

campaign 'Blood is a Gift' used the slogan 'why use two when one will do'. It's fairly logical, it's been used internationally as well in the UK. Other states have promoted single units for a long time and we saw the draft of the PBM guidelines so we knew what was coming as well so we thought this would be a good time to implement this because executive was interested in the project and we had their backing. So we had to create a sense of urgency in the PA, so basically we've got Geoff Simon, who was the then head of the Queensland Blood Management Program, to come to our transfusion committee and we basically just between the chair, myself and the blood bank, we just tried to invite as many key people as we could.

We needed to find a much bigger room, we needed food, the cream biscuits weren't going to cut it this time, we needed to get some proper fruit platters and the Jatz and the cheese and the only room available was in the executive building, which actually just worked out perfectly because it meant that our Deputy Director of Medical Services actually did come, along with the Director of Cardiac Surgery and also liver transplant, plus trauma as well so we had 40 plus in attendance, it was a world record for, well not a world record but a PA record to say the least. We have had a transfusion committee for quite a while, like a number of years, probably about six years and it's a metro south district committee, so we do have hospitals coming from outside of our PA hospital from QEII, Logan and Redland.

So during the project, all the transfusion nurses communicated with each other obviously. We all developed separate resources but some of them were quite similar, we had changed them for our own hospitals so I've got things from Nambour there and from the Royal Brisbane and I've just got so many things in my folders that I couldn't possibly display everything but we all did work hard, worked well together and we adapted things for our own hospital.

At the PA, we didn't want to be too contentious with our single unit guideline. We had had difficulty reaching out to the doctors in terms of getting them to document the indication, like one of the previous presentations. Again that information about appropriate use and indication is in the pathology system and not at the ward level. It does look a bit busy, it does look product focused, which is something that I think we'll work on but it was really just to get people to stop, it's a guideline just to get them to stop and think about transfusion before they request and also the fact that it's going to reduce the risk of an adverse event for our patients. Why do we give two? We know everyone's a different size, your little old lady is not the same size as the man in the bed next door, why do they both get too units, very logical.

We had to communicate that changed vision to our staff and we wanted to make sure that the clinical staff understood that we were looking at clinically stable patients, we're not targeting our bleeding, our patients in the operating theatre, in ICU, trauma, really just looking at stable uncomplicated patients and if the request form, which we had implemented, is actually completed in full with the indication and the clinical information, the haemoglobin level and document that the patient is not actively bleeding, there's codes on the back of our form, then there should be no reason why they wouldn't get their transfusion. Blood bank is always there to actually support the clinicians and not to obstruct, so we had to make it very clear that that was our process. The guideline said less than 80, not less than 70 and that was so that they would get two units if it was under 80 but

we recommended one unit between 80 and 100, we have since improved upon that.

We also did an audit of cardiac surgery and I guess we did this audit because we knew that we had a cardiac surgeon who was passionate about appropriate use of blood. We did an audit of elective CABG procedures for the entire of 2011, it was 195 patients and only 21 out of the 195 actually received a red cell transfusion, so by international standards, that is very, very low, which is very, very strict and transfusion requests need approval by the surgeon, they are not done without permission from the surgeons by junior medical staff and when we presented the cardiac audit to Surgical Grand Rounds, her slogan was 'why use one when none will do'.

So this is just a slide from the audit, so these are our not-transfused pre-admission haemoglobins and the transfused patients, so obviously there is a little bit of a difference in terms of assessment preoperatively and the haemoglobin levels preoperatively but this is the pre-transfusion haemoglobin. You can see she's got quite tight control and very low thresholds for transfusion and quite a restrictive approach and then even her not-transfused discharge patients, someone went home with a haemoglobin of 60 and we thought maybe that was under-transfused but she said patient was 19, otherwise healthy, the cardiac problem was fixed, she had follow-up but she went home with an Hb of 60, she was the only one. So very, very restrictive threshold and we have good outcomes.

We felt that with that position, we've got good champions, we've got a strong transfusion committee that we could go ahead and try and raise awareness with the 'why use two when one will do' campaign.

One of the really important things for us to do was to improve the use of a transfusion request form. There was actually codes on the back of the form but doctors never turn over the back of the form so we tried to give them this timesaving tip that they could actually just write this code and it's a lot faster for them, and then we had a project website, we did various communications, our chair of our transfusion committee obviously went for lots of Grand Rounds, not only in our hospital but also around the district. We had memos, we had intern education, we used the media and communications to its full with screen savers and all sorts of things, conversations with people as well. Obviously, this is when we had our peak when we were advertising it and we had about 50 hits, this is from our transfusion website data so we get about 1000 hits on our transfusion website every month, not including the home page because I know people just end up there without realising but actually going in and delving into the different topics and there's all our different topics here as well.

So we have an appropriate use database, which is linked to the pathology system and this is what we used to monitor our single unit procedure. It is a state-wide pathology system called AUSLAB and, unfortunately, the appropriate use data is entered by blood bank staff at the time of the transfusion request so they need to enter the haemoglobin level and the appropriate use category that is marked on the transfusion request form and inappropriate indicators are flagged in the database but we had a problem at PA because our lab staff didn't understand what we were going to use that data for, so we had to wait, the project started in July, we didn't launch our policy until February. We had our transfusion request

form in the May 2011 and we had a lot of work to do in empowering the lab staff and getting them to really own that data, that was their data that was showing our outcomes. Fortunately, it didn't impact at all on the percentage of the single unit transfusions that we were measuring, that wasn't manually entered and that was the important thing that came from the transfusion request history. It's only an approximate amount of single unit transfusions that we get because there's no real easy way to count the subsequent requests off one group and hold sample. So we've improved greatly with our data collection.

We really wanted to make sure that the blood banks were empowered and that they were communicating with clinicians in a polite and not an obstructive manner, so we gave them some posters on how you do that, what you're looking for with a transfusion request form, if it comes from theatre, ICU, OT, not to put too much emphasis on filling out forms, you really want to give them the blood that they need and a bit of a flowchart to give them that idea as well to empower them on when to forward it on to someone like the supervising scientists or onto the consultant haematologists.

So what did we find? So this is what happened when we implemented our transfusion request form and these are all our mandatory requirements that we need staff to document and our cardiac surgeon said if this was a computer system, they would have to write all these mandatory information, so we shouldn't be lenient but of course we weren't that strict but we learnt. So this was November 2011 when we audited after we implemented, we weren't getting all of the mandatory components and then we implemented our single unit procedure in February 2012, so that's the dark blue, so we're starting to improve and the main thing is that we were getting our haemoglobin results and our indication codes and we'd miss out sometimes on our consultant but we're getting our ward areas, so lots of improvements again in May 2012, that was when we were sitting there and actually vetting requests in the blood bank and just, not necessarily vetting but just feeding back to the clinicians and saying "well you've ordered two units, did you know about the new single unit procedure, is your patient at risk, do you need this transfusion urgently" and try and educate that way but that wasn't probably going to be very sustainable for both of us to sit up there and do that so we only did that for a short time and then blood bank staff would refer to supervising scientists.

With our appropriate use database, this is what it used to look like before we implemented our form, people really weren't using that data very well at all, they were just kind of putting anything in. If there was no reason for the transfusion documented on the request form then that flagged in the database as an inappropriate indicator and then we implemented our transfusion request form in May 2011 and obviously weekends and after-hours staff changes in blood bank also it's just a constant feedback of why that data is really important.

We also had to submit data to our clinical governance committee, they were really interested in how we were going to monitor this procedure and interested in getting the data on a six-monthly basis, we actually did it monthly for the first few months and we were over budget in the initial period from when they devolved the budgets to the health service district, so from July to December, we were a little bit over budget, we only had 9% single unit transfusions and then within the month and we set out KPI to 20%, which perhaps was too low, looking back

because we reached it really, within a month and we ended being under budget for our red cells almost immediately.

So this is where we launched in February 2012, our single unit procedure. This is our budget, which was our 10 and 11 blood use plus 8%. So the hospital got to keep whatever they saved and so this is the 11 and 12, the actual blood use from the first, this is when we implemented, so that's that big drop there and these are the accumulative results in terms of a dollar figure. Again, it's only at 37%, so that's what the state actually pays, not the full 100% and not including any of the time saved by nursing staff not having to administer so many transfusions, and we really didn't get very much push-back from our clinicians, we got one email from one of the doctors that just said "if I had a patient who had a haemoglobin of 140 and then the next day, his haemoglobin was 100 and we were still looking for a source of bleeding, would that patient be prevented from getting a transfusion" and our Deputy Director of Medical Services emailed back straight away, she was very supportive of the procedure in saying "No. Obviously that patient doesn't fit into those categories at all, he's obviously not stable" and supporting the supervising scientist that was working in blood bank as well so it's really important to have that executive support.

Ongoing savings, I guess, we use about 1000 units of red cells every month and that is slowly dropping down to about 800-900 in the last few months along here.

Obviously, we have a lot of changes in Queensland as well. We have had a slowing down. We have had some bed closures but our blood use dropped by about 13%, our single units did go up to 29% from 9% in the January to July 2013, those six periods, so there's probably a bit of both going on but it's certainly is having an impact.

As part of the project as well and a lot of the other transfusions nurses worked on this, we've worked really hard on our wastage as well, I think that you need to do both. This is our wastage in 2010, so we really worked very closely with the areas that were the highest users and the ones that had to transport multiple units of blood in eskies to theatre and down to ED and we had the issue with the renal department cancelling plasma exchanges and not communicating, so we're wasting a lot of FFP, so we worked really hard with those departments, came up with a nice little storage poster and did some one on one education with those areas and you can see we've actually average per month dropped in 2010, which is 116 fresh components being wasted down to the average for 2013, which is 68 and then if we look at the percentages there for PA, our 12-month average loss is actually significantly lower than the national rates of fresh component loss. We also have a system in metro south where the units that are closer to expiry in the smaller hospitals do come back to PA Hospital before they expire, so we are able to reduce our wastage that way as well.

So anchoring our new changes into culture, so as I said, the clinical governance unit were really interested in the data, they decided to make that a KPI for all of the smaller hospitals as well in our district, which we were a bit worried about, so our chair of transfusion committee did do some sessions throughout the district and we managed very quickly again so I think that we set our bar too low perhaps or we have actually just created a lovely small win for everyone because we're doing very well so now it's all the hospitals in the district are reporting on their single unit transfusions.

But I must say, Royal Brisbane and Nambour are sitting at about 40%, so when we look at that, we've got very different processes, so Nambour is a smaller health service district and they've got clinical champions on the ward, they're able to do that sort of thing where I think the Royal also has a transfusion nurse that was very much lab-based and then again, that direct feedback to clinicians upon request of transfusions in a helpful way, not in an obstructive way, so obviously we at PA have actually still got a lot of work to do but we want to make this sustainable as well and make it part of our culture.

So we always celebrate our wins as well so the entire project, the state-wide project, actually got an Australia Day achievement award from the Department of Health in Queensland and all of our transfusions nurses are now permanent so with the exception of Nick, he has sort of been ongoing employed and doing a couple of other little things but I think he will end up continuing. Fiona was made permanent just last week, Leanne was one of the first ones to be made permanent, Diana Moore, I think in January, was made permanent, Nicole in Cairns also permanent employee now has an anaemia clinic all that way up north and is doing amazing things and Hayley Thompson, they did postpone her employment I guess and the blood use started to rise again so they actually ended up re-employing a transfusion CNC.

We celebrate our wins within PA as well even though it's not particularly innovative, I think lots of people are doing it but we got an award for innovation, we feed it back to our clinical staff that what we're doing is good for our patients, that it's good for the supply and saving a precious resource and also on the state-wide level, we did have a forum where all of the transfusion nurses were able to tell their story of the improvements that they made as well.

So now we're consolidating our gains and producing more change, so basically we updated our single unit procedure to be more in line with the guidelines but we didn't change what blood bank do, so they're not going to look at a haemoglobin of 70 and say "oh no, you can only have one unit", they will still give the two units, so it is a bit of a softly, softly approach.

The transfusion request forms were recently updated, so we had to do the whole advertising all over again. We've included it in medical orientation, we've included it in our blood procedure so the staff can find it. We'll start reviewing another KPI, as we've reached that KPI and we want to keep on driving the change in practice. As I said, we haven't had any real negative feedback from the clinicians. We sort of went in quite smoothly and I think that was the support that we got from executive, they took it to clinical council for us and everyone was in agreement, which was quite good. We will continue to monitor this and probably start decreasing our frequency a bit. We might, before we do that, think about how we can get that KPI up a little bit more.

Really it wasn't just a PA hospital thing that we implemented there, it was really a part of a much bigger team and some of those teams are no longer in the role that they were before due to the changes and all of our transfusions CNCs and obviously the team that I had at PA and there's probably heaps of people that I forgot but it was really, we all sort of helped to drive this change in practice.

I think that's all, have I not talked long enough.

Anyone have any questions? Where do you think your baseline is in terms of how far more you can achieve?

Well I think we're going to, I think the Royal Brisbane is slightly bigger than us and they have got different specialties, they've got allogeneic bone marrow transplants happening there and they're, our data doesn't exclude any of those areas either and we're starting see single units where we're not promoting it, so they've gotten up 40% with that type of specialty and I think that we could probably aim for similar and that's what we originally based our benchmark on, where they were at a similar time period from us implementing, so it was the first six months, they were at 20% so we thought we'll try and get there.

Hi, I'm Caroline, I'm from Orange, the Western and I work in intensive care. So I'm trying to introduce a Hb optimising, I'm actually going to lead that for our district but I've got other commitments because I'm the CNC for ICU for the district as well so how do you think I can work that in trying to balance all my other commitments as well in trying to work on this project because we don't have a CNC for transfusion.

Okay, so do you have another hospital that you can link into?

Well I could link in to other people but I cover three ICUs in our district, so I'm trying to get this to work, I don't know how I can convince them to actually employ someone to do it but it's something I've got a passion for and I'm really interested in trying to work out.

It can be quite difficult, I know that even being in a transfusion nurse role and being the only one, that was just as hard as having other things to do because you don't, you do kind of need a champion in your hospital that is going to help to promote it I guess, so is there anyone in your hospital that . . .

Probably there could be if I look for someone, maybe I should do some education and try to find someone.

I mean, doing a on a one on one discussion with clinicians, if there are clinicians that you know.

Well the clinicians, it's not a problem, I've got buy in front the district medical director, he's actually interested in joining the committees of, I've got people interested but I can see now that it's not work that I'll be able to do by myself.

What about your, like a pathology, like how does your pathology work down at Orange? Are you going to be able get the data to show . . .

Yeah, I can get the data and I've got someone who's there who's interested in the project as well.

I mean we're quite happy to share any of the resources that you need and plus the NBA now with the single procedure that is being developed, I think that's going to help push those hospitals, especially . . .

I'll have a chat with you over lunch please, thank you.

Alright. And I think there was a, well I certainly took a hell of a lot of lessons from that because it's getting down to actually implementing real change at a hospital level. At a national level, the results of Natasha and the many other people involved, we could see Queensland usage going down as you presented there and it's a great achievement. Probably the other key point is the emphasis on champion and the need for a clinical champion type support you need to drive that change, in fact, you listed a whole bunch of points but on behalf of everyone here Natasha, thanks very much for (42.31).

Thank you.