

TRANSCRIPT

FAMILY AND COMMUNITY DEVELOPMENT COMMITTEE

Inquiry into perinatal services

Melbourne — 5 February 2018

Members

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Witnesses

Associate Professor Michael Stewart, director, and

Dr Jacqui Smith, obstetrician, Paediatric Infant Perinatal Emergency Retrieval.

The CHAIR — I welcome to these public hearings Mr Michael Stewart, acting director of the Paediatric Infant Perinatal Emergency Retrieval Service, otherwise known as PIPER, and Dr Jacqui Smith, who is the obstetrics director at PIPER.

All evidence at this hearing taken by the committee is protected by parliamentary privilege as provided by the Constitution Act 1975 and is subject to the provisions of the Parliamentary Committees Act 2003 and other relevant legislation. Any comments that you make outside the hearing will not be afforded such privilege. It is a contempt of Parliament to provide false evidence. These proceedings will be recorded and you will be sent a proof copy of the transcripts. Apart from that, how are you going?

Assoc. Prof. STEWART — Very good. How are you?

The CHAIR — Fantastic. Welcome.

The CHAIR — We might, if you do not mind, start off with 10 to 15 minutes of you telling us about your service, and then we might ask some questions after that.

Assoc. Prof. STEWART — That is fine. I have just some minor corrections. I am now the director of PIPER and not a mister — I am a clinician.

Thank you very much for the invitation to expand on the role of PIPER. I have read with interest most of the submissions and the presentations, and it is fantastic to see the level of engagement that the inquiry has generated. That is terrific.

As I said, my name is Michael Stewart. I am a neonatologist. I am the director of PIPER. I have worked in tertiary Victorian neonatal intensive care for the past 24 years, and for the past 18 years I have been medical director of what was then known as the Newborn Emergency Transport Service, and more recently the director of the amalgamated PIPER service. Along the way I have spent time working in Swan Hill, Shepparton and in a regional area of New Zealand, so I have not always worked in the ivory towers with all the bells and whistles, so I understand what it is like to be on the other end of referrals. And I also trained in Canada for a short period of time.

Jacqui is our specialist obstetrician and medical director of the perinatal component of PIPER. Jacqui has extensive clinical experience as a specialist obstetrician and gynaecologist, mainly in the west. She also has experience as director of a small rural health service which included a maternity service and also has experience with the health service commissioner's office and a number of other things. So it is a great help to have her on our team.

Visual presentation.

Assoc. Prof. STEWART — I would just like firstly to show the time line of events of how PIPER became established back in 1976, and this correlated with really the development of neonatal intensive care as a specialty in the early 1970s. The Newborn Emergency Transport Service was formed back then. It was a collaborative service between the Women's, Mercy, Monash and Children's hospitals, the ambulance service and the then Health Commission, and it was established with a number of roles, as I will show you on a subsequent slide.

Prior to this it is fair to say there was no safe means of moving any sick baby to a hospital with a neonatal intensive care facility. In 1979 the Paediatric Emergency Transport Service commenced operation. That largely grew out of a similar need, I guess, and from the children's hospital paediatric ICU, which was the only paediatric ICU in the state at the time. Then in 2006 the perinatal emergency referral service was established. That is basically a hotline for consultation for clinicians caring for mothers/pregnant women who develop acute problems during pregnancy and usually problems that raise their risk of delivering a baby who will need neonatal intensive care. So they need to be referred into a hospital with those facilities.

Why did PERS come about then? Well, there was increasing difficulty with referrers accessing beds in perinatal maternity services in Melbourne, either because they said they had no NICU capacity or no maternal capacity or both. Referrers would ring one hospital and often get on a merry-go-round around the three of them, and they might go around again before they got this problem solved and so PERS was established to try and streamline

that. Then in 2011, for various reasons, the NETS and PERS, which were based at the Women's hospital, came together at the new Children's hospital with the paediatric service to form the combined service.

This slide shows the number of babies in the mid-70s who we would expect to survive if they got to a neonatal intensive care unit — over 1000 grams, survived more than 10 hours but died outside a hospital with a neonatal intensive care. You can see in 1974 — this is consultative council data — there were 96 such babies. By 1978 that had fallen to zero. What that means is there were fewer at-risk babies being born in those hospitals. Particularly before NETS was established, the message was already getting out that if you have a high-risk pregnant woman, move her into Melbourne to one of the three perinatal hospitals. And then when NETS was established of course some women cannot be moved but also some babies get sick unexpectedly after birth in hospitals where they are born which do not have intensive care facilities so they need a retrieval service to get them into the right place.

This is a complicated graph but I will just walk you through it. It is showing us through five time periods the survival in babies born between 23 and 27 weeks, so extremely preterm. On the vertical axis is the per cent survival to one year, and the epochs along the x-axis shows two groups — what we call outborn, babies who were born outside the Mercy, the Women's or the Monash Medical Centre, and that includes outside Francis Perry House and Jessie McPherson, and then the babies born in those hospitals. You can see, if you just take 1990 to 1994, 34 per cent of babies born outside perinatal hospitals in those gestations died and the survival was double if you got to one of those health services to be born. This is what drives us, this is what makes us anxious when we get a phone call from a clinician who says, 'I have a women at 26 weeks, maybe early preterm labour'. This is what drives us to ensure they get optimum assessment and optimum timing of transfer into a hospital with the right facilities.

When we think of a newborn emergency transport service, we obviously think of transport. But regional services have a number of other roles — regional transport services or regional retrieval services — so obviously the clinical roles. So yes, we are there for the emergency consultations and to provide either access to transport, as with the high-risk pregnant women, undertaken by Ambulance Victoria, or medical retrieval as happens for little babies where we need to send out a specialist medical nursing team with appropriate equipment to stabilise and move them in a controlled fashion.

But we also do a lot of non-emergency back transfers, and our model in Victoria is probably the flagship that the world looks to. We move about 1700 babies a year back from the major hospitals to be closer to where the family live, which helps with obviously reducing the stress of geographic dislocation on these families but also helps with patient flow and keeps the beds available in the high acuity part of the system.

We also play a close role in monitoring access to beds, so bed finding has been one of our major issues. We maintain a web-based, if you like, occupancy bureau of what is happening in all the public special care, private special care and NICU hospitals, so we know how many cots are occupied at any one time and we have longitudinal data on all the occupancy in those beds.

We do a lot in terms of education and research. Our outreach programs reach more than 2500 people a year, particularly focusing on resuscitation of the newborn and stabilisation of transfer in the smaller maternity hospitals. We also undertake research to varying degrees. We participate in system monitoring and planning. For example, you will have heard about how in the past we occasionally had to take babies out of the state for capacity reasons. We monitored and reported that on a regular basis. We monitor and report the number of times a baby is born in a major hospital and has to be transferred to another hospital because there is no capacity in that hospital to continue that baby's care. We participate in a number of Department of Health and Human Services committees and other committees involving the health services, predominantly tertiary but also with the non-tertiary sector as well.

I just want to show you two slides with some information on them that I hope conveys the message of how we like to do business. Firstly, we like to think we provide a one-stop shop philosophy of care. For clinicians who are meeting women or babies with conditions that are really outside the scope of their clinical capability and their health service capability, we provide rapid access to a specialty-specific — so obstetric or neonatology or paediatric, in the case of children — retrieval consultant.

We are a consultant-led service. When you ring us, you do not get trainees; you get put through to a consultant usually in 1 to 5 minutes. We prioritise the clinical issues over the logistics. So we might be very busy, we know

that the hospitals are very busy, we might know ambulances are very busy, but that is not the referrer's problem. Our focus is on the clinical problem that is being presented and trying to assess that as thoroughly as we can to determine what is the most appropriate course, and then we worry about how we manage to transfer that patient if that is what is required.

We tailor advice to the capability of referring hospitals. We are referred from services with midwifery-led maternity services, GP-led maternity services and then services of course with paediatricians, where they have got much higher capability. So we tailor our advice according to the referrer's capability. We try not to mention bed-finding at all, although it is our single biggest problem — we do not mention it at all on the call. We deal with the clinical, we make a decision, we agree on what we need to do, we provide stabilisation advice, and we say, 'Yes, if we need to move that baby, we'll get back to you with an ETA once we've sorted that out'. Then we let the referrer go and we have a discussion and sort out how we mobilise and how we get there and what team we send and where the patient is going to go.

We have a collaborative approach to the issues that come up on the call both with the referrer but also with receiving hospitals. So we spend a lot of time negotiating solutions with the tertiary hospitals but also the non-tertiary when we are taking mothers or babies to those hospitals as well. And importantly we recognise the value of teamwork behaviour and the use of all available resources, not just the tertiary sector.

The second slide in just this section is to describe our approach to allocating receiving units. We have a number of principles that we apply. So firstly, the clinical care requirement of the baby or the mother is paramount, and that overrides all others. We are cognisant of trying to find a receiving unit which is the most geographically proximate location to the family. We have heard from the previous speakers about mental health issues in pregnancy. We know that a family having to move, often for a prolonged period of time to another geographic area, is incredibly disruptive and stressful, so we take that into account.

It takes account of any express parent and referrer preferences. For example, a parent may have had a perinatal loss at one of the hospitals in the past and may not want to go back there or may want to go back there, so we would try and facilitate that. We look at trying to balance the workload, particularly when all the NICUs are operating at capacity or all the maternity services in the tertiary hospitals are at capacity — we try and consider balancing that workload. Then we have to look at logistic issues, so sometimes around ambulance transport, around weather issues. It is sometimes easier and more sensible to bring the baby or the woman into Melbourne rather than perhaps to an intermediate-level hospital between the referring hospital and the city.

I am going to show you some activity data now — a busy slide, but again on the Y-axis is the number of points of activity and along the bottom is financial years. This is a longitudinal graph from 2002–03 through to 2016–17. It shows three data points. In the green is the number of referrals that end up as a consultation — in other words, the patient is not moved. I think the important thing there is you can see that there really is a dramatic increase in calls where we are providing advice. These calls are really important, because that enables us to support clinicians to care for women and babies without having to move them. So we think that is a really important piece of evidence of our service. The red line is the emergency transfers. They are actually going up higher than what the proportionate increase in births are, and there are probably a number of reasons for that, which we can discuss. The top line is the return transfers that I mentioned earlier, which is really unique to our service; no other service that I am aware of has such an active process of back transfer.

This slide just shows you the source of our retrievals by regions of Victoria. We get babies from all over the state. You will see most come from metropolitan, and about a quarter to a third come from outside the Melbourne metropolitan area, and that really mirrors, to a large extent, the proportion of births in the state.

This is some obstetric transfer data. Again, the number on the vertical axis, time epochs on the X-axis; two data items. One is total referrals, and you can see they are rising steadily. They are rising about proportionately with the increase in births over this period, maybe a little bit more. But interestingly the red line is transfers, and you can see, just eyeballing that graph, that the gap between referrals and transfers is increasing, so increasingly Jacqui and her team are able to provide advice to the referrers to enable the woman to continue care at the referring hospital. I think that is an important principle.

We do not only bring babies or women into Melbourne, and this table just shows some data from 2014–15. Of 895 transfers, you can see most of them came into one of the three tertiary perinatal hospitals. We also took a number of women into metro Melbourne non-tertiary maternity services but also into regional and rural. There

is a similar table, actually, for neonatal transfers showing that we do take babies to both rural and metro non-tertiary services — not to the same extent as obstetrics.

I talked about bed finding. The single biggest issue we have internally and possibly from a systems perspective as well at the moment is the time it takes us to confirm a receiving unit when everyone agrees we have got an urgent, high-risk maternal transfer in front of us. This shows two lines. The blue line is the median time to confirm that. It is not the average, because the data is skewed, but you can see that in 2015–16 that was 47 minutes. That means in half the cases it takes longer than 47 minutes to actually confirm a bed. And if we look at the 90th centile, that is 168 minutes — you are getting up close to 3 hours. So for about 10 per cent of urgent PERS transfers there is a delay getting out to 3 hours in confirming a bed.

Now, there are complexities behind this data, but I think the main message is there, and I think most of us accept that it does take a long time on occasions to confirm the bed. Why is that? Because perinatal receiving hospitals are trying to balance their NICU and their birth suite activity, and we have to negotiate a solution there. We do not, at PIPER, have the authority to overrule and say, ‘Well, we all agree she needs to come. She’s going to come to you today’. Sometimes we do that; we do not actually have the authority to do it, but we do it sometimes when we are getting up to the 30th and 35th phone calls about it. But I think that is one area we really need to improve as a system in how we manage this.

On the importance of confirming a bed, of course, can you imagine if you are in Sandringham and you are 26 weeks, ruptured membranes, preterm labour, but there is a safe window to move you. The next step to get the transfer happening is for Sandringham to ring Ambulance Victoria and say, ‘Can we please have an emergency paramedic resource?’ — 15 minute response time — but you cannot do that unless you have got somewhere to send them. If you are in Warrnambool it is a little bit different, because it is an air ambulance retrieval and we can take a little bit longer there because the air ambulance can be mobilised and we can take some time to negotiate that, but Ambulance are very reluctant, appropriately, to mobilise without a receiving unit. It is a bit different if you have got a baby in Sandringham. It takes NETS usually an hour to mobilise and get out there, and maybe an hour or two to stabilise the patient, so you actually do not need the bed for about 2 hours from the time you decide you need to move the patient. But for these transfers, it delays the activation of the transport if you have not got a receiving unit. There has been a lot of discussion about this and a lot of negotiation about it, but we still have not fixed it.

Just to finish up with four slides, two of which say ‘What works well’ and two which perhaps detail some of our challenges. What works well is that clinicians in Victoria have a single point of access to a specialist. The PIPER neonatologists and obstetricians, most of them have appointments with the other tertiary services, so we are very integrated. We are not isolated. In many ways we are integrated. Many of our nurses and midwives work in the other health services as well. We are very well-connected with the other NICUs. We have a monthly meeting, which is not PIPER-specific, but PIPER is one of the groups that meets with not only the NICUs but also now the level 5s. So northern, Sunshine and Geelong nursing and medical NICU managers join us in that meeting. We now have systematic feedback and data reporting for maternal and to a lesser extent neonatal referrals and transfers. Jacqui looks at and critiques every PERS transfer that happens and writes a little narrative, and it goes back to referring hospitals. The receiving hospitals receive a report. The consultants who triaged the calls get feedback on their own performance. It is a very robust system.

We now have PIPER mortality and morbidity meetings, and we are now more and more looking to organise cross-jurisdictional incident reviews. So if an incident happens at a referring hospital, things may not go to plan. Part of that may involve us, part of it may involve the transport bit with Ambulance. We are now looking to have a process where we can get all parties to the table and do root cause analyses and critical incident reviews so we have got all the information. We can share and get the most robust outcome from that for improving the system.

We have very active neonatal outreach education. PIPER has developed a neonatal resuscitation program. It is highly regarded. Queensland Health and the Tasmanian health department have adopted it as their statewide neonatal resuscitation program. Victoria has not quite done that. We teach a lot of it, but we approach each health service and try and encourage them to take up this program. It would be good to systematise that. There is a new program funded by the health department, a combined maternity and neonatal outreach education, which is working really well. It is around obstetric and neonatal emergencies. Last year we had our first annual neonatal conference, which is between PIPER and the non-tertiary sector, nursing and medical: 120 people —

we hope to get 150 this year — discussing clinical topics of common concern between the two areas. We have excellent communication links with level 3 medical and nursing clinical managers. I have an email distribution list. I can reach every medical director in the state very quickly, and similarly with nursing. And we have regular meetings with Ambulance.

On the ‘Areas for improvement’, I have mentioned delays in bed sourcing. I think we have some system-wide escalation processes, but they do not hold up at 3.00 in the morning when everyone is full and busy. We need to better systematise that. We need perhaps to embed them in health services agreements or have some way of making sure that they stand up when we really need them.

A lot of our referrals come from consultants, but a lot come from trainees, some quite junior, and it does alter the quality of the triage process if we are having more junior people refer to us. When they talk to us, they get a consultant, and we are starting to talk to the sector about encouraging them to think about having consultant-led referrals.

As you have heard, there are some excellent models of regional or subregional networks. We heard about Wangaratta and Wodonga, and I know in the south-west there are also excellent networks down there. But we need to look at what is working well there and again systematise it across the state. You mentioned silos in the last presentation. We still have lots of examples of silos here. Even with adjoining regional services, when they get full and want to transfer out patients that would normally be their capability, they ring us. They do not go to their neighbour and say, ‘We’re really busy today. Can you help us out in the nursery or in the maternity side of things?’. We need to get that working better.

Televideoconferencing has been shown to reduce all sorts of retrievals as well as perinatal transfers. New South Wales have effectively introduced this into every special care nursery in the state and also into emergency departments. It is not that expensive. Televideoconferencing is becoming much easier technically, and I think that is an area for prioritising for the future.

We have a lot of good processes at the moment. I am not sure if you have heard about the capability frameworks for neonatal and maternity. They have brought us a long way towards raising standards of care, but there are opportunities to improve them even further. It is really important to get clinician engagement in the process. There is another process of low acuity intraregional transfers, so a baby, for example, in Echuca who does not need to come to Melbourne can go to Bendigo, for example. We have now put an incubator in Echuca, and Ambulance Victoria help us move those patients, but there are still some teething problems around that process. There are 16 of those incubators around Victoria. We can fix that fairly simply, I think.

We need to develop an audit process to monitor the incidence of outborn, extremely premature babies. I have shown you their mortality — it is double what it is if they are inborn. We need to understand more about how that happens. Some of them come in, deliver very quickly — no option. But we need to be clear on every one that happens that there has been no opportunity for an in utero transfer. As I said, we need to systematise neonatal resuscitation training. I will stop talking there. We welcome any questions.

The CHAIR — Thank you, Michael. Jacqui, are you going to answer some questions for us?

Dr SMITH — Absolutely.

The CHAIR — We would love you to. Are we able to get a copy of that presentation, Michael?

Assoc. Prof. STEWART — You have got it — you have got electronic and you have got hard copies.

The CHAIR — Thank you. We will get it anyway. Thank you for that presentation. You have actually clarified quite a few questions we have had in the regional areas. It looks like there is — to me, in my opinion — some confusion about PIPER’s system and how you prioritise things and your parameters you work within. I might just hand over to Cindy to ask a question and I might ask a question at the end of it has not been answered already.

Ms McLEISH — Thank you very much. This is really great because everywhere we went we would hear about PIPER from one end or the other, and we went to some fairly far-flung places. Well, Bairnsdale — at our hearing in Bairnsdale we had people from Orbost and also the nurse from Swifts Creek as well, so when you hear some of the issues there in Mildura and how much closer it is to Adelaide, it has been good because your

presentation has answered a lot of the questions for us. Can you clarify first of all who can actually call PIPER? Because, Michael, you did mention that sometimes when you get the junior people calling PIPER —

Assoc. Prof. STEWART — Yes, so we are an interhospital transfer service; that is the first thing. So the patients are in hospital. It is very rare that there is a scenario where they call us not from hospital, although we are available to Ambulance Victoria, so if they have a baby born at home or a high-risk pregnant woman and they are called to the home, they can call us. We have a process for that. But in terms of 99 per cent of our calls, they come from the clinicians in the referring hospitals. That can be any level of medical staff; it can be a midwife, it can be a nurse. If it is a call where they are doing an active resuscitation, we do not care who calls us — they just say, ‘We have a baby here, it has collapsed and we need some help’. We do not keep them on the phone getting great detail; we say, ‘Fine’, and we will then look at mobilising a team. We also stay on the phone and provide advice throughout that resuscitation. So it can be any clinician. The more senior, the one who knows the most about it, particularly when it is not clear-cut when you need to transfer, that is when you need a mature discussion with experienced staff. Putting a junior on the phone to discuss something which is very grey and uncertain, at one end you are going to get consultant-level input and at the other end you are not getting an assessment of that input and its relevance to the context necessarily.

Ms McLEISH — Is that something that you can work with the hospitals to address, or is it —

Assoc. Prof. STEWART — Yes, look, we have had people do sabbaticals with us, like a paediatrician from Geelong — we gave him a pager and let him listen to all our calls for a couple of weeks, and at the end of it we had a debriefing about it and he said, ‘Look, I just can’t believe the variation in the calls that you get’, and he went back to his service, and Geelong now pretty much have a consultant call us or they have a consultant with one of their registrars side by side. We are having, I would say, ad hoc discussions, but I think it is close to the point where we are going to have a systematic discussion and say, ‘How about we try this?’.

Ms McLEISH — And what will drive that systematic discussion? How will that happen?

Assoc. Prof. STEWART — Well, the way it would happen in paediatrics is that I would contact the medical directors of the hospitals with public level 2 nurseries around the state and my colleagues in tertiary. So there are 21 public level 2s — so all those regional places, Bendigo, Shepparton et cetera and all the metro ones, Box Hill, Frankston, Sunshine, northern et cetera. I would send out an email and say, ‘Look, this is what we are experiencing. We think we can improve the quality of the calls with an initiative such as this’, and we would get some discussion going and try to engage them in it.

The argument is always, ‘Well, we have got trainees, they have got to have experience’, and I would say, ‘Yes, by all means, but perhaps in the more complex calls let’s not put them in and get their experience that way; they can get it elsewhere’. We would have a discussion and engagement and then we would come to an agreement. On the obstetrics side we have not quite the same contact list, but I think the process could be duplicated that way.

Dr SMITH — I think we have some of the issues, though, because we do not just accept referrals from known maternity units and known maternity providers; we accept referrals from emergency departments and non-designated emergency departments and small rural hospitals — whoever is basically there being presented with the problem. So we may have a nurse in a rural hospital that no longer births babies who is presented with a woman who has walked in off the street with a difficulty and needs a lot of help. You might have a rural GP who is not in obstetric practice who is the duty GP for a hospital that no longer births. You might have someone in an emergency department in a hospital without a maternity service.

Ms McLEISH — Yes, we heard from those people.

Dr SMITH — So we are perhaps looking at a slightly wider group of folks, so it is a little bit harder to say, ‘Use your obstetric consultant or your most senior obstetric care provider’, because in some places there is none.

Ms McLEISH — I think there was a figure of about 478, the number of calls that you get that do not involve a retrieval, that are more for advice. Are those people that ring expecting that they would be a candidate for a retrieval or are they just generally ringing for the advice?

Assoc. Prof. STEWART — They come in three forms. One is, ‘I am just calling to discuss a patient, I do not think the baby needs to be moved’. The second one is, ‘I am just calling because we are not sure about whether we should transfer the baby or not’. The third one is, ‘We are calling and we think the baby needs to be moved’. In a small proportion of the latter after discussion we would come to an agreement that we do not need to move the baby at that point in time. That is how they come about.

Ms EDWARDS — Thank you for coming in today. You showed us a graph with the percentage of survival rates, and I noted that between 2006 and 2014 there was no change in that percentage of survival. I just wondered if you had any updated data that might give us a better idea of what has happened since 2014.

Assoc. Prof. STEWART — Yes, so this data is largely the work of Rose Boland, who was a retrieval nurse with us, now an educator — she went away and did a PhD a few years ago and is still part time with us. Rose has published quite extensively on this and has used the perinatal data collection unit CCOPMM datasets quite extensively to get this information, working with Professor Doyle at the Royal Women’s Hospital. We still have a differential. The latest data is not published; I know Rose is in the process of getting it. It is still being cleaned and analysed, but there is still a significant difference in outborn and inborn survival.

Where we have made some inroads is that this graph showed 23 to 27 weeks, so the extreme end of prematurity. We are now seeing between 28 and 31 weeks the gap is virtually gone. That is a combination of sometimes, if it is not safe to move the mother, the neonatal retrieval team goes out and helps resuscitate and stabilise the baby, so you get more resources there, and probably they are also working with our paediatricians and nurses around the state to improve resuscitation of smaller babies. The support they get while we are coming out to help them is probably more than what it used to be as well, so I think there are probably a number of factors.

So we are making inroads in the bigger, the mid-range premature baby. These little ones are terribly unforgiving. They are very, very prone to cold stress. With an adult who needs resuscitation, anyone in the state can get IV access and usually intubate them and put them on a breathing machine. For a small baby, even very experienced people have trouble getting intravenous access and putting them on life support, so they are a challenge. That is why it is so difficult.

Ms EDWARDS — So the survival rate for older early babies is increased?

Assoc. Prof. STEWART — No difference between inborn and outborn once you get above 28.

Ms EDWARDS — Yes. Is there an increase in early term babies being born?

Assoc. Prof. STEWART — Yes. We call them the late pre-termers.

Ms EDWARDS — Yes, but is there an actual overall increase in the number of women going into labour earlier?

Assoc. Prof. STEWART — Yes. So I think that area around 34 to 36 weeks, which we call ‘late pre-term’ — there is a whole lot of literature coming out on that now. There are increased numbers, and we are recognising that there is a morbidity in the babies. These births are brought forward often because of concern about the fetal wellbeing or the maternal wellbeing. Once you get beyond 32 weeks most of us are very relaxed because the mortality is so low. So you think, ‘The baby is better out than in’, either on maternal grounds or fetal grounds.

As those numbers are going up and as we are systematically following this group of patients, we are seeing those children actually are not coming through unscathed. There is an increased incidence of mild to moderate neuro disability, for example, in some of those survivors. Jeanie Cheong at the Royal Women’s Hospital has reported on this internationally from their experience at the Royal Women’s.

Ms EDWARDS — So that would comply with what we have heard previously about high-risk pregnancies and greater intervention.

Assoc. Prof. STEWART — Yes. I think it is probably time for a rethink about the balancing, because it is always a balancing act between the risk to the mother or fetus of not delivering at that point in time and the risk to the baby once they are born a little bit preterm.

Ms EDWARDS — Thank you. You mentioned the constraints around the workforce particularly trained in resuscitation — people who are trained in the resuscitation of babies. I just wondered if perhaps you could talk to the other workforce capacity constraints that you know about. We have certainly heard about the shortage of midwives who are trained NICU specialists. Also, I was wondering if you have staff who are trained in working with and engaging with Aboriginal and Torres Strait Islander families.

Assoc. Prof. STEWART — Okay, so the last point first: the maternity and newborn joint education program that has been in operation for the last couple of years, called the MANE program, where we go out with our maternity educators is based at the Royal Women's Hospital and funded by DHHS. Its mandate is to visit every level 2 to 4 maternity service in the state at least once every three years. We deliver a two-day program on obstetric emergencies and neonatal emergencies. The maternity education group at the Royal Women's have developed a culturally sensitive program for Aboriginal women and that is run in collaboration with some of the Aboriginal health services in the state. They run several of those each year where they are modified to take account of the culturally sensitive elements.

Within our retrieval service we have also had that team visit us and talk to us about some of the culturally sensitive issues that we were actually, quite frankly, unaware of. When you are out there, and usually in the high-acuity resuscitation environment, you are focused very much on the medical-clinical task that you have got to do, but it was a revelation to understand how this is seen from our Aboriginal friends' perspective — the mother's perspective and family's perspective.

Dr SMITH — Could I just add something? One of the difficulties that we have because of the lack of integration of regional services is that women are sometimes transferred from one rural area across the state to a completely different part of the state. For many of our Indigenous women this is a major offence to their sense of country. They are very much separated from other women of their own community, if they are unable to get into their local regional hospital at which they would already be out of country but accessible. For example, someone from Swan Hill who ends up at Frankston is going to be very isolated. I cannot give you hard data on it, but experientially a lot of these women do actually discharge themselves from hospital very soon after.

The other thing to be remembered — and again, it is one of the consequences of lack of continuity of care, because of the difficulty in bed finding — is that women do not often have just one presentation with an obstetric problem. We have women who have repeated episodes of bleeding or they might have repeated episodes of threatened preterm labour which are successfully inhibited until the final episode when they birth. These women may be transferred to three different tertiary maternity hospitals and then, as the gestation increases, their last transfer may be to another non-tertiary hospital — and again, not their regional hospital. So this disruption of care is a major upset for folks, not just for Indigenous women but for any women.

The moving from rural areas is very problematic, particularly for families on the land and particularly if they have got livestock. In a dairying family the father cannot come down to town, which means the woman is isolated from her partner, often from her mother and there are difficulties with the children in getting them to school and getting them cared for. We are not respecting people's need to be cared for within their own area, because we are being knocked back repeatedly on bed access as we go through our multiple phone calls. There is not the sense of responsibility for the women who have complications within their area for the mid-range hospitals particularly.

The CHAIR — Understood. And the second part of the question?

Assoc. Prof. STEWART — Workforce? Yes, look, I am probably not qualified to talk about the midwifery workforce. There are people with much better knowledge than I have, but yes, it is an issue. Certainly on the neonatal side I think Victoria has been slow to embrace nurse practitioners as a whole but also neonatal nurse practitioners. That is starting to change, and we have got a group at the moment between the four tertiaries looking at a neonatal nurse practitioner training program.

At PIPER we have now got two neonatal retrieval nurse practitioners who are really doing everything that our doctors do. They are the first in Australia who are full-time in retrieval and they are fantastic. So nurse practitioners — advanced practice nurses — is an option we should be looking at, particularly on the neonatal side. As to rural services, I know Bendigo are very keen to solve their workforce problem on the junior medical side by considering nurse practitioners to work in their nursery and their children's ward, for example. I think that is a really interesting model that we should explore.

Ms BRITNELL — Firstly, congratulations on the work you are doing at PIPER. I remember quite clearly the days of NETS and ringing around and babies having to be found beds. It has improved markedly over the last many, many years, but I was surprised to hear that still 30 to 35 phone calls are having to be made sometimes. I am wondering about the supply and demand issue. How many more beds are needed for that supply and, given that there is going to be increased growth in Victoria, is the research done on looking at the data of beds required?

Assoc. Prof. STEWART — It has been. I have sat through at least three neonatal and maternity service planning episodes in the last 18 years. I thought there was another one that was completed about a year or so ago with the health department; I have not seen that published. Those processes do try and look at birth projections. You are probably all well aware that we did not get that right in the mid-2000s and we got caught out with inadequate numbers of certainly neonatal intensive care beds. So they do take account of those numbers; it is obviously an inexact science.

There are some really robust techniques for calculating how often your special care nurseries and neonatal intensive care nurseries will be at capacity — how often you will not be able to take a back transfer or have to overflow transfer out a patient because of capacity. There are some really robust mathematical models to help that which we did apply in the review before last, about seven or eight years ago, and I think those models should be looked at.

Now, at the moment, as you have heard, we have probably got adequate level 6 NICU cots in the state. We have revamped the definition of NICU because management has changed over time and we have now actually simplified the care of a lot of babies who previously used to be called ‘intensive care’. That is critical for nursing because intensive care is one-to-one and high dependency is one-to-two. I think, when we have been looking at this recently, no hospital has hit 100 per cent occupancy of level 6 babies since we changed the definition in June last year, but the nurseries are still almost fully occupied most of the time. So we do need to think for the tertiary part of it that they do need some additional neonatal capacity to look after these still complex but not intensive care patient populations.

The birth suites are the other area where we get pushback now because they are all occupied, so that is another reason why bed finding is difficult. Patient flow through birth suites is not my area — Jacqui will comment — and there are differences of opinion about how that should be managed. But most I think would say that they need more capacity there, and certainly the regional ones do. Bendigo was a good example before they opened their new hospital; they often had constraints of being able to take patients in because of their birth suite occupancy.

Ms BRITNELL — We heard throughout the inquiry some challenges around compatibility or IT systems being able to interact with each other within the hospital, particularly in maternity settings where you have got your fetal monitoring system that does not speak to the system that is within the ward itself, with the consultants as well having another system. Is there an opportunity, with this system that you operate with PIPER, of interacting with hospitals so that there are less phone calls? I imagine as a doctor you are not an information technologist professionally. Is that a role that should be looked at so we can streamline things and take away some of that manual work?

Assoc. Prof. STEWART — Back in 2000 I became director of NETS. Soon after that with the health department we put in place a web-based bed system so we could look at bed occupancy, and with that we agreed how many NICU cots each of the hospitals would make available. Before that it was not agreed, so we said, ‘Okay, the Women’s, you have 14 and we can see you have got 12 occupied, and if the others are all at their peak, that is where the next baby should go’, for example. We hoped that transparency would help. What happened was that everyone was over 100 per cent occupied a lot of the time so it did not help. It gave us a guide. It also helped everyone in the system to see that everyone else was working hard, so they did not say, ‘Oh, try the place down the road’, because they knew they were all working hard. So it helped a bit with transparency of the system, but basically we were still operating with very high occupancy and there was more demand coming in. I am not joking. It can take 35 or 40 phone calls at 3 in the morning before we negotiate a solution. That would be a number of times a year — certainly not every week.

Ms BRITNELL — So the system did not work and the modern technologies we have available, ever changing, will not ever solve this?

Assoc. Prof. STEWART — No, I think what needs to work is an escalation process. Some of the processes are agreed, but understandably when an individual health service are full, they say no. As you heard, we have had people in central Victoria end up at Frankston with relatively low acuity pregnancies because they have bypassed eight special care nurseries on the way.

Dr SMITH — Maternity capacity is a different issue again because it is not just about birthing suite capacity, it is about the inpatient capacity, and there is a bit of flexibility. Transfers are sometimes requested to a tertiary inpatient bed because of lack of access to a timely maternal-fetal medicine consult or a high-end scan in an outer suburban or regional area, particularly in the regional areas. That is an issue, and women sometimes stay in inpatient beds in any hospital because of lack of domiciliary services. There are many circumstances where a woman post-birth could be very adequately cared for at home but with domiciliary nursing possibly better cared for home. But because of the limitations of access to domiciliary services they are sitting in an inpatient bed, and therefore blocking access to the next person who needs the inpatient bed. Certainly the services for consultations with somebody with high-end obstetric skills and procedural skills like tertiary ultrasound, once you get out of the three or four tertiary centres, is very limited.

Mr FINN — One of the benefits of coming at the end of the questions is that most of them have already been answered. So I only have one, and that is to perhaps expand a little bit on your involvement in homebirths. There would appear to be certain risks involved in homebirths, and I know this is a touchy subject. Do you find that that is a major issue from your perspective?

Assoc. Prof. STEWART — Well, if I can talk about it from the neonatal perspective first, we are an inter-hospital transport service so we do not have a role in homebirths, for example, where a baby might be born in need of resuscitation. That is Ambulance Victoria's remit, and we work with Ambulance Victoria to help write their clinical practice guidelines around neonatal resuscitation and acute maternity care in that space, and they also have direct access to us in that area.

Mr FINN — Should that come within your responsibilities, do you think?

Assoc. Prof. STEWART — No. Jacqui might like to comment. If I can just say: I am a neonatologist, not an obstetrician, but I have friends who are midwives in England who work in homebirth scenarios which have been enormously successful and work incredibly well. We are a long way behind that in Victoria. They are well-organised homebirth programs; they are safe, they are effective. The thing about obstetrics of course — and we see this — is even in our low-level maternity services where they are really good at risk stratification and try and pick the low-risk women to birth in those services, things can go wrong very quickly. That is what makes me nervous as a neonatologist — that I am going to get landed in this. But we do have a lot of experience from other jurisdictions to say it seems to work safely.

Dr SMITH — Professor Wallace and I ran the two pilot homebirth services. I ran the one at Western and he was running the one out of Monash. I think in terms of providing obstetric support for homebirth midwives, at the moment the arrangements the public homebirth midwives are linked into a specific service and have a close working relationship. I do not think there is any reason for us to insert ourselves into that system.

That being said, if there is an emergency and an ambulance comes to the house we are quite happy to take a consult from the ambulance clinician and whoever else is put on the phone. I would not have any difficulties with that. It is quite safe for women having their second or third baby who have had a previous straightforward birth to birth at home, providing they are close to a hospital where they can be removed if there is any difficulty and they accept that it is not a zero risk situation; it is a low risk but not a zero risk situation. But it brings a whole lot of other personal benefits for them. If there was a way in which we could support it more, I would have no objections to it. But I think we are unnecessarily inserting ourselves into a relationship that does not really need to be disturbed.

Dr CARLING-JENKINS — Thank you very much for coming in today. I found it very interesting the way you have spoken about not just siloed approaches but ad hoc, so you have pointed out a few areas that have been ad hoc here, like education. That is something we need to keep in mind when we write our reports, so thank you for pointing that out. I have a couple of very quick questions. You mentioned the academic research undertaken by Rose. Can you give me her last name so that I could look that up?

Assoc. Prof. STEWART — Yes, Rose Boland.

Dr CARLING-JENKINS — Boland? Thank you. Beautiful. I will look up some of those articles.

Assoc. Prof. STEWART — She would happily give you her CV and bibliography if you would like that.

Dr CARLING-JENKINS — I would love that.

Assoc. Prof. STEWART — We will send that to you.

Dr CARLING-JENKINS — That would be fantastic. Thank you very much. What are your staffing levels? What is your EFT equivalent?

Assoc. Prof. STEWART — Within PIPER?

Dr CARLING-JENKINS — Yes.

Assoc. Prof. STEWART — Okay. It is a complicated question.

Dr CARLING-JENKINS — I am sure it is — working 24/7 and having lots of part-time, I am sure it is.

Assoc. Prof. STEWART — Yes. All of the people who provide our after-hours consultant cover — obstetricians and neonatologists — have not got any EFT because it is like they are on call without EFT. We have 7.5 EFT of junior medical staff to go out on neonatal retrievals. We have a similar number for paediatric retrievals. We have about 12 to 14 EFT of neonatal retrieval nurses and six EFT of paediatric retrieval nurses. We have a couple of EFT of admin. Jacqui is 0.4 EFT to run the PERS service. I am one EFT as director, and I have 1.3 EFT of neonatal consultants to do the Monday to Friday triaging of the service. Now we have got paediatrics more involved probably we are getting up around the 60 mark and an EFT of something below that because we have got a degree of part-time. We have got four part-time neonatal educators as well. So we are probably about — I do not know — 50 EFT in a headcount of just over 60 at the moment.

Dr CARLING-JENKINS — Okay. Excellent. That just gives us an idea of the scope of the service, so thank you for that. Obviously everyone would always prefer a little bit more as well. That sounds like a very complicated service to be coordinating. Just one last question, and it is a follow-up from the questions from Roma. We are hearing so much about the lack of resourcing and bed finding and what is needed et cetera, and you talked about NICU at capacity previously. Has the extension of the fifth level services, like in Sunshine, helped to relieve that or do you need more of it?

Assoc. Prof. STEWART — It will help both on the obstetric and the neonatal side because Sunshine's, Northern's and Geelong's gestational age cut-off now is down to 31 weeks. So if we have a woman referred from Colac at 31 weeks or 32 weeks, they could certainly comfortably go to Geelong mainly. For neonates, because they are better staffed overall with neonatal specialists, they can better look after a more complicated, even 33, 34, 35-weeker. So we will not put a lot of 31-week gestation outborn babies in Sunshine, or Geelong for that matter, but it has improved their capability to look after more complex, more mature babies. So, yes, it is definitely helping.

Dr CARLING-JENKINS — That has helped to relieve the system.

Assoc. Prof. STEWART — Absolutely, and our challenge is to make sure that we do not simplify the capability of those hospitals and say, 'Well, all these babies sitting in tertiary hospitals without an endotracheal tube, not on a ventilator, they all must be okay to go to one of those hospitals', because there is a difference in the group of babies who largely occupy NICU hospitals who are not actually NICU acuity and those who are sitting in non-tertiary hospitals. That is something that a lot of people grapple with. They just think, 'We can fix the Royal Women's problem by moving all of those babies not on ventilators to Sunshine or somewhere'. That is a highly simplistic generalisation.

The CHAIR — I just have one question, bearing in mind that we are a little bit over time. We have heard a lot about the use of videoconferencing. In a day and age where we have kids flying drones and people with Apple watches telling them when they need to stand up and breathe, what is the hold up? It obviously increases efficiency. In an emergency situation you get a consult from someone who actually knows what they are talking about, who can see symptoms of the patient and what not. Is it lack of funding? Is it lack of people who are open to new technology? Can you tell us the solution to that in 30 seconds?

Assoc. Prof. STEWART — It will be multifactorial of course. I think in Victoria we have not had a systematic approach to televideoconferencing, whether it is the neonatal, perinatal or any other area, so regions have gone and solved their own problems. Now that the technology is getting more generic, I think the technical solutions are more evident and more cost-effective, but the basic issue is that like many things we have devolved governance and other things and this is just another one of them. So I think New South Wales rolled it out to all of their hospitals. It cost them about \$8 million. Half came from philanthropy. It is actually fantastic. We just really need an impetus to get on with it. That will come from the sector and we will look to engage DHHS in that discussion.

The CHAIR — All right. Unless there are any other questions, I thank Michael and Jacqui for coming in today. We ran a little bit over time — I kind of assumed we would — but thank you for clarifying so much of what we have previously learned as well. Thank you so much.

Dr CARLING-JENKINS — Thank you very much for your time.

Dr SMITH — Thank you.

Assoc. Prof. STEWART — Thanks for the invitation.

Witnesses withdrew.