Barriers to telehealth uptake in rural, regional, remote Australia: What can be done to expand telehealth access in remote areas?

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HIC 2019 Melbourne 12-14 August

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"Son had a knee reconstruction – I had to take a week off – drive 9 hours to town and back. So 3 days round trip each time we had to go into town for a follow up appointment with doctor or with allied health."

Coodardie cattle
Photo – Moira Lanzarin

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Cattle Mustering, Coodardie Station, NT
Photo – Moira Lanzarin

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Acknowledgement of Country

Photo thanks to Broadband for the Bush and Ali Mills

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Broadband for the Bush Alliance (B4BA)

Alliance of organisations seeking to advance the digital capacity and capability of regional, rural and remote Australians. Each year convene:

- Indigenous Focus Day
- Annual Forum
- Telehealth Workshop

Recommendations:

Increase Medicare item numbers for telehealth including GP and allied health

% PATS savings returned to Community Health Clinics to support telehealth

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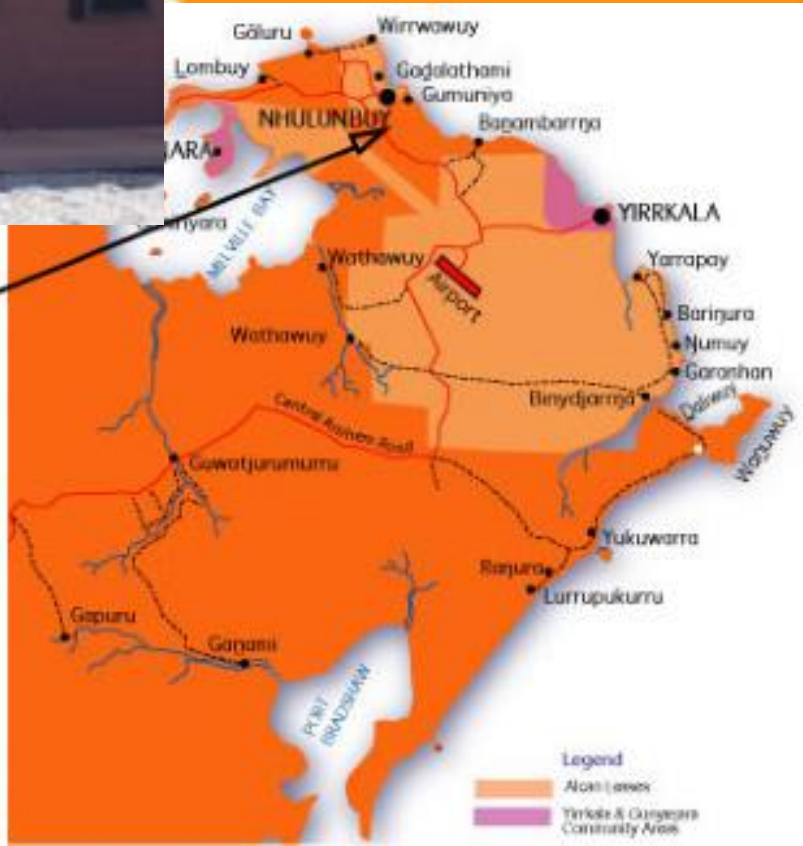
LAYNHAPUY HOMELANDS ASSOCIATION



Very Remote.

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Once the wet season is in full swing the only access is via chartered plane.
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Clinic in Laynhapuy Homelands.

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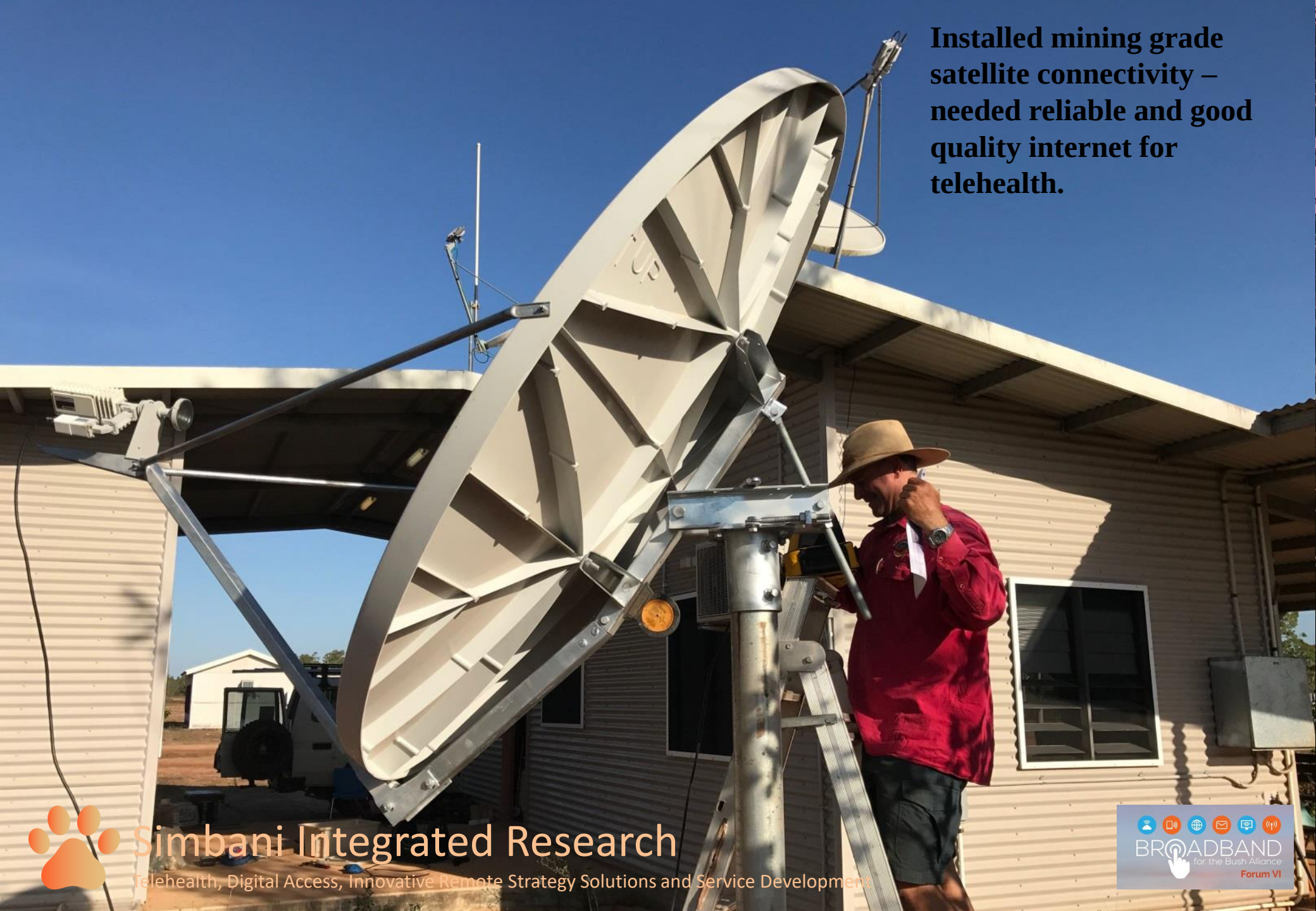

Installed mining grade satellite connectivity – needed reliable and good quality internet for telehealth.

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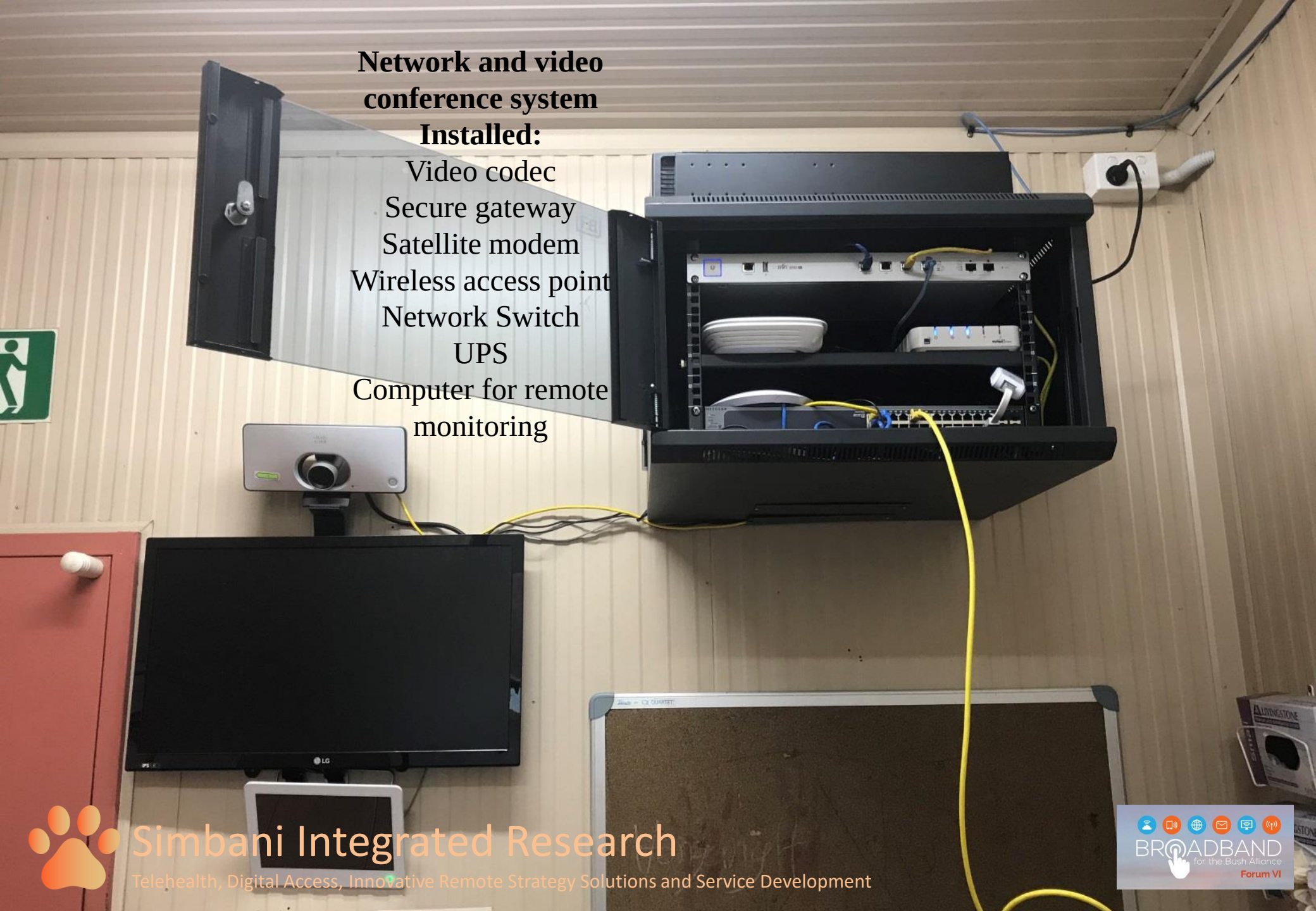
Network and video conference system
Installed:
Video codec
Secure gateway
Satellite modem
Wireless access point
Network Switch
UPS
Computer for remote monitoring
LG

Extensive remote support provided by project team.

Reliable high grade internet provided the ability to access other on-line digital health tools eg
local shared health record and other on-line health resources.

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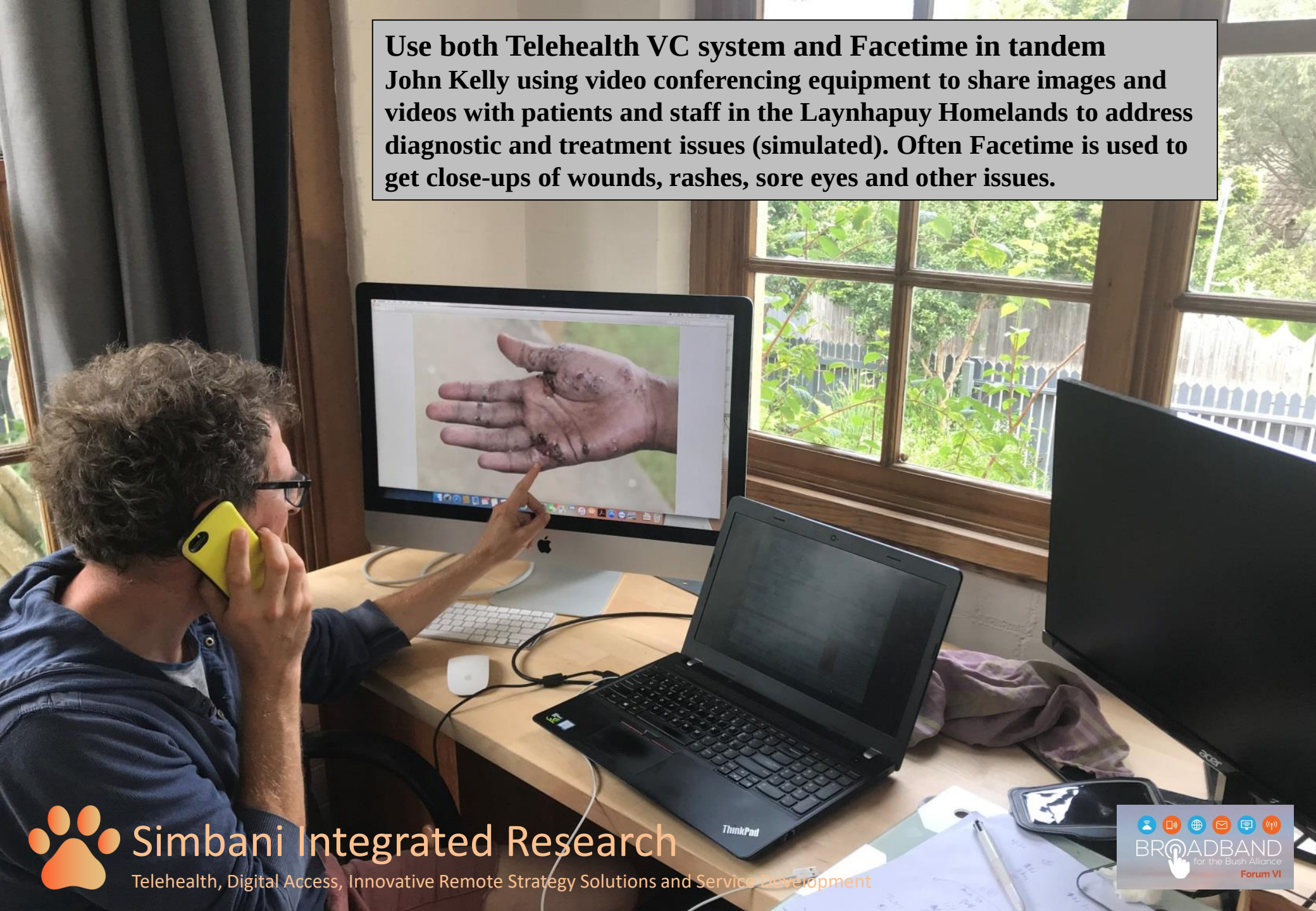
Specific telehealth diagnosis can be done with very simple tools!

By product:
Practical solution developed that was fit-for-purpose – ***Facetime!***

John Kelly assessing a hand injury using Facetime:
Fast initiation of VC close up photography & video for diagnosis

Facetime, Skype and other main stream VC tools now use AES encryption to create a secure communications environment.



Use both Telehealth VC system and Facetime in tandem

John Kelly using video conferencing equipment to share images and videos with patients and staff in the Laynhapuy Homelands to address diagnostic and treatment issues (simulated). Often Facetime is used to get close-ups of wounds, rashes, sore eyes and other issues.

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NT Context: Aboriginal people living in NT (8)

- 40,000 very remote
- 17,000 in remote

Telehealth has changed the way services are delivered in the Laynhapuy Homelands for the benefit of Aboriginal people (6)

Remote Aboriginal Homeland Community.

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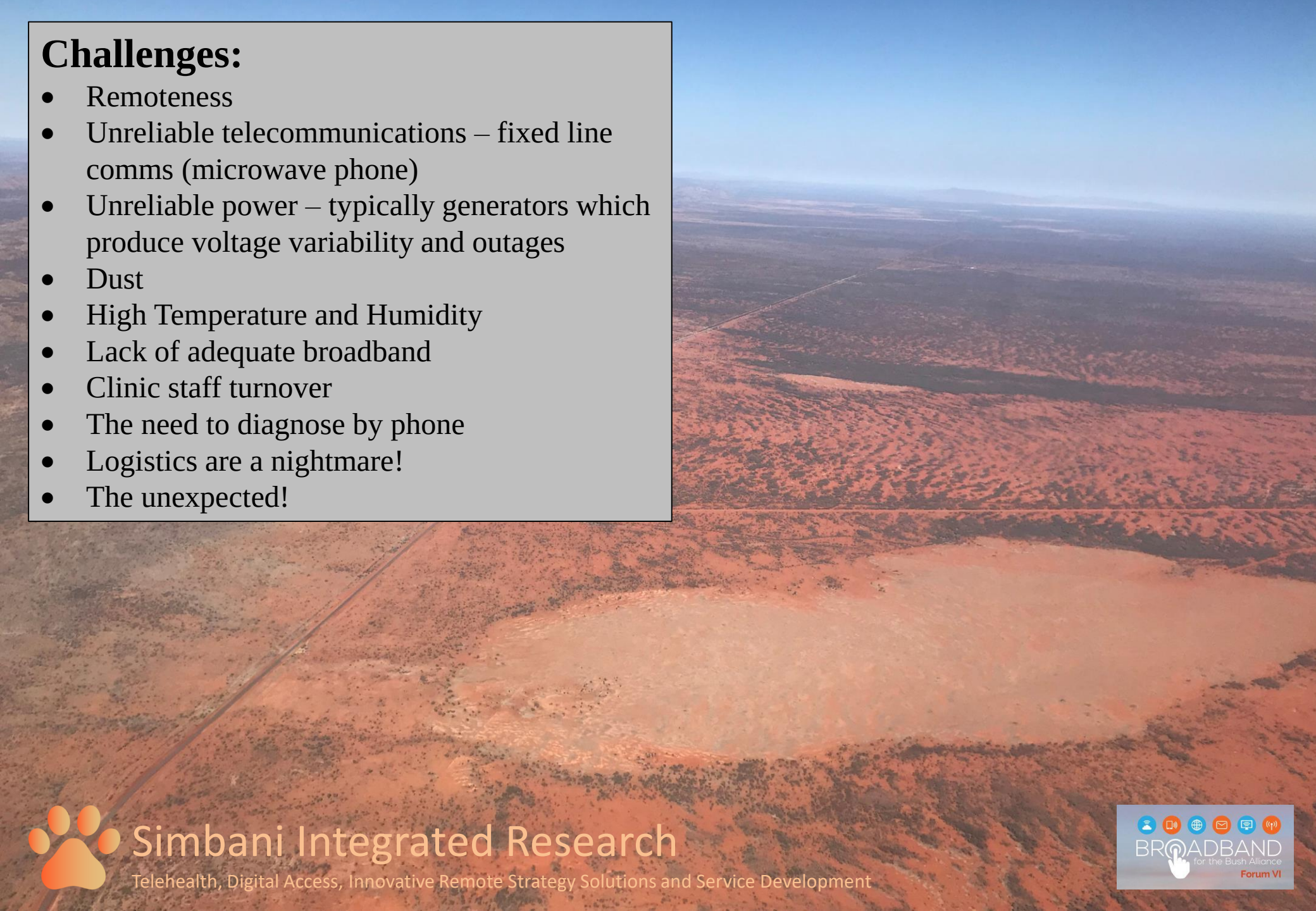
Benefits of telehealth:

- Family, patient and clinician meetings to facilitate joint and more informed decision making (5), resulting in a more positive patient outcome and crucial clinical procedures being done more expediently therefore improving the probability of survival (6). Patients are able to see familiar faces – even if it is via a video-conference.
- More accurate assessments for evacuations and acute care retrievals, providing staff training and support, providing the ability to access a wider range of services, facilitating more culturally sensitive induction of new staff and patient safety (6).
- Higher quality training and direct observation of trainee GPs.
- Showing patients and families pictures and videos from the internet, the supervising GP can demonstrate clearly what the problem is, the treatment required and opportunistically provide education for both patient and remote end clinicians (5).
- Generating savings in patient travel.

Mary River, NT
Photo – Lauchlen St Clair

Challenges:

- Remoteness
- Unreliable telecommunications – fixed line comms (microwave phone)
- Unreliable power – typically generators which produce voltage variability and outages
- Dust
- High Temperature and Humidity
- Lack of adequate broadband
- Clinic staff turnover
- The need to diagnose by phone
- Logistics are a nightmare!
- The unexpected!




The
unexpected!
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Expectation that service delivery to remote areas should improve…

Despite the evidence…still limited uptake in the NT!

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Many young families living in remote and very remote areas

Mike O'Brien
Photo – Moira Lanzarin

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Aging population in Agriculture

Mike O'Brien
Photo – Moira Lanzarin

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What happens when the tourists discover telehealth?

Mary River 5 metre local

Photo – Lauchlen St Clair

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ACCAN (Australian Consumer Communications Action Network).
B4BA National Survey and Case Studies:

Internet and telecommunications services:

- Availability
- Quality
- Reliability
- Affordability

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Methods

Ethics approval Charles Darwin University:

- Survey (H16028)
- Case studies (H18022)

Survey: 28 Questions - 10 questions specific to Telehealth (n = 283)
Case studies: Semi Structured interviews (n = 12)

Microsoft Power BI – Survey questions.
NVivo – Case Studies

Details: www.simbani.com.au

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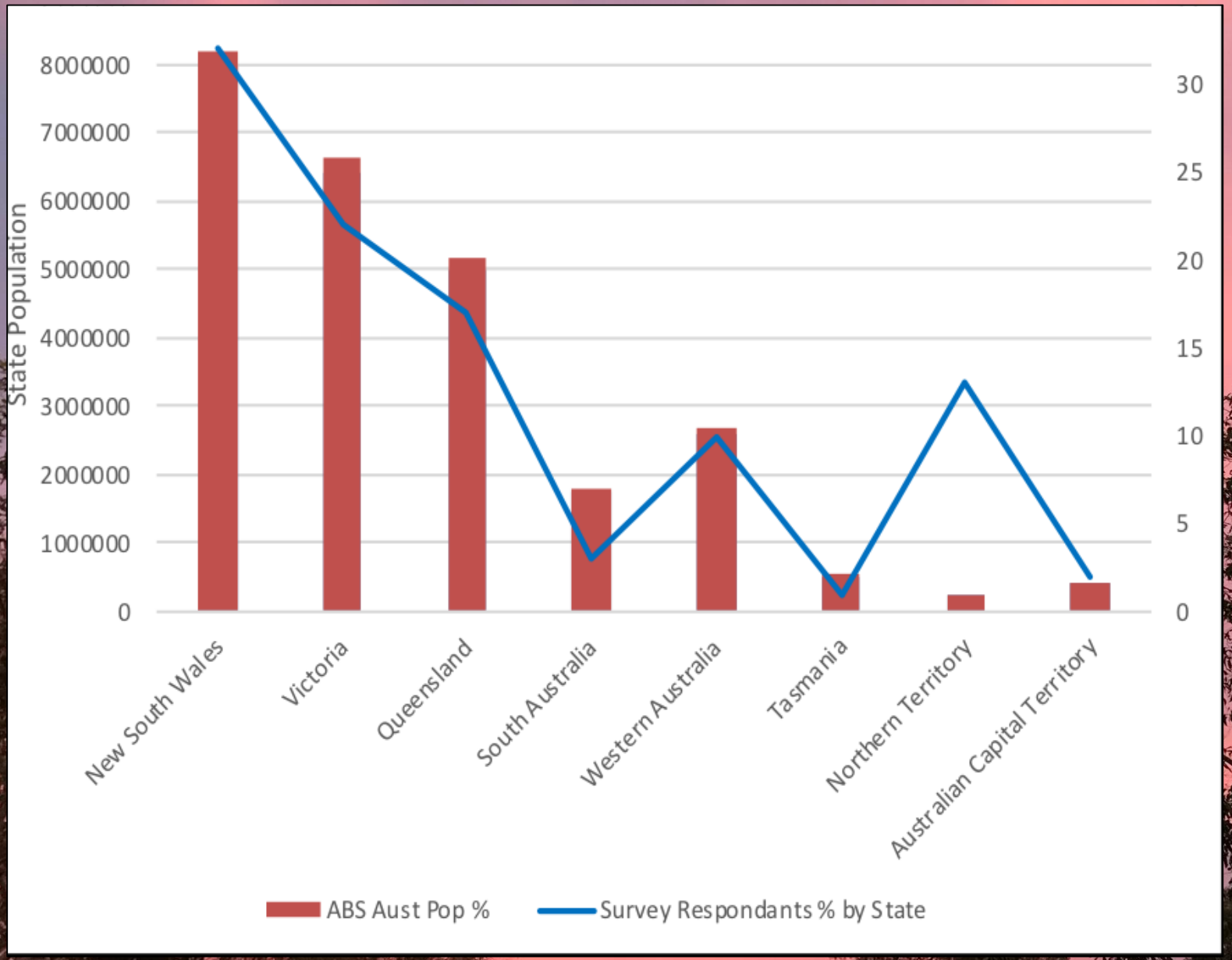

Distribution of respondents compared to Australian Population

B4BA originated NT, many B4BA Members in NT

Bulk respondents - RegionalRuralRemote

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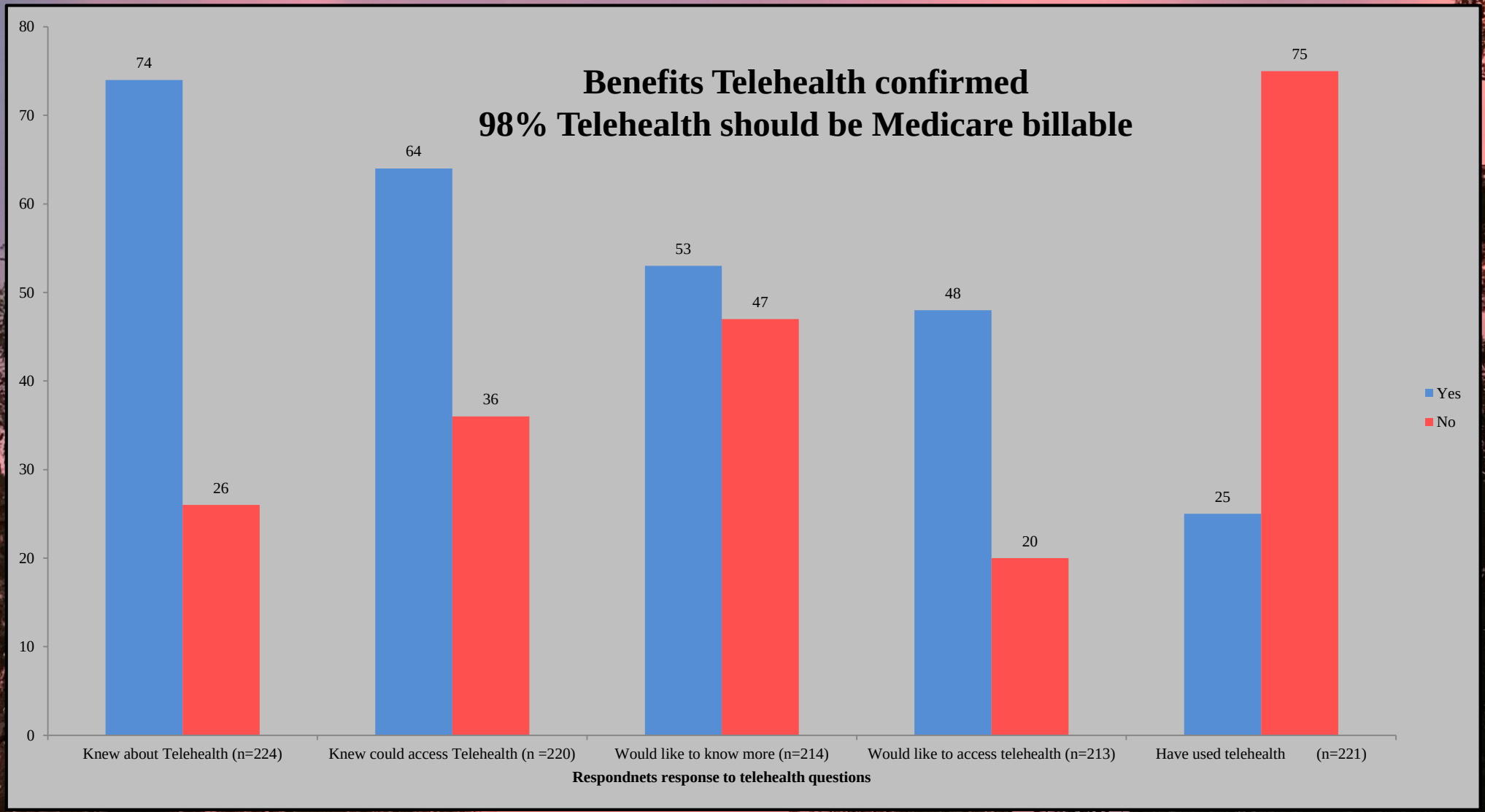
Summary of responses to telehealth survey questions.



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Barriers to Telehealth:

- Lack of knowledge about accessing telehealth.
- Consultations not being billable to Medicare.
- Some clinicians (including specialists) not providing services via telehealth.
- Regulatory requirements (with respect to training requirements to deliver telehealth).
- Lack of funding for patient-end support.
- ***Inadequate internet service and data allowances including upload ability.***

Lack of adequate telecoms in remote areas:

- Radio phones (HCRC)
  - Usually poor quality
  - Unreliable.
  - Often out for a month or more
  - Limited lifespan
- NBN SkyMuster satellite service
  - Varies in quality
  - Unsuitable for telehealth (at this point in time)

"We have nothing to the outside world if both go down together. Sometimes both go down."

The lack of adequate and reliable internet connectivity is a major barrier to the expansion of telehealth.

Have you heard of telehealth services?

"No, not before I read the information sheet about this research from you. Then I Googled it and America uses a lot of telehealth. I feel that we should be able to access our own doctors using telehealth. It would save going to town (very significant drive especially if you are unwell). When you feel sick – you need to get yourself up and drive into town...It's a safety issue driving when you are not well. We're still in drought and didn't know that we might be able to see a GP by telehealth and have it billed to Medicare…More needs to be done about telehealth."

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Patient-end support is critical for the delivery of telehealth services:

"Telehealth is disruptive to the clinic. More funding for local services for support staffing is needed - this is really important. It's the difference between failing and successful telehealth. If you want it to work it has to be coordinated. Hospitals have a huge mandate to provide telehealth, but doesn't matter how well resourced the hospital end is, for it to work you need to resource the patient-end. A lot of places haven't understood that resourcing need."

Remote Aboriginal context:

- 95,222 Aboriginal people living in very remote Australia
- 40,149 live in the NT (8).

Many remote Aboriginal people only have pre-paid mobiles - spend significant % limited income on data (14).

Credit runs out - not able to access essential services such as health or emergency services.

Digital inclusion:

"NBN needs minimum level of connectivity (bandwidth) for citizens and government services – need access to a basic service for everyone.

Wouldn't mind if there was a levy like Medicare – and if a person wants better services they pay extra. This is a digital inclusion conversation."

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Suggestions:

"Telling people about it would be useful!"

"Support for the patient-end, coordination, facilitation and a clinician at the patient-end…Its important that there is support for communities to take up telehealth at the patient-end."

"Having a pool of specialists/GPs, hearing, eyesight, early childhood specialists. Getting on email/website and organise a video conference would be very useful. That would be incredible for remote cattle stations or any remote people."

"Would be good but I don't know about it. I'm under a specialist as well as GP. The specialist is wonderful. Will ask them about the option to do consult via internet (would save a trip to town)."

"Telehealth should be free for communities and rural people."

"Access to telehealth could be improved by having willing, distant doctors who are motivated to form relationships with communities and be available."

Additional uses for telehealth:

- Video-conferencing by Emergency Services to improve triage and management.

- Telehealth phone applications for homeless people for management of their health issues with unmetered access to a relevant video conferencing support system.

- Priority and unmetered access to telecommunications services for consumers with special needs and accessing health services.

Increasing access to telehealth services can be assisted by:

- Improved internet connectivity to meet the requirements of video conferencing.
- Educate the public about availability.
- Increase data allowances and not metering telehealth services.
- Increase availability of telehealth services.
- Assist clinicians to deliver telehealth without onerous training or regulatory requirements.
- Increase Medicare item numbers.
- Resource patient-end support.

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Telecommunications:

Remote urgently need:

- Access to basic and affordable internet.
- Access to two telecommunications technologies.
- Need to investigate the implications of lack of patient end support.

Improved internet services are urgently required to improve access to telehealth for remote people.

Where to now???

We can do telehealth via high grade satellite (eg Laynahpuy Homelands)

…but still very limited access to telehealth in regional, remote and very remote areas.

Elizabeth River, NT
Photo – Jennie Wilton

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Can we make telehealth work with NBN SkyMuster?

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Gawa
Galiwinku
Bremer Island
Yirrkala
Dhalinybuy
Gurrumuru
Garrthalala
Gan Gan
Image Landsat / Copernicus
Google Earth

Rocco & Tim testing NBN at Gan Gan

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Planned Projects:

- **NBN Telehealth**
- **Community WiFi**

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Future research questions:

Can NBN satellite be successfully used for telehealth?

Can affordable and reliable diagnostic smart tools (cameras, sensors) be developed for small, remote communities?

Can solar power improve telehealth reliability?

Can simple solutions be developed for secure messaging using existing email infrastructure?

How do telehealth consultations between primary health care providers and specialists improve health outcomes for remote patients?

How can we empower patients to create polite demand for telehealth access?

Can real jobs be funded on community sustainably by re-directing existing funding?

What support mechanisms are needed to maintain workforce sustainability?

What is the unmet demand?

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Thank You!

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