HealthManagement
Promoting Management and Leadership

Volume 16 - Issue 2, 2016 - Cover Story

Designing a Specialist Cardiologist Service for Rural Australia

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Heart disease is the leading cause of death in Australia. However, people living in rural and remote Australia are 44 percent more likely to die of heart disease than people living in urban areas. (Australian Bureau of Statistics 2011). Brisbane cardiologist, Rolf Gomes, decided to do something about this disparity by equipping a mobile cardiac service to tour rural Queensland. From idea to reality took around six years, and the Heart of Australia service has been running successfully for 18 months. The mobile clinic, which is wheelchair-accessible and air-conditioned, includes two private clinic rooms, a testing room and a reception area for patients. *HealthManagement.org* spoke to Dr. Gomes to find out more.

What prompted you to bring specialist cardiology services to rural Queensland?

Prior to doing medicine, I was an electrical engineer. Engineers recognise how combining a solution in one discipline with the problem in another can achieve an outcome. I thought with miniaturisation of technology and Internet connectivity, perhaps we could mobilise not just the specialist in the flesh but the technology that reflects the day-to-day practice of modern medicine out into some of these remote areas where these services are lacking. After finishing my cardiology training, I established my private practice in Brisbane, Medi Hearts. But every time I walked into my practice, I thought: “Why can’t we just take this equipment, encapsulate it into a mobile entity of some sort and deliver these services to the doorstep of communities where these services are non-existent?”

In Australia distances are vast and can be a burden for patients, who are generally elderly. Some of them can’t afford the costs of travel and accommodation, some have timeconsuming professions like farming or they have caring responsibilities. For a multitude of reasons there are barriers to patients discussing their symptoms with their general practitioner (GP). Often GPs operate with a certain degree of anxiety, because they know that they are dealing with patients and symptoms that they perhaps cannot refer for further investigation and should, because of resistance from patients to travel and the associated costs.

My journey with the Heart of Australia programme began about six years ago when I wrote to 181 GPs in rural Queensland and asked four questions: 1) How many patients do you currently see a month with cardiac symptoms? 2) What percent of these patients is indigenous? 3) How many patients do you currently refer? 4) If you had a service like this at your doorstep how many would you then refer? It became fairly obvious that there is a gap in referral, simply due to access to services.

What gave you the idea of a mobile clinic?

Personally, I don’t want to travel a thousand kilometres with just a stethoscope and say to a patient that they might have heart disease and now have to travel 1000km to the city to have a stress test. It is almost like a painter turning up to your house without a paintbrush. In the mobile clinic we have ultrasound machines, treadmills, heart rhythm monitoring devices, equipment which can do full lung function testing and even overnight sleep apnoea testing. We are not just bringing the specialist expertise, we are bringing transportable health infrastructure to these communities.

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Some of our IT infrastructure has been specifically designed with enough redundancy and enough telecommunications inside to allow it to operate in these conditions. Most of the equipment is the same as you would find in a city practice. Having the non-invasive diagnostic equipment available makes an enormous difference. We can reassure patients that their heart is probably fine and thus support the health practitioners in these communities. If after preliminary investigations performed on the truck patients need more advanced imaging, such as MRI or CT or an angiogram, then their threshold for travel is much lower, compared to if they have pain in the chest and have to travel 1000km there and 1000km back to find out if it's the heart or reflux.

What were the main challenges in setting up the Heart of Australia service?

The first one was to find the workforce. I spoke to my colleagues in one of the largest private cardiologist groups in Queensland and asked them if they would be prepared to man the roster, if I funded this service, built the truck and found the supporting staff. I had some agreements in writing from that group, then for about two and a half years after that it was a lot of very hard work to find some likeminded organisations to sponsor the process.

How did your engineering background inform the development of the Heart of Australia service? How is it innovative?

Engineers always have to find a way to convert an idea into reality. In this case it was not a problem with a lack of the medicine, it was about finding a mechanism to bring what currently exists out into these regional areas. The more I thought about it, I thought there is no real reason why we can't do this. A lot of the initial objections to the idea were based on conjecture, not fact. For example, there were concerns that patients wouldn't turn up to a truck, and some questioned whether the specialists would continue to be interested.

There is technology innovation and the service delivery model is innovative. What is lacking is an organisational framework. In Australia we have the Royal Flying Doctor service, which is a nationwide aeromedical service delivering primary healthcare and emergency services in regional areas. But there is no unifying body for delivering specialist services to regional areas. The real innovation will be to take extra time, money and effort to form such an organisation for delivering specialist services sustainably. That is my vision. We would like to see Heart of Australia evolve into the land-based equivalent of the Flying Doctors, to deliver specialists into the future. This will enable specialists to participate in rural services without feeling like they are taking on the commitment and logistical burden of setting things up for themselves and also the psychological burden of letting the whole community down if they couldn't continue.

In our 18 months of operation, we have provided a cardiology service to 12 remote communities across Queensland. Some of these places had been struggling to find even a GP. Now we provide a cardiologist in person every month and we have a state-of-the-art cardiac and respiratory clinic every fortnight. Other parts of Australia are interested in replicating the service.

Why is the public health service not providing this facility?

Government has a responsibility to provide essential health infrastructure to these regions. I don't think what we are providing is a luxury. People out in rural and remote areas are getting older, and everyone's got a heart! In the past there may have been a lack of options in terms of bringing specialists out there in a sustainable fashion, but now we have a programme which is up and running and delivering solid health, social and economic benefits for patients, communities and government. We are hoping we can partner with government to assist with the sustainable delivery of healthcare out in these areas.

What do patients have to pay to use the service?

It is more benevolent than my private city practice. Some of these areas have quite polarised socioeconomic demographics. You can't really bring this service into a small community and exclude a part of the population simply because they can't afford to pay. We try to balance altriusm with pragmatism, and ask the GPs to let us know the patient's situation on the referral form. Our costs are above and beyond a normal medical practice – tyres, truck driver wages, for example. We are very fortunate with our sponsors. The game changer for us would be if government decides to play a role in funding our service. That would give us medium-term security and allow us to plan for expanding the service to other regions and expanding the benefits to other populations with similar needs.

What data are you collecting about the service that will assist in making your case for government funding?

We collect as much data as we can with the limited resources we have. We get 400 new patients referred every three months, we have seen over 2,000 patients since the service was set up and we are getting busier and busier. We are at saturation point with one unit. We would like government to support us in expanding our service to two trucks to provide a service to the whole of Queensland.

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In the first six months of operation I was visiting three communities, and I referred nine patients for open heart surgery. That's a fairly high pickup rate for a significant pathology. These were patients who if they hadn't had that operation would probably be dead. Most of those patients would have never seen a cardiologist and they weren't experiencing such acute symptoms that they needed to be flown out. In the last 12 to 18 months, we have seen around 70 patients who are alive now who otherwise might have been dead. This doesn't include all those patients with cardiac conditions who require a regular follow up. Now instead of travelling thousands of kilometres for a fifteen-minute consultation with a cardiologist in the city they come and see us.

What are the critical success factors for the service?

We had a very clear idea from a management perspective of what we were trying to achieve. We try and see as many patients as we can, and about 92 percent of our patients attend, which makes a very low "no show" rate. To be successful you need a very committed team that is attached to the programme. The whole purpose of what we are doing in these areas has to resonate very deeply, because it does require a lot of work. Having the support at grassroots levels—from GPs, councils, patients and local businesses—is absolutely critical to being successful. All our patients are referred by GPs, so we need to really understand what the needs of those GPs are and deliver a first-class service that they find useful. Financially there are a lot of expenses, but there is no wastage. The question we hear more and more frequently is why isn't the government supporting you? This is now a pseudo public service. In the communities we visit a lot of our referrals are coming from patients who began their health cardiac journey by presenting to a public hospital. We are now supporting those regional public hospitals by seeing their patients, who prefer to come to us than join a long waiting list to see a cardiologist or be referred to a tertiary centre.

What have been the lessons learned?

The main lesson is that you don't know what the burden of the disease or demand for services are going to be until you get out there. For example, Charleville never had a cardiologist. Yet now our clinic in Charleville is booked two months in advance, because we have patients who don't want to travel for follow up, and GPs send us patients with chest pains — in the past they didn't know where to send these patients. We have discovered some technological aspects along the way to do with internet bandwidth capacity. And I've had to learn about things I previously had no idea about, such as transport, main road guidelines, driving safety and fatigue management. I've had to learn all the intellectual property associated with this programme.

In healthcare this is what heath innovation looks like. This is an example of an interesting model of care, which is delivering solid outcomes. In terms of the burden of chronic disease and an ageing population, how you are going to look after these people in the future, unless you find models of care that have the potential to save you money?

How do you divide your time between your private practice in Brisbane and the Heart of Australia service?

I also have three young children, so balancing 'Dad' time with private practice time and then running a statewide mobile cardiac service is not easy. I am very efficient and have a lot of capacity for hard work. I also have a very supportive team. You need to delegate some of the responsibility to the team, and if the programme grows as I anticipate, more will need to be delegated.

Published on : Fri, 1 Jul 2016

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