

MELB - Peter McCall

That leads us into the next session. That was the governance and you could tell a lot of hospitals are in the process implementing the standard and certainly St John of God has made significant progress but still has challenges in front of them. The next one is to actually highlight the successful implementation of a PBM program, which is a claim that I'm certainly keen to see translated across the rest of the country. We're very lucky to have Dr Peter McCall here, who's the head of clinical operations department and anaesthesia in the Austin Hospital.

Peter's main clinical interests are liver transplantation and major cardiac and aortic surgery, his longstanding interest in haematology and transfusion medicine in the operative setting. He's a major medical role in preoperative assessment and optimisation of patient's blood. In conjunction with Austin Haematology he has setup preoperative haemoglobin optimisation at Austin. He's also currently completing a Masters in Health Management.

Rather cheekily, he didn't actually say that whilst Larry goes to all the committees, I'm at the Austin doing the work. Probably all of you work in hospitals that are adorned with brightly coloured posters at the moment. Perhaps this might be more appropriate for some of you. The background and the evidence that supports patient blood management has already been covered so therefore, I don't need to cover it, except to make the point that in the guidelines and the criteria, patient blood management doesn't specifically sit as a criteria in its own right. It sort of is vaguely encompassed in probably three out of the four criteria. Importantly, the accreditation gives us a means to implement what we've always known for a long period of time is good clinical practice and it's certainly accelerated our process at the Austin and as has been referred to repeatedly today, certainly when we had our interim accreditation assessment, it pushes the concept of audit so heavily which I will get to later.

So obviously, we've heard that blood management relates to haemoglobin optimisation, blood conservation and tolerating anaemia and is a broad sense that requires the establishment of the process, the education of those involved and I will say it so many times, the important of audit. Now, I'm, I suppose, a senior manager at the Austin. I have sat at so many redesign meetings and it's interesting now that I'm doing my Masters that there's a lot of evidence and information that says that what we actually do in these redesign meetings is actually probably floored. So what I want to share with you is concepts of implementation clinical change, is perhaps some of the repeated things that we go through are not necessarily correct. One thing is that restructuring is omnipresent in healthcare. We have a problem, what we do is we restructure. We devise a new process to correct the problem.

Now, this article makes a very strong ploy that, in fact, it's reached the point that restructuring is at the gratification of those who do it and, in fact, we should invest in our existing processes and redefine them. And so therefore, for me who wanted to get involved in the successful process at the Austin, I looked at what our existing structure was and clearly, through our anaesthesia clinics, we have a preoperative optimisation process that perhaps in the past hasn't included

haemoglobin but has involved lots of other areas. A fundamental resource that we have is our anaesthesia resource nurses, who assist the anaesthetist in that perioperative optimisation process. So it didn't seem logical to me to create an anaemia clinic to correct or to assess preoperative haemoglobins. However, what I should have included here is what we also did have was an outpatient structure with the haematologist so it's important for us to link our anaesthetic preoperative assessment with our existing haemology outpatient process.

The other, really important concept that I've been exposed to whilst I've been studying is the realisation that healthcare is provided in a system. Unfortunately, conventional medical, probably nursing, probably all Allied Health Care is in a traditional model that is not actually focused on the system. It's actually focused on the accumulation of knowledge, the holy sanctity of the individual relationship between practitioner and patient and in that scenario, improvement is slow. Healthcare improvements are limited because you are relying on consistency of individuals which is difficult. And there has been the sniggering in the room about VMO attitudes and medical attitudes and there is certainly one, fundamental, concept that medical staff need to actually accept and that whilst they give medical care to individual patients, they actually don't do it in a vacuum. So therefore, if I want to get successful change, I can't design a process that's going to rely on the individual doctors to change their practice.

I have to come up with a better system. So therefore, it's important for me to put in place a process that was consistent, reproducible and therefore, we could monitor it. So if you look at these concepts of preoperative haemoglobin optimisation, blood conservation and a tolerance of anaemia, if you want to look for where your bangs for bucks are, you look for where you can bring the maximum change in the most consistent manner and most reliably and there's no doubt that preoperative haemoglobin optimisation is where we should be focusing. Because, in fact, if the patient comes to theatre with an adequate or high haemoglobin, then two days later the junior medical staff isn't confronted with the idea "well will I transfuse the patient because their haemoglobin's 75" because their haemoglobin won't reach the nadir of 75.

So once you go out of the haemoglobin optimisation process, you come into progressively a greater area where it requires individual clinicians to either be educated, engaged and on board. The operative suite is a good environment. It's a relatively consistent environment. The surgical group, the anaesthetic group is a group that is certainly suitable to be educated and certainly at the Austin over the last five years, we have taken every opportunity we have in combined symposia with our surgical colleagues to talk about blood patient management. And as has been alluded to before, once you get out into the wards where you have the constant changeover of junior medical staff, short rotations, relatively infrequent exposure to the requirements to make decisions about transfusion, it's very hard to induce practice change in that group. This has been the best paper I have read in the last five years by Braithwaite. And we've seen it today. We've been sniggering about VMOs, we've been sniggering about doctors.

We immediately resort to our tribe or the opposing tribe and the opposing tribe is the surgeons and perhaps I'm being a little bit more subtle than showing Larry's photo but it is an evolutionary process that humans have engaged in for millions of years. So why is it that we sit in the redesign forum and think that we'll be able to engage culture change by getting people to act in a fashion that's different, so

therefore, if we want to engage the VMOs, we have to understand how they make their decisions and it's actually not their problem that they don't follow what we do, it's our problem because we actually aren't setting up the system to provide a way for them to respond in a way. And it's certainly, totally predictable when you bring in change or challenge medical staff, there will be resistance going back to that traditional educational style. What I forgot to mention at that time was systems-based approach understanding is now one of the six, core competencies of American physicians and specialists.

It's been recognised as a core competency. So that would give you some confidence. In that article it actually said "well there's a problem. The universities don't know how to teach it. They don't really know what it is and they don't know how to assess it". So the idea that there will be a generational change in doctors is probably still a fair way away. The other interesting article which is here, the second article, probably confirms what we've already known and that is within healthcare professionals, there is a different level of willingness to engage in change. So therefore, if I want my process to work or I shouldn't say my process but I want the Austin process to be successful, clearly, the nursing core that are involved in preadmission, are going to be the most important allies that I can get on site.

Another one of the things that's made me cringe over the last five years is the number of times I sit at redesign meetings and hear people talking about clinical champions. Now, it's true in this article by Downton. It does also bring up the issue that, not only do we not have systems-based training for medicos, actually the idea of medical leadership has no place currently in medical education. But, okay, I think I'm a senior manager. I think I've got something to contribute but I can't see myself as a knight on a horse with shining armour riding into fix problems as is often portrayed that there is this need for the messiah type clinical leadership. So what is true is if you have medical or senior medical opposition, your project won't work. But you don't actually need to have a zealous person leading your process. You need someone who's concerned and interested. The other daunting fact is that 80% of healthcare improvement programs fail to achieve sustainable outcomes.

One of the divisions of the National Health has looked particularly at this and has devised a sustainability score that we've used on a couple of projects at the Austin and I've actually used in the way I've assessed our haemoglobin optimisation process. It can be used as a predictive tool where you get key players to score and it will highlight opinions in 10 different areas and it will highlight, either the deficiencies or strengths in your organisation and you can look at your predictive score and it can either give you confidence that you may have success or it may actually tell you, you've got fundamental issues that you need to correct before you proceed. As I said, there's predetermined weightings in the 10 different criteria and a score of over 50 gives you optimism and a score below 30 means don't bother or at least, think very seriously about how you can change or fix some of the deficiencies. Now none of these things are rocket science. It's not surprising that, okay, healthcare improvements are meant to improve patient care, so that's a given.

If the project makes life more efficient, makes life easier for the healthcare workers, it's likely to be sustained if there is a benefit. Now, not surprisingly, patient blood management scores pretty poorly in this criteria because, in fact, it

is a cost. You know, it's a cost that we don't really recur in Victoria because even when the hospital spends the money, we don't actually have a savings on our blood budget, so there's very little chance that you can see that beyond improving patient outcome, that you're achieving anything, apart from perhaps achieving your accreditation. If your staff believe that the process is credible, that there will be an improvement, if the process is an adaptation of your existing structures, it's likely to succeed and if you have an effective system to monitor the progress and that's the data, if you have prompt return of your data then you are likely to have success with your process. Staff need to be involved in the initiation of the process and right from the start I identified our anaesthesia resource nurses as the key people so in fact, I actually got them to design how they thought the process would work.

What I should also say is we've had one meeting with the haematologists, myself and the ARNs about 12 months ago, sat down. We've had one meeting. We haven't kept minutes, we haven't kept records. We communicate by phone. We check with each other but we don't go into this ritual of getting the key stakeholders in the room, writing minutes and sort of perpetuating the process. Obviously, your staff in engagement needs to be important. Management engagement needs to be important. And this is interesting because I'll show you the results of the scoring system, which I did and, in fact, despite the necessity that accreditation is at a high profile with the executive, we actually scored pretty poorly in this. So in fact, the people who responded, didn't see that there was high level management support specifically at a ground level for this kind of process. Clinical engagement's important and obviously, it's important for the process to fit in with your organisational strategy and the staff have to be happy that there is adequate infrastructure and resources for the process to be sustained.

As I said, 80% of healthcare innovations fail. One of the recommendations from the NHS group is that 50% of resources involved in the change process should be allocated to the monitoring and post-implementation support rather than just the initiation of the process. Now, every redesign process that I see or have been involved in, focuses purely on designing a new process and then there is an assumption that within the existing resources that are available, somehow there will be monitoring of this process, so it's a fundamental mistake we make when we try to induce healthcare and certainly with what's being discussed about medical involvement in the discussion is medical staff to respond to data. So if there is good data that's timely and it indicates that there is an improvement in patient outcome, then medical staff will engage. So reminding you again, we're still predominantly talking about preoperative haemoglobin optimisation because it's sort of bangs for bucks. Here we are.

You've seen this template and this is to tell you exactly what we're doing at the Austin. We started with the template. It identifies the major types of surgery, so obviously, this is specific for us. The important thing is it actually highlights that you need to tailor this template for your own individual institution. So you know the scenario at the Austin. We do 23,500 procedures per year, which is the highest for any hospital in Melbourne. 16,500 are done at the main Austin campus and 12,000 of them are elective cases. Of that, a quarter of those patients are seen in the anaesthetic preadmission process and the majority of them are seen because of the extent of surgery and therefore, that fits in well with the NBA guidelines of major surgery and major surgery patients require

haemoglobin optimisation and obviously the other reason why patients come to the pre-anaesthetic clinic is because they have comorbidities.

So it's been relatively easy for us to make just a rule that routine bloods for patients coming to the pre-anaesthetic clinic for major surgery include the creatinine, CRP and iron studies as indicated by the NBA guidelines. I'll talk a little about it a little bit later. One of the problems that we've had to tweak is the fact that the NBA guidelines don't actually reflect surgical categories and urgencies. The other dilemma we had is should the iron studies be done when the patient is added to the waiting list or when the patient is surgically pre-admitted and probably we do have the problem that surgical preadmission is a little bit late but when the patient gets put on the waiting list is probably far too early and it would require significant resources to be able to monitor patient's haemoglobin and iron levels whilst they're on the waiting list.

So what happens is, all the patients who are seen in the pre-anaesthetic clinic, the anaesthesia resource nurse checks electronically before the clinic, the results of the iron studies and CRP. If there are abnormal results they're flagged to the anaesthetist who's involved in the preadmission clinic and there is a specific Austin algorithm in place that's been designed, in consultation with the haematologists. We have a streamlined referral process. We have phone consultation access to a haematology registrar. Obviously communication is an important component in this process, so there is good liaison with the surgical units and we have a standardised iron supplementation regime in process. Interestingly, it is important for you to know your own data and your own population.

This is showing some data that we collected before our haemoglobin intervention process and that was to look at 150 consecutive cardiac patients, showing that we had an incidence of anaemia of around 18, 19% but only a quarter of the patients who are anaemic are iron deficient. The transfusion outcomes are probably what you would expect, transfusion rate for coronary patients of mid-thirties and obviously the anaemic patients have a higher transfusion rate and the non-anaemic iron replete patients have a lower transfusion rate. I suppose the one strange result is that the low transfusion rate in the iron deficient males and I think that might be an aberration or it might simply be that as was alluded to a little bit earlier by Larry, males have a larger red cell mass and so it may be that they tolerate the haemodilution better than women obviously.

So when we said you can start with the NBA guideline, you need to design your own process and I need to acknowledge Frank Hong because he has been the main instigator of this algorithm and one of the things that we've tweaked on the NBA guidelines is the assessment of what the patient's category is because obviously that will indicate how much time you have to institute haemoglobin optimisation. So there is a group of patients that are not anaemic but who have depleted iron stores, that if they are expected to have a haemoglobin that may require transfusion, can go through a haemoglobin optimisation process, the anaemic patients, if they can be delayed more than 30 days as they're either CAT2 or CAT3 patients, they'll be referred to the haemoglobin clinic, which is we've piggybacked onto an existing haematology clinic and if there is an inability to delay surgery then we have an expedited mechanism how the anaesthetic clinic can order an iron infusion with subsequent haematology follow-up.

Obviously, the thing that sits in the back of your mind is the concern that if we identify patients with iron deficiency anaemia and then fail to exclude that they may have occult malignancy that would be inappropriate management. Now, obviously, we have on the bottom, fast track mechanism to be able to get direct access to a haematology registrar and a way to expedite making the appointments. So I told you about the sustainability score. Over the last couple of weeks I've got a variety of key players to score it. I've got some of the haematologists, I've got the anaesthesia resource nurses themselves. I've got the anaesthetists. I deliberately chose some of the anaesthetists that I know that are supportive to change and innovation guys and I also got some of the guys who are very recalcitrant to any concept of change.

I didn't bother to ask the surgeons partly because, it's an interesting concept, these are their patients that we're working on but they actually don't really have any engagement. The only engagement I had was in the first two weeks of setting up the process when we had a whipple patient books for a whipples who had iron deficiency anaemia. I was in the clinic so I asked the anaesthesia resource nurse "check with the liaison nurse when surgery is booked." I was told six weeks. I said "that sounds strange for a whipples. Is it really six weeks?" So we checked with the liaison nurse again and they said "yes. No. The case has been booked for six weeks." So I said "okay, let the patient run through the normal pathway. The patient can be seen in haematology clinic on Tuesday and we'll take it from there". Something was a little bit wrong with the communication because that Friday the surgeon found out that instead of doing his whipples on Monday, he was going to do four hernias.

So he then immediately, in his tribal behaviour, called the head of his tribe, which is the professor or surgery. So I got the phone call from the professor or surgery saying "we've just been told that this patient's been cancelled by Peter McCall and we'd like an explanation" and I said "what are you talking about"? And he said "this haemoglobin nonsense that you're doing". And I said "but I discussed all of this with you. I discussed the division of surgery. You were all told and all that sort of stuff" and then obviously we worked out that there was this communication gap and obviously the patient wasn't cancelled so obviously, we hadn't done things the right way but the final thing was and he said "and anyway iron deficiency anaemia is a surgical disease". And I said "if it's a surgical disease how come you don't investigate for it"? And obviously, apart from the tribalism, turf war and well you can't tell me when I can play in the sandpit and all that sort of stuff was, clearly, the surgeon was concerned that if they were to do a whipples and then find out that they had missed a CA stomach or a CA colon, it would look very bad on the surgical unit.

So we've had to make another little provision and that is if we have an anaemic patient whose general surgical, we notify the surgeons and also as he said "and I want a surgeon to do the endoscopies". So there is it. So now, here are our scores. To remind you, number one is the benefits to the institution greater than just a better patient outcome and as I said, it's not surprising that score's low because, as I said, patient blood management costs us money. It actually doesn't really save us money in the current financial scenario. Interestingly, the other score, which is low is the level of management and executive support, which, I think is perhaps something that perhaps needs to just be done with better education and the third thing and I could go into the detail between what each group said, for instance, the haematologist thought it was pretty good and I

think it's just because they were relieved that they haven't had to do a lot of extra work. It was the anaesthesia resource nurses who were most concerned it was inadequate resources to maintain the sustainability of this process. So again, what sustains change is feedback.

So what we now have in place is a database that all patients who have intervention with the haemoglobin optimisation is there. We now have a process that all patients who have haemoglobin interventions, have their iron and haemoglobin measured on induction at time of surgery and we will look at that data and obviously, we'll have the secondary outcomes of being able to look at transfusion rates and certainly our early data confirms that we're picking up about a 15% incidence of anaemia and that accounts for about 20 patients a month getting referred to haematology. Larry's touched on intraoperative blood conservation so I won't go any further except to reiterate again, if surgeons operate better on JW patients or have less blood loss, what is that factor that actually brings that about and why doesn't it happen for all patients? Anaesthesia, I think, is getting relatively informed.

To answer what someone said about VMOs, education is an important thing. We've just about completed an audit on all intraoperative blood transfusions in theatre and what's very interesting is we see two distinct trends and that is there's a transfusion trigger for the staff anaesthetists, that's eight and the registrars and VMOs, their transfusion trigger is 10. My next job will be to educate that group and I think it's possibly that the VMO group may have old fashioned views and it may be that the registrars are over cautious but with that kind of data, in the right forum, will be very easy, I think, to induce a change in the practice of the registrars and the VMO group. Another really good example of systems change has been the adoption of tranexamic acid. One thing is it's been well supported by evidence, so I actually discussed with the orthopaedic surgeons about what we should do.

And I actually left it for the orthopaedic surgeons to review the literature themselves rather than go and give them a talk and then the head of orthopaedic surgery came back to me and said "look, we've looked at the evidence and it looks good. How do we do it"? And it actually wasn't very hard to institute the fact that everyone who has a joint replacement at the Austin gets 15 milligrams of tranexamic acid as a systems-based approach. What has amazed me is how successful it has been, albeit with retrospective cases. We had a retrospective series of 100 cases at the Austin, which had an average transfusion rate around 20% with haemoglobin falls of around 40. We've then had a prospective series of 100 patients who have just received 15 milligrams of tranexamic acid on induction and the transfusion rate's fallen to 6%.

The haemoglobin fall has changed. And the other bit of data that I only got last night and that is the discharge haemoglobin on the tranexamic acid group is 10 grams per litre higher than what it was in the pre-tranexamic acid. So if you want to think about low hanging fruit, this is about as low and easy a change that you can induce. To talk just very briefly about the idea of the acceptance of anaemia, as it's been alluded to today, it is a much, much more difficult thing that I don't think we really have got a lot of runs on the board yet. It requires education but it's an ever changing population of doctors that we need to educate. I probably would have contradicted Larry and say my understanding of it is that the level of training of junior medical staff in appropriate transfusion is pretty low and I think

Carol will attest, she gives a one hour lecture to the interns once a year about what is appropriate transfusion practice so it's probably not as good as it could be. The other thing is one of the audit.

Things for the guidelines is to define appropriateness of transfusion and that is unbelievably difficult. I am interested in this but I still find it difficult to ascertain what is appropriateness of transfusion, particularly because it's the context. Non-bleeding patients are completely different than bleeding patients. Ward management is probably a lot more less supervised. In contrast, ICU probably is an area where we should be able to regulate a lot better and certainly, postoperative transfusion in surgical patient policy is different than medical. But as has been alluded today, certainly, single unit policy is a highly successful thing. We have a single unit dispatch from our blood bank policy but we don't have a policy that necessarily means that the patients will have a haemoglobin in between to ascertain their levels.

So I remind you of my generic take-home messages about how you should go about implementing change in your hospitals but it would be remiss of me when I've actually got a chance to sit on the soapbox to not go on about a few of the things that I've observed through this process and none of these ideas have I ever kept quiet before I've mentioned them at multiple forums. Obviously, it's difficult for us in Victoria to establish patient blood management when we have the cost model that has blood products provided free. And until that changes, it's very hard for us to get engagement with the hospital. The other thing is is we're not talking here about treatment of anaemia and, in fact, we're talking about haemoglobin optimisation to avoid transfusion in the perioperative period, so why is it that we accept a lower haemoglobin in women than men, particularly when we know they've got a lower body mass, they've got a lower blood volume and they are more likely to be transfused so it is just illogical.

I accept that a woman with a haemoglobin of 115 or 120 is not defined as anaemic but she is at risk of transfusion. The other thing is, we have addressed the issue of iron deficiency anaemia. As I told you, all our data says that iron deficiency anaemia is probably only a quarter of the causes of perioperative anaemia, so what we should be doing for treating anaemia of chronic disease for us, at the Austin and it is perhaps the next thing that we have to because it's hard to maintain impetus in a program if we are doing all this work and what we are doing is identifying 5% of the patients and giving them some iron. The other problem is, is, I think our data's going to show that even though we're intervening, we aren't particularly successful at increasing the haemoglobins and I think it's possibly because we're still using oral more than intravenous.

We don't have access to EPO and we at some stage, at a high level in Australia, we have to address the issue that we need to be able to get PBS access to EPO for perioperative haemoglobin optimisation because in the scenario in which most of us work, most of the patients that we see in our clinic are CAT1 patients, so we have less than 30 days to get them fixed, so even an iron infusion may not be adequate. They may need EPO and that's something we have to address. The other issue is that we don't have PBS access to some of the better, easier, safer forms of iron and as such, we have to rely on using iron polymaltose. And as I said, I make the comment our patients come into two groups. We have the CAT1s that need to be sorted out straight away and then we have our orthopaedic group that probably gets sorted out over three months. So therefore,

we need to have a very specific accelerated method of haemoglobin optimisation in 1 patients. And then I'll just leave this as the last thing, we aren't even talking about emergency patients because there are patients who are in the ward awaiting emergency surgery who we could also be addressing how we optimise their preoperative haemoglobin as well.

That's a pretty rich field of issues. Questions, comments? Is Karen Botting still here? Karen, do you want to talk about the funding issue raised by Peter just seeing you're here, for the Victorian situation.

Thank you for that. The question really is about devolved blood budgets, so currently in Victoria the blood supply is funded entirely by the Department of Health and the cost is not seen at a health service level. So what Peter is suggesting is that the cost be seen at a health service level and also any of the savings. One of the things that we are having a look at is devolved blood budgets. No decision has been made yet on this but it is being thought about.

The one comment and I might not be as well informed about devolved blood budgets is that it's still a lot more complicated and there's still a lot more paper chase rather than the hospital's pharmacology budget. If I give a business case to change a particular drug or something, the hospital knows exactly what their existing costs are and what their future costs might be, whereas a proposal relating to blood, even if you have got the devolved budget, it's still not exactly the same sort of process.

Other questions?

When you develop your patient blood management guidelines in your organisation, have you given a chance to involve the consumer feedbacks of this and if there is such, how did you do it?

I honestly would have to say no and no to that.

Final questions?

Can I just ask then, you've not long completed accreditation, was that picked up by the accreditors because we ...

I don't think it was.

We're in the process of implementing these guidelines in ours and when we're deciding these guidelines and this process, we have thought to involve the consumer representative and we will just want them to go into the journey and the process and we have stated our options and said "that might be good" but I'm not quite sure if you have implemented it and we can adopt.

Well I suppose hypothetically, one of the arguments for iron carboxymaltose is that when the patient would come to the pre-anaesthetic clinic and was identified as having iron deficiency anaemia, we could actually administer the carboxymaltose in the clinic and then the patient doesn't need to come back for a separate admission to our ambulatory care unit, which is already starting to complain a little bit about the number of iron infusions we're doing. So that would be something that would give us some impetus, as said "well it might be a little bit

more expensive" but there's a real thing from the patients who are saying "well to come back and to get it" and in fact one of the problems is, it induces a delay because we decide one day that patient needs the iron infusion.

It might take us three or four days to get it and in a CAT1 patient that might be a significant thing, so in fact, for us to be able to administer the iron in the pre-anaesthetic clinic would be a significant innovation for us. The other thing which I've been told quietly is that iron infusions are actually a good little wheel spinner and, in fact, for their cost for their remuneration, in fact, doing more iron infusions is actually good for the hospital budget. Now if, in fact, you did it as part of a pre-anaesthetic clinic, I'm not sure whether that would have costing implications but to bring the patient back on a separate occasion for a three to four hour infusion is an inconvenience.

Unfortunately, we've run out of time. The NBA's aware of the PBS issue and is taking it up with the Department of Health and Ageing. Us taking it up doesn't mean you'll see resolution quickly. I'd also mention, we are working on a business case because each of the states is different and the costs of blood is an issue but there is a business case in terms of the amount of time patients spend in the wards and in ICU as a consequence of transfusion and so there are existing levers for a business case and as part of those tools, you will see business cases that you can potentially remodel, even given the problem of free blood.