Trauma Exchange: interview with Professor Belinda Gabbe

Transcript

Carl Shuker:

Kia ora and welcome to Trauma Exchange, a series of conversations which explore the world of serious injury in New Zealand. My name is Carl Shuker and it's a privilege to host these discussions on behalf of the National Trauma Network and its partner organisation, Te Tāhū Hauora Health Quality & Safety Commission.

Contemporary trauma systems are not just about providing state of the art care that provides value for money, but also about designing models of care and treatment using a combination of evidence from both quality improvement methods and from scientific research.

I'm Carl Shuker and in this episode, I'll be talking to Professor Belinda Gabbe about her world leading research on serious injury. Belinda is the head of the pre-hospital emergency and trauma research unit at Monash University in Victoria and is research lead for the National Trauma Network in New Zealand.

Kia ora Belinda, thank you for joining us from Melbourne.

Professor Belinda Gabbe:

Thanks so much for having me.

Carl:

So, Belinda can you tell us a little bit about what emergency trauma research involves?

Prof Gabbe:

So, it's a pretty diverse area really. It's really, as you've mentioned, talking about how we deliver trauma care, but it's really about understanding who our trauma patients are. So the epidemiology, a word that became very much in people's minds during the pandemic. But understanding who our patients are, how they're being injured, why they're being injured, but also understanding the care and the outcomes… the care that they receive and the outcomes that they receive. And also, the research focuses on actually improving that care and outcome so that people can get the best possible outcomes from their injuries.

Carl:

That's awesome. And you've also written papers which show the benefit of an organised trauma system on patient outcomes. Can you tell us a little bit about that work?

Prof Gabbe:

Yes, of course. In Victoria, in Australia, in the early 2000s, we rolled out a new trauma system. And that trauma system was really about bypassing smaller hospitals for the very seriously injured and actually transporting them, preferentially transporting them, to these one-stop shops, these major trauma services. And this is a model that's being used around the world. But most of the evidence had actually come from North America. And most of the evidence had actually focused only on the survival of patients and not necessarily on the quality of the survival of patients as well.

So, in a series of papers and following the introduction of our new trauma system, we were able to actually show that the introduction of the trauma system meant that more patients

were receiving their care at these specialist trauma centres, and that had a significant survival benefit.

But we were also able to show, because we follow up our patients after their injuries to see how well they recover, we were also able to show that care at those major trauma centres actually resulted in better functional outcomes for patients as well. So, they're not only more likely to survive, but they were actually more likely to have a better functional outcome.

And then on the other side of that, we also looked at what the impact had been on the costs of trauma. And here we're talking about converting disability adjusted life years or measures of mortality and morbidity into a cost amount. And we were able to show that the introduction of the trauma system was actually associated with a significant cost benefit, in that people were more likely to survive and therefore the costs of those deaths was lower, but also because patients were having better functional outcomes as well.

So, we could see that we were, that translated into a lower burden or a lower cost to society as well.

Carl:

That's fantastic. And as a result of that research, were there practical changes, real world changes in systems in Australia and New Zealand that followed on?

Prof Gabbe:

Yeah, I think it really has. I mean, as I said, it was the first real evidence that had come from anywhere other than North America. And as you know, as many will know, the health care system in North America is actually profoundly different to Australia and to New Zealand and to other places in the world.

And the data that we generated and the research that we generated was actually used to implement trauma systems in similar trauma systems in the United Kingdom, particularly in England… and also in England and Wales, I should say, but also in New Zealand as well. So really it was what it was saying is that these inclusive trauma systems, these trauma systems that preferentially bring patients through to these specialist centres is actually should be the standard of care and should be used around the world. And we've been seeing them rolled out pretty much across the world now.

Carl:

Belinda, you mentioned functional outcomes. What does functional outcomes mean and how would you measure those?

Prof Gabbe:

It’s broad term and there are multiple ways that functional outcomes can be measured. But here we're talking about the things that are pretty important to people, which are things like whether they've been able to go back to work, how they're getting around the community, can they do activities of daily life like washing themselves, cooking their food, going and doing their shopping, interacting with friends, doing all of their recreational and sort of social activities. So functional outcome has that very wide perspective.

In the studies that we've done, we've often used something called an extended Glasgow outcome scale, which really is a measure of the degree in which the issues related to injury are actually impacting on their outcomes. And so we can get an actual sort of score that tells

us whether people are living independently, whether they're needing services or supports, or whether they've actually made a full recovery and they're actually having absolutely no issues related to their injury.

But there are other measures out there and we do other measures of health-related quality of life and those types of things as well, but it's a pretty broad term and there are lots of ways to measure it.

Carl:

So, this is a slightly odd question, but it's certainly true in quality improvement that sometimes we learn more from what has failed than what works. And I'd be interested in your reflections on any research that hasn't worked out and that has led you into, perhaps, new and more fruitful places.

Prof Gabbe:

Yeah, in the last probably 20 years, a lot of my work, I'm a physiotherapist by background. So, my interest is really how well people recover from their injuries, so I'm very interested in the allied health care we give to our patients. I'm very interested in the follow-up that we give to our patients as well to really maximise their chances of a good recovery.

And we'd been doing quite a lot of research that had been saying that when people leave the major trauma centres or major trauma services, it's like falling off a cliff. There's this disconnect between the care that they receive in the trauma centre and then what happens out in the community. And so, we used that information to develop a new role at the trauma centres called major trauma recovery coordinators.

And we undertook a study where we implemented them at a big trauma centre, over a period of time, to see whether these major trauma recovery coordinators who are really responsible for following up the patients once they've left, troubleshooting any issues that they were having, making sure all their services were in place before they left the hospital, organising their outpatient appointments to be really streamlined, would actually improve patient outcomes over time.

And what we found was that, even though we'd really prepared well for the study, we actually probably didn't do it in the best possible way. And we actually didn't really find a benefit from those roles. So what we actually found was that the number of trauma patients that were coming into the hospital was going up far too quickly. And there weren't enough of these major trauma recovery coordinators to actually see everybody. So, what they were having to do was actually see the patients that they felt would have the biggest need. And obviously they were the people that would be at more risk of a poorer outcome.

So, because we couldn't actually have major trauma recovery coordinators actually interacting with every patient, we probably missed an opportunity to see what the real impact would be. But what we did get was a lot of information back from patients to say that they really valued the role and the aspects of the role that they really valued and their experiences.

And what we were able to do was actually turn that into a new approach, which was really more around redesigning allied health care in the major trauma centre to be multidisciplinary, seven days a week and really intensive to try and give people the best start to their rehabilitation and the best opportunity to return home quickly and to recover quickly.

And we completed that work and actually published it recently and we were able to show that new allied health model of care was actually… actually improved patient outcomes, it shortened their length of stay and it was shown to be extremely cost effective and has now become the standard of care. So out of failure came success. And what's really important about that is it's success for the patients. So we were really happy about that.

But that first one was really disappointing, but you've got to take the information that you get and turn it into whatever you can really.

And all research is an opportunity to learn.

Carl:

Congratulations, that's amazing. It sort of speaks to that idea, I think it was Solberg wrote about differences between evidence for research and evidence for quality improvement, having slightly different approaches sometimes.

Prof Gabbe:

Yeah, that's true. And every question that you ask requires a slightly different approach or to tackle it in a different way, or you set out to do something, but you learn you've got to be adaptive. You've got to have that sort of flexibility to actually adapt to what you're doing along the way when more information actually comes in.

So, it's a constant learning curve, really. You never stop learning in trauma research, that's for sure.

Carl:

So, this sort of brings me to my next question. Perhaps from the outside, that research is often seen as the domain of academics, and you've talked about your background. But trauma clinicians can get involved in research too. And can you talk to us about how they can do that?

Prof Gabbe:

Trauma clinicians and the input into research is absolutely fundamental. It's critical to all the work that I do. We would never undertake a project in trauma research without involvement from clinicians, and that level of involvement can vary substantially.

So, it could be providing advice, or they'll often bring a question to us that they've got from their clinical practice that they would like to answer.

Clinicians can get involved in leading projects and a lot of the researchers will provide methodological support, so our job is to help them design the research and make sure that it's scientifically sound but ultimately, it'll be the clinicians that are actually implementing that research.

And then there's all the way through to doing, you know, honours degrees, master's degrees, PhDs and the like.

And we've got a lot of clinicians that are running full programmes of research themselves from within their health care services. And our job really is to provide the data and the support to that as well.

And often the pieces that they're missing can be around the study design and really making sure that it's really, really sound. But also, it's really in providing the data that will actually

help them get the project off the ground and also providing things like biostatistical support, which is a specialty area of all of its own.

But from our point of view, the involvement of clinicians is absolutely critical. It's, they have an incredible understanding of what's going on out there. They're interacting with patients all the time. They're interacting with the trauma system all the time. And they also help to understand, you know, they really help us to understand what these findings mean and how they could actually be used to implement change for the better.

Carl:

That's wonderful. Can you talk to us maybe a little bit about your hopes for the future or your plans, ambitions for the future of the Trauma Network and the research you're doing?

Prof Gabbe:

The Trauma Network, I mean, New Zealand is really coming along in leaps and bounds. It's been an outstanding investment from New Zealand into improved health care and improved trauma care for patients.

From my perspective, as I said, I always really come from that side, which is really looking at patient recovery and patient outcomes. And I think that the case studies and the collectives that have been done in rehabilitation have really gathered an enormous amount of information and provided some real guidance for New Zealand about rehabilitation for trauma patients.

I think the data linkage capability that New Zealand actually has is world class and there's a lot to be gained from the linkage of health data and ACC data and social data as well to understand how well patients in New Zealand actually recover from injury and where the touch points along their recovery are that we could intervene to actually improve things even further.

And also the collection of the long-term outcomes, it would be really wonderful to see that continuing because most of our patients actually survive their injuries and, as I said, the quality of survival for them is paramount and it's very hard to have evidence to improve things if you don't have the data behind you to actually do that.

So, I see there are you know an enormous number of initiatives and possibilities in the New Zealand Trauma Network to actually improve outcomes for patients.

Carl:

Well Belinda, it's been a pleasure to talk with you today and thank you for joining us.

If you'd like to learn more about the trauma research programme in New Zealand, Australia or across the world, feel free to explore the National Trauma Network and Tāhū Hauora Health Quality & Safety Commission websites: www.majortrauma.nz or www.hqsc.govt.nz.

Thank you to Belinda Gabbe for joining us today and thank you for joining us.

Mā te wā.