



Simbani Integrated Research  
Telehealth, Digital Access, Innovative Remote  
Strategy Solutions and Service Development



## **Digital Health for the Bush (DH4B) Forum - Friday December 4<sup>th</sup>, 2020 Summary Report – Draft only**

*Simbani Integrated Research, Asia Pacific College of Business and Law, Charles Darwin University and the organisers of Broadband for the Bush.*

The COVID-19 Pandemic has been a disruptor forcing clinicians and patients to embrace telehealth. Telehealth via video conferencing provides the consulting clinician a more informed assessment of the patient rather than consultations via phone. Currently only a small proportion of GPs are using video conferencing for telehealth. This has prompted many to ask how can we increase the use of video conferencing in Telehealth in rural, regional and remote (RRR) areas?

In looking to work toward an answer, the DH4B forum will follow on from last year's DH4B forum and its exploration into the current barriers and enablers to telehealth via video conferencing and satellite internet connectivity. This forum was delivered as a component of the Cooperative Research Centre for Developing Northern Australia's Project: Developing a simple, robust telehealth system for remote communities:

(<https://crcna.com.au/research/projects/developing-simplerobust-telehealth-system-remote-communities>).

The overall aims of the forum were:

- Identify current barriers to the effective use of telehealth.
- Identify enablers to increase the uptake and effectiveness of telehealth.
- Gain a better understanding of stakeholders' experiences with digital health and telehealth in rural, regional and remote Australia.
- Identify research needs and provide directions to researchers.

The Forum was facilitated by Gavin Williams, Chief Development Officer – Regional and Remote, NBN Co. Key presentations are summarised below:

**Gavin Williams:** Gavin outlined his long association with Broadband for the Bush (B4BA) and the researchers and provided an insight from his perspective on the work being done by the project team and B4BA. Gavin provided an update on **NBN Co's** restructure so the organisation can ensure an unrelenting focus is maintained on regional and remote Australia with a priority on key segments including Health, Education; Agriculture; Indigenous; Small Business; Tourism; and Arts and Culture. This also includes emergency response support.

The initial NBN network build is complete— just about every home or business is eligible to connect to the **NBN** even in remote locations such as Thursday Island and surrounding islands. The **nbn Sky Muster™** Plus service has been developed by practical reflection and consultations in a collaborative manner. This was acknowledged by the recent awarding of the [Asian Communications Award](#). The work supporting [Laynhapuy Homelands](#) and WA communities has highlighted NBN's ability to service very remote and isolated areas.

We are in the midst of one of our nation's biggest challenge, as the economic and social upheaval inflicted from this pandemic will continue for many years to come. But rather than let it destroy us, we must continue to work together to recognise the opportunities it presents us such as what we've seen by way of digital health uptake. NBN Co has been preparing for this for eleven years – and while no-one specifically predicted this pandemic – it has been [digital infrastructure](#) that has kept Australia going through this crisis. And will help with our recovery.

Australia's healthcare system is undergoing significant reform as it responds to a once-in-a-generation pandemic and embraces rapid innovation. COVID-19 has fundamentally shifted the way both healthcare providers and patients think about healthcare delivery, and has demonstrated the benefits of a healthcare system that includes telehealth and other virtual health services as a permanent feature.

And it really has been the case of cities catching up to the bush, with the benefits of telehealth and virtual healthcare being a well known entity to the 7 million people serviced by rural health for whom it helps overcome unique challenges with distance, cost and appointment availability.

Nbn plays a critical role in enabling the shift in particular in regional and remote areas through the provision of a secure core network that underpins everything from telehealth consultations, to telemedicine, to wi-fi supported medical monitoring devices and wearables and we are keen to help accelerate digital transformation through a focus on connectivity, digital literacy, thought leadership and tech and innovation.

**Marianne St Clair:** Marianne introduced the CRCNA Project: Developing a simple, robust telehealth system for remote communities (<https://crcna.com.au/research/projects/developing-simplerobust-telehealth-system-remote-communities>). Initial results of testing SkyMuster Plus over the wet season were presented – with typical download speeds of 29 Mbps down (varied between 28-45 Mbps down), 9 Mbps plus up (typically 9.8 Mbps up), and a ping of around 560 ms (typically 556 – 570 ms). The assured rate from NBN is 25 Mbps down and 5 Mbps up and the service consistently exceeded the assured rate.

Outages due to weather events were between 2 and 26 minutes excluding power failures. It is important to note, the researcher targeted bad weather so the data collected were primarily before, during and after storms or monsoonal weather. The nearest BOM weather station was at Noonamah and recorded 425 mm of rain during the 6 day monitoring period.

**Conclusion:** Sky Muster Plus does work for telehealth as evidenced by the research, the successful implementation of telehealth in the Laynhapuy Homelands and having 3 video conferencing sessions running concurrently on the one Sky Muster service.

**David Murtagh:** Nationally telehealth has become more mainstream and we have learned some lessons over the last 6 months. Telehealth tools need to be easy to use from the patient and the clinician's perspectives. That is the overall aim of this CRCNA telehealth project. David and John Kelly demonstrated a simulated telehealth consult using a camera from a distance (eg by the GP) which can be remotely controlled by the clinician. The Logitech PTZ Pro 2 seems to be the best available at a cost of about \$1200. The optics are outstanding and it allows remote control at both ends of the video conference. There are many new devices coming onto the market including smart diagnostic tools. As well as a plethora of video conferencing tools coming on-line. Zoom won the video conferencing war in the early part

of the pandemic. There were concerns around security – but they have successfully addressed those concerns. End to end encryption is now available. Zoom is a game changer in the usability of the video conferencing market. Zoom allows multiple video inputs allowing connection of a second video camera or other video enabled diagnostic device.

**John Kelly:** John explained how he uses cameras when doing consultations with patients. Video conferencing is far superior to just talking to a patient on the phone. You can pick up non-verbal clues, you can observe if they look sick or not, see how they walk in the room and get them to do movements so you can make an assessment. You can zoom in on some part of the body and explain and show them what to do and get them to do the movements required - so a more informed assessment is achieved. Sometimes you want to zoom in really closely to look at fine detail and sometimes need a photo. Panning a camera to focus on the required part of the patient is very useful. David and John did a consultation with this system and could look the wound well enough with the camera even without the photograph – it was good John could control the camera. It was useful to be able to do that from the clinician end. Its really good for working with remote patients – great to be able to control the camera by the clinician.

“I supervise up to 2 GP Trainees and other health staff who visit about 12 outstations frequently. The staff go out in pairs and have been using telehealth for quite a few years. Using smart phones and cameras has been great. We love it! Most of our consultations are via video when we can do it (that is, if the internet is adequate).”

**Mike Harmon, CEO, VisionFlex:** VisionFlex manufactures and design telehealth equipment for the Australian context. The systems have been designed in collaboration with clinicians including Queensland Health. Products include the ProEx Telehealth System, ProEx mobile as well as a range of setup options – carts, cabinets and portable systems. A number of VisionFlex systems have been deployed in prisons, remote health clinics, and Antarctica. The ProEx mobile has the same functionality, except it is portable. The system has two batteries and can house a sim card so it can operate on the mobile network or wifi. The system has a built-in database and can connect to all health record systems with API connections through [Fast Healthcare Interoperability Resources](#) (FHIR), eg Communicare, Medical Director, Best Practice, etc.

**Diagnostic tools include:** Live video, photography, blood pressure, blood glucose, stethoscope, temperature, Pulse Oximetry, weight. The system has a medical Geis camera (high definition) – and can be fitted with a dermatology cap, a tongue depressor and a wound monitoring stick. The system can take additional attachments including ceiling mounted camera, otoscope, or other devices.

**Colin Baker-Russel and Kathy Gotha Kuthadjaka – Gawa Community** (a very remote community off the coast of the Northern Territory: Our approach to health has been on the preventative side. We have a small community and the health of the children is excellent. They are physically good, happy safe, and safe within the community. We have regular visits by Health workers, but not doctors, and sometimes doctors are needed. We have a need to access telehealth in the community. But we have very poor access to telecommunications. When children want to contact their friends, the children climb a 16 m tower with their mobile phones. There is a problem with the way things are and the way they are headed. Even small children are into video games, on the internet, on the phone. Kids at Gawa don't

have that access except in some lessons at school. They all have their own ipads – the education website is very, very slow.

For kids to live in Gawa, they switch off their mobile phones, they don't have connection to their friends in town. Now we have a generation with children that are happy now, doing what things kids should be doing, which is very different from town. There are different health problems in town.

Things are looking great now, but 10 years down the track, those kids will be grown up and married, and a new generation of kids coming in are not going to want to live without mobile phones or telecommunications. So, we're going to see a population drop in remote homelands. Which means, we'll have increased pressures in regional centres, which we don't need. We have difficulties with communications in remote homelands – we've been struggling for 30 years, but so far so good. But we can see that it's not going much further. We really need to have reliable telecommunications for our people in Gawa.

### **Panel Session: Introduced by Gavin Williams: What are the current barriers to the effective use of telehealth?**

#### **Introduction by Gavin Williams:**

- During the peak of COVID-19 from March to the end of September nearly 10.6 million Australians sought more than 30.5 million medical consultations with GPs, nurses, midwives and allied health and mental health services. Despite this huge increase, for GPs, only 3% of telehealth consults were done over video, with the remaining 97% being conducted over the phone.
- A lack of adequate connectivity (internet) is still perceived as a barrier to telehealth but we are seeing increasing evidence that newer connectivity products such as **nbn SkyMuster Plus** are helping address this - this includes the testing on SkyMuster Plus that demonstrated good performance in Darwin Rural and anecdotally in Laynhapuy Homelands. And we are now seeing other barriers emerge such as the effort required to set up systems and processes to conduct a video consult, and the patient's ability to participate in a video call that requires access to a device and the internet, as well as the digital skills to navigate the videoconferencing platforms.
- It is clear from Dr. John Kelly's presentation a much more informed assessment can be done using video conferencing rather than phone alone so what can be done to increase the use of video conferencing use for telehealth?

#### ***Panel members provided a brief introduction & summary of their experiences.***

- Tiani Cook: Vice President, Australian Women in Agriculture & Director, Horses for Course for Bush Kids.
- Suzanne Wilson, NT Vice President, Isolated Children's Parents Association.
- John Kelly, Laynhapuy Homelands Health Service.
- David Murtagh, Australian College of Rural and Remote Medicine.
- Mark Diamond, Managing Director, Diamond Consultants.
- Jeff Cook, Clinic Manager, Laynhapuy Homelands Health Service (Jeff was unable to attend due to being stuck out bush the night before and driving back to Yirrkala, but has provided information to the team directly).

**The Panel Discussion generated a wide range of diverse issues some suggested actions/recommendations were also suggested. A summary of the issues are listed below (NB: These are not in any order of priority):**

1. Lack of adequate connectivity (internet) is still perceived as a barrier to telehealth. The data from the Sky Muster Plus testing indicated good performance in Darwin Rural and anecdotally in Laynhapuy Homelands. People do not necessarily know how they can get adequate internet access. Then there's the affordability issue.
2. Children in remote areas need access to allied health services via telehealth. A number of children are not being diagnosed early and sometimes start school with learning difficulties or speech issues not identified, not diagnosed and not treated. There is a need for children to be diagnosed earlier (eg by Speech Pathologists) so intervention can commence earlier and therefore improve outcomes. It's a very long process to get a child diagnosed and treated, especially when there are large distances and long waiting times involved. These services need to be Medicare billable.
3. It was agreed health and education are closely linked. There needs to be equity of access for remote people (especially children) for health and education services. Health and education are closely linked.
4. Health outcomes in regional and remote areas are poorer than for urban areas (this has been supported by research outcomes). This deficiency may be, at least partially, addressed by telehealth. The National Rural Health Alliance has done research on this issue eg "[The Health of People Living in Remote Australia](#)"
5. Community Members from Gawa - this issue of lack of internet access and the current and long-term effects on their people, especially children was highlighted. Children are climbing a 16m tower to get mobile phone connectivity so they can communicate with their family and friends. It was agreed there needs to be better access for remote people to reliable and affordable internet.
6. Clinicians do not necessarily have access to their patient's records – so often do not know the background to the patient's history. Telehealth implementation needs to be underpinned by really good internet connectivity – so the clinician can do video conferencing as well as downloading patient data. The clinician may also need to refer to resources available on the internet during the consultation.
7. Access to telehealth is desperately and urgently needed for very remote Aboriginal Homelands.
8. Homelands also need access to internet to keep their people on their own country so community members can keep in contact with friends and family and also access resources via the internet. NB: People on communities have ipads and smart phones – just often do not have access to reliable and affordable wifi or mobile services.
9. There seems to be a huge budget for telehealth, but how does that apply to people living in remote areas? They still have to travel many kms to see a GP or specialist – even if the service could be done via telehealth.
10. Allied health services eg speech pathology, paediatrics, physiotherapy, etc need to be covered by Medicare.
11. "Research by the National Rural Health Alliance has shown there are significant differences in health outcomes for people in remote areas. Around 20% of negative health outcomes are attributable to a lack of timely, appropriate and affordable access to health services. If you detect a condition early enough – there are much better outcomes. We have to get tech to work in places like Gawa. We

- have to get telehealth to work in remote areas.” Mark Diamond, Managing Director, Diamond Consultants and former CEO, National Rural Health Alliance.
12. A possible partial solution is to get a network of GPs and allied health professionals having some interest in tech, supported by health technologists – network with their peers and influence them to make telehealth more mainstream.
  13. There is a problem with the current telehealth system which severely limits remote people accessing services. There is still a requirement for one in person (face to face) consult before being able to do telehealth. This means the people who could benefit most from telehealth are denied access to telehealth.
  14. Need to get financial systems in place so telehealth is mainstream. May have to look at some new business models.
  15. People don't know about telehealth let alone how to access it. There is a lack of publicly available information about accessing services by telehealth. Need to get information out to people who would benefit from telehealth.
  16. Practitioners need to provide services by telehealth – recognising that some things are not possible by telehealth (eg physical examinations, procedures, etc).
  17. Need more information sharing about telehealth.
  18. Develop a telehealth package for schools.
  19. Only 500,000 people live in most remote locations (Modified Monash Model (MMM) Regions 6 - 7) but they have a disproportionate access to health services and consequently, poorer health outcomes. That is, the further away from health services, the poorer the health outcomes. Need to get this message through to Minister Hunt. Consumers have indicated their very strong 'yes' to wanting access to telehealth. We need to support people to exercise that choice. The majority of remote people do not have that choice. Further away from services – the poorer the health outcomes.
  20. Private GPs, allied health professionals and specialists wouldn't make a living in these remote areas but possibly if the funding model was developed for clinicians in MMM regions 4 or 5 were supported to provide services, a new model of service delivery may be developed. It is important to ensure sustainability.
  21. Clinical staff need to know how to use the technology.
  22. Clinical staff need to be comfortable using the technology.
  23. The technology needs to be simple – otherwise people will use the phone as it is much easier. Complex systems just don't work. When working with patients, it is even more important the technology is simple to use. Preferably, it should be something the patient already uses and is familiar.
  24. There's a different technique to doing a consult via video conferencing than in person (face to face). There's a technique how to take the patient history and examine a patient using video conferencing. Some work needs to be done to develop and optimise those techniques. This needs to be followed up with training – possibly by the colleges. Also need to be aware of the limits of telehealth eg doing procedures.
  25. There needs to be training to teach clinicians how to use the technology.
  26. There is a difference between competence and confidence. Doctors can be confident doing consultations in person and achieve a high level of competence. However, doctors need to be confident and competent in using tech and running with it.
  27. “Telehealth has been taken up quite well, but everyone used the phone! No-one switched on facetime! The safety features about seeing someone are very important – you can't tell that over the phone. Even knowing it's the right patient.



I don't understand why so many doctors do telehealth by phone but won't switch on face time. Can't believe that many patients don't have some form of video conferencing!" – John Kelly.

28. Need some kind of database of service providers who will make themselves available for telehealth. Maybe a knowledge hub?
29. There is also isolation in urban settings for people who are disabled, aged or limited by disease/social issues. Aged care facilities are difficult to service by GPs.
30. The medical profession refuses to accept/send information using new technologies. Still have fax machines! Need to understand why they refuse to take up new technologies and address those issues and support them to take on the new technologies.
31. There have been concerns about security issues and these need to be addressed urgently.
32. Scheduling needs to be made easy for clinicians to do telehealth. For a practitioner running their bookings for their day (eg 5 – 10 minute consults) – it is easy to have people waiting in the waiting room and see patients throughout the day. Doing telehealth consults, especially via video conferencing needs simple and efficient scheduling processes established. Possibly need some patient end support to implement.
33. Who owns patient data? How is data transferred when a patient moves from one area to another, or moves states? There are mis-matched data records. How does a patient data get exchanged? My Health Record was designed to address this issue but has largely not been adequate. Even within a jurisdiction there are issues with practitioners working on a fee for service model engaging with the public health system. It's a mess – even gets worse when move states. Need to get communications going between GPs, other clinicians and hospitals. There are serious systemic problems with patient data exchange and management.
34. Problems with My Health Record: My Health Record is not fully supported by health practitioners. There are still concerns about security. Information is not comprehensive enough to be useable by the practitioners. The patients do not know to ensure the outcome of that consult is recorded on their record. Patient's do not understand or have adequate access to managing their own My Health Record. Patients are looking up their My Health Recording and finding results they expected to be there missing from the record. "I have to ask my GP to put information into My Health Record."
35. My Health Record research questions: Why aren't we using it? Why aren't we pushing it? If it worked well, it could be very useful. As consumers – we need to ask these questions and develop our understanding.
36. Implementing telehealth out bush isn't as easy as dropping equipment out there. Needs a lot of support on the ground. How can we improve telehealth uptake and its efficiency.
37. Implementing telehealth in remote communities presents a significant opportunity. A telehealth support officer is a possible job. Individuals could gain some competency in the tech and facilitate uptake.
38. In remote clinics, really need an additional person to support telehealth implementation.
39. Clinicians often do not recognise the value or see the benefits of using video conferencing for telehealth.

40. It is important to know the safety rules and the limits – and what you can resolve using telehealth. Possibly need some guidelines developed by the colleges.
41. Need to identify the barriers from the clinicians' and patients' perspectives and address them with relevant training and information sharing.
42. Lack of patient end support for GP clinics.

**Closing comments:**

**Gavin Williams:** We need a clear and crisp view of what elements need to be put in place to enable videoconferencing for GPs in the bush. Are there blindingly obvious things that need to be done first? Is there a need for various modelling? Is there fragmentation across the sector that needs to be resolved?

**Darius Pfitzner & David Murtagh:** This conversation shows the need for formal research to understand what the barriers are and how to address them. There is a need to identify the issues and give good guidance on where/how to proceed.

*A more detailed report on the outcomes of the DH4B 2020 forum will be made available in the new year. How we are going to tackle these issues will be the subject of the next DH4B Forum.*

**Thank you!**

The organisers would like to thank the presenters, panel members and participants for their contributions to this forum. We wish you all a wonderful Christmas and look forward to working with you in the new year.

Marianne, David and Darius, CRCNA Telehealth Project and Broadband for the Bush Alliance.