



Australian Government  
Department of Industry, Science,  
Energy and Resources

**AusIndustry**  
Cooperative Research  
Centres Program

## Collaboration in Action: Can community Wifi and Telehealth “Close the gap” in remote Aboriginal Health?

**Marianne St Clair**  
**David Murtagh**  
DH4B 09/11/21



**Simbani Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development

Dundee Beach, NT





# Acknowledgement of Country



Photo thanks to  
Broadband for the Bush  
(B4BA) and Ali Mills



**Simbani Integrated Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development





An aerial photograph of a tropical coastline. The water is a vibrant turquoise, transitioning to a deeper blue further out. A small, dark, forested island with a sandy beach is visible in the middle ground. In the background, a long, thin peninsula or island stretches across the horizon under a cloudy sky. The overall scene is serene and scenic.

## **Theory of collaboration – components include:**

- Common goal identified
- Stakeholders – the right stakeholders!
- Communication
- Leadership
- Networking
- Nurturing
- Power distribution
- Relationship building
- Resources
- Shared learning
- Time
- Training
- Trust

**Collaboration is resource intensive!**

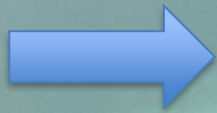
*Collaboration theory underpins this work.*

# **Overall aim: Reduce the disparity of health service delivery between Urban and RRR**

## **- The Great RRR Divide**

### **Rural, regional and remote (RRR) context:**

- 500k people live in MMM (Modified Monash Model) Regions 6 & 7
- Disproportionate access to services including health services (National Rural Health Alliance)
- Poorer health outcomes



### **“The Great RRR Divide”**

### **Challenges:**

- Remoteness
- Low population density
- Unreliable telecommunications and power (typically local generators)
- Poor roads – can be isolated for months
- Dust, high temperatures and humidity.
- Severe weather events.
- Health – very limited access to health services.

*Many remote people still have issues with access to reliable, adequate and affordable internet and equitable access to health services.*

*Testing NBN Sky Muster Plus 2019-2020 wet season*

## Clear to light weather typically

- 29 ↓ (varied 28-45↓)
- 9 ↑ (typically 9.8 ↑)

Ping fairly consistent 556 - 570 ms

SHARE



Result ID **8956159592**

✓ RESULTS

⚙️ SETTINGS

⌵ PING ms

557

⬇️ DOWNLOAD Mbps

48.46

⬆️ UPLOAD Mbps

9.84

GO



Connections

Multi



'Yes' Optus

Sydney

[Change Server](#)



IPSTAR

122.129.138.90

RATE YOUR PROVIDER

IPSTAR



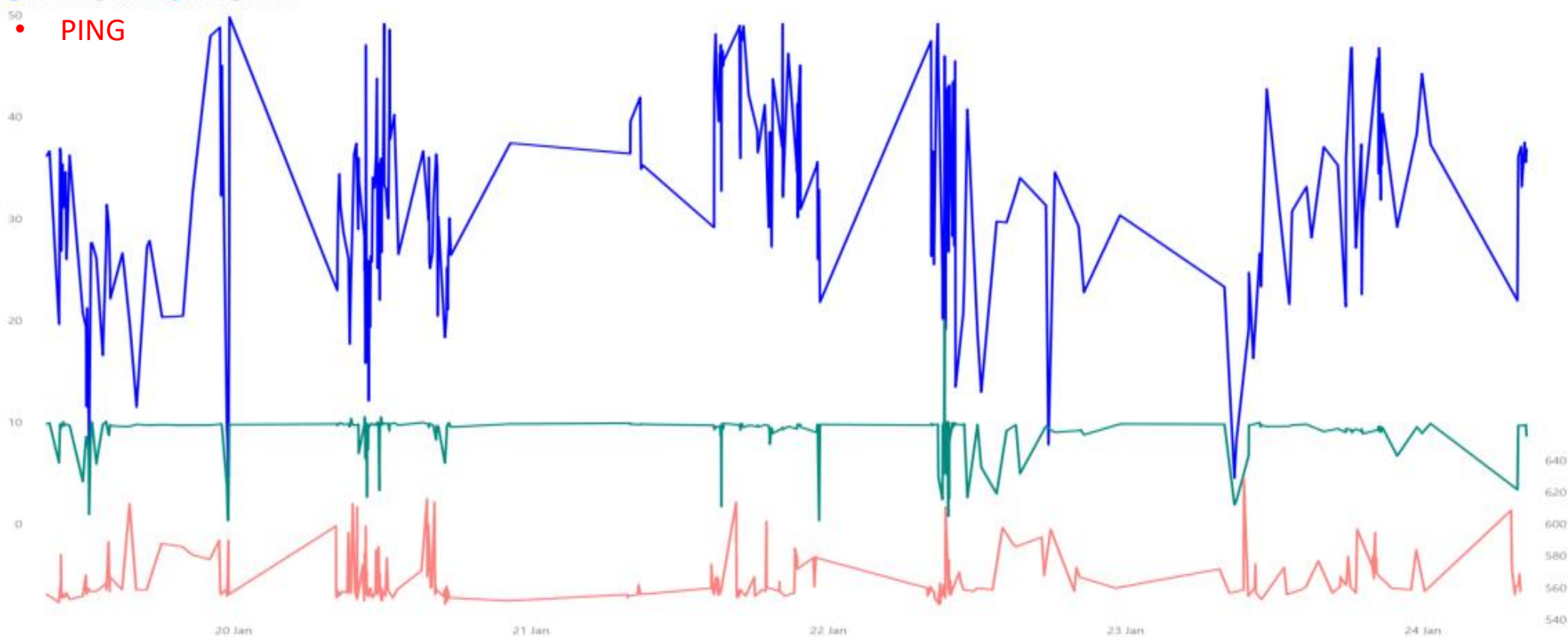


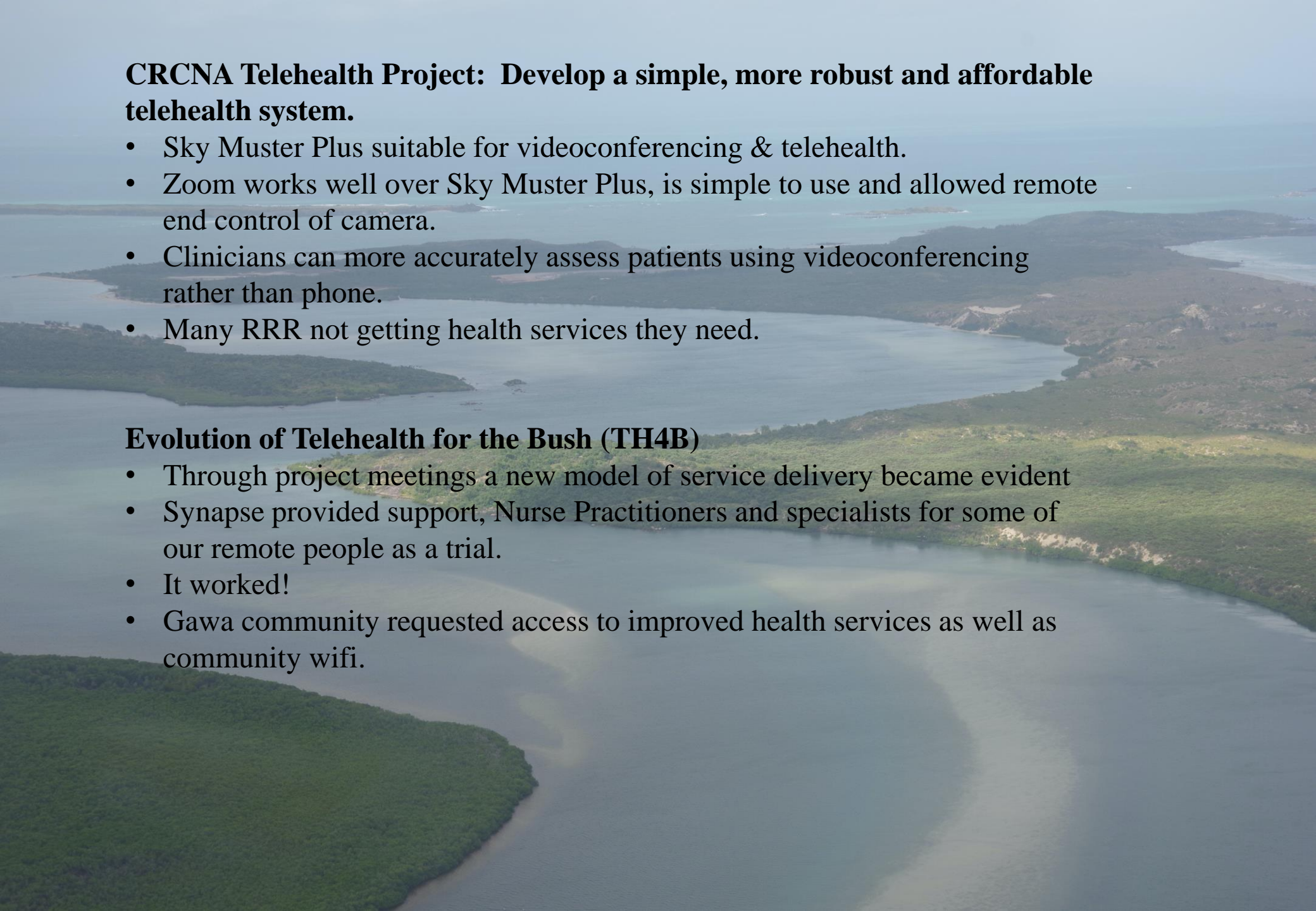
# Monitoring during monsoonal conditions Jan 19-24

- Nearest BOM weather station – 425 mm
- Specifically targeted adverse weather
- Outages – 2-26 mins (excluding power outages)

● DOWNLOAD\_MEGABITS ● UPLOAD\_MEGABITS

● PING





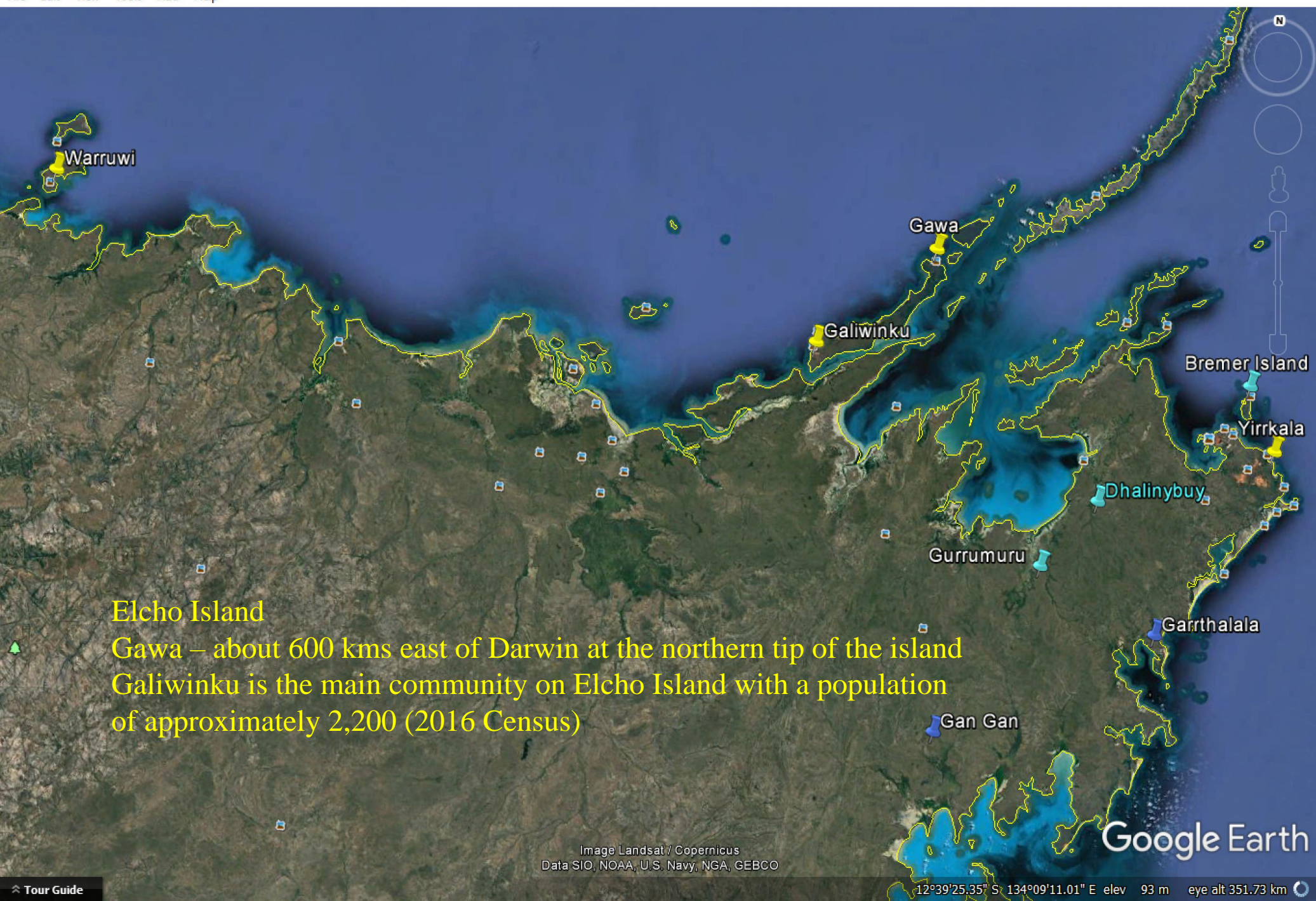
## **CRCNA Telehealth Project: Develop a simple, more robust and affordable telehealth system.**

- Sky Muster Plus suitable for videoconferencing & telehealth.
- Zoom works well over Sky Muster Plus, is simple to use and allowed remote end control of camera.
- Clinicians can more accurately assess patients using videoconferencing rather than phone.
- Many RRR not getting health services they need.

## **Evolution of Telehealth for the Bush (TH4B)**

- Through project meetings a new model of service delivery became evident
- Synapse provided support, Nurse Practitioners and specialists for some of our remote people as a trial.
- It worked!
- Gawa community requested access to improved health services as well as community wifi.





Warruwi

Gawa

Galiwinku

Bremer Island

Yirrkalā

Dhalinybuy

Gurumuru

Garrthalala

Gan Gan

## Elcho Island

Gawa – about 600 kms east of Darwin at the northern tip of the island  
Galiwinku is the main community on Elcho Island with a population of approximately 2,200 (2016 Census)

Image Landsat / Copernicus  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google Earth

12°39'25.35" S 134°09'11.01" E elev 93 m eye alt 351.73 km



# Gawa

- Small island homeland 600 kms east of Darwin (by air)
- Population approx 20 adults and 46 children
- Gawa Christian School
- Nurse visit once a week for a few hours
  - High turnover nursing staff
  - Poor continuity of care
  - Community want a more pro-active model of care

**Previously children climbing tower to get mobile reception**

- NBN Co provided Community Wifi Sky Muster Plus– approx. 100 m range
- Managed service, currently 2 – 7 pm (as requested by community)



**Simbani Integrated Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development





# Telehealth for the Bush (TH4B) Trial – Can access to health services for RRR be increased using this new model of service delivery?

Nurse Practitioners:

- Patient-centred care similar to GP role
- Skilled and qualified to diagnose & treat patients in collaboration with Medical Practitioners
- Can see patients via telehealth without in-person initial requirement
- Can access Medicare rebates
- Can refer patients to specialists, diagnostic tests, allied health professionals
- Can prescribe medications
- Synapse mobile app facilitated billing and referral pathways
- Trial worked with extensive collaboration
- Required administration, oversight & management



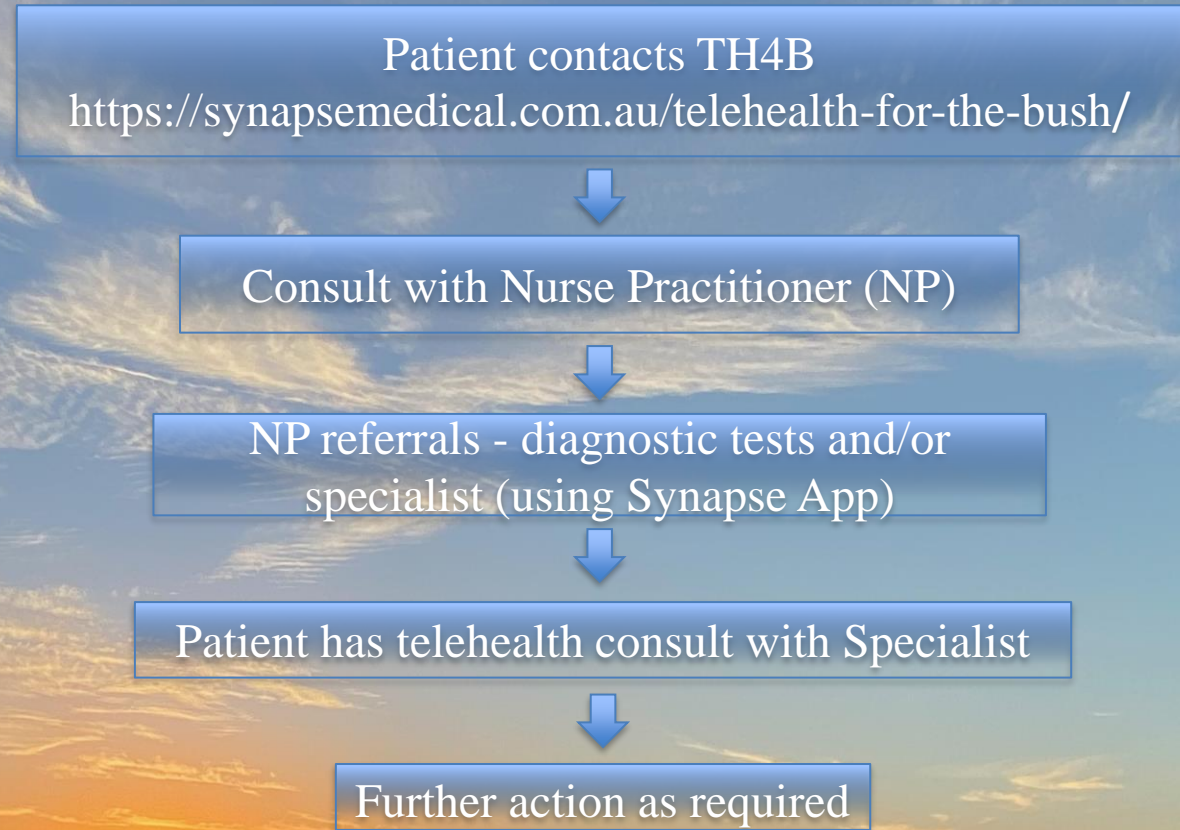
**Simbani Integrated Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development





# Synapse Concierge Service. (Method)



**Simbani Integrated Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development





# Telehealth demonstration & consultations.

Elders requested education about telehealth and how it worked

**Collaboration: Simbani, Synapse, VisionFlex**

- Aboriginal Nurse Practitioner – Far North Queensland
- Zoom video conference & smart tools including VisionFlex diagnostic equipment
- Community members and school classes visited in rotation
- 17 health checks under the supervision of the Nurse Practitioner



**Simbani Integrated Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development





## TH4B Trials:

Operating for 8 months

38 patients



## Locations:

Regional & remote NT, WA & Qld  
Gawa

Pilbara – Puntukurnu Aboriginal Medical Service  
focusing on child development assessment and  
treatment.

## Outcomes:

Patients accessing services via telehealth  
Linking back into public system, eg for  
operations and diagnostic tests

## Examples:

Orthopaedic surgery with only 2 trips to town (one for MRI, one for Op as public patient)

A number of patients accessing a range of mental health services from RRR homes.



**Simbani Integrated Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development





## **TH4B Expanded network – Range of 40 health services now available, including:**

Allergist, Clinical Immunologist Anaesthetist, Cardiologist, Cardio-thoracic Surgeon, Colorectal Surgeon, Dermatologist, Emergency Physician Endocrinologist, Exercise Physiologist, Gastroenterologist and Hepatologist, General Physician, General Practitioner, General Surgeon, Geriatrician, Haematologist, Infectious Diseases Physician, Intensive Care Medicine, Midwife, Nurse Practitioner Neonatal/Perinatal Medicine, Paediatrician, Nephrologist, Renal Physician, Neurologist, Obstetrician and Gynaecologist, Occupational Therapist, Oncologist, Orthopaedic Surgeon, Paediatric Surgeon Paediatrician/Paediatric, Neurologist Pain Medicine, Palliative Medicine, Pathologist, Psychiatrist, Physiotherapist, Radiation Oncologist, Rehabilitation Physician, Respiratory and Sleep Physician, Rheumatologist, Speech Therapist, Urologist, Vascular Surgeon

....and expanding



**Simbani Integrated Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development





## **Lessons learned:**

High level of collaboration and administration required

## **Barriers:**

- Lack of access to adequate internet
- Data transfer between diagnostic services, referring clinicians and patients
- Lack of data uploaded to My Health Record (MHR)
- Diagnostic services refusing to upload data to MHR
- Diagnostic services sending results to referring clinician via post (causing extensive delays)
- Clinical services Medicare funded, but not administration to ensure continuity of care with local health care providers
- Requires collaboration and administration plus access to networks



**Simbani Integrated Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development





## **Next steps for Gawa.**

Establish work pathways with local AMS and NT Health

Training for locals to access telehealth service via the TH4B Trial using smart phones.

## **Longer term goals**

Locally manned community clinic on-site

Trained “Telehealth Technicians” – patient-end administration and technical support

Accommodation for local and visiting health professionals

At least two (male and female) locally based health professionals

*NB: These jobs may not be full-time or may be combined with other roles (eg driver, community liaison)*



**Simbani Integrated Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development





## Conclusions - TH4B model of service delivery.

- Can supplement existing services
- Can link into existing services
- Can expand access to a wider range of health services for RRR
- Improve health outcomes for RRR
- Potentially can address the “Great RRR Divide”
- Potentially assist in “Closing the Gap” in health for remote Aboriginal people

### Research Questions:

Can this new model of service reduce the disparity between RRR and urban in health service provision?

How can TH4B be implemented to “Close the Gap” for remote Aboriginal people?

How can we fund TH4B sustainably?

Elizabeth River, NT  
Photo – Jennie Wilton



**Simbani Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development







## Acknowledgements:

The project team would like to acknowledge the co-investment by CRCNA and the contributions of our project partners:

- Emerge IT Solutions
- Laynhapuy Homelands Aboriginal Corporation
- Puntukurnu Aboriginal Medical Service
- SkyMesh
- Synapse Medical Services
- VisionFlex
- Asia Pacific College of Business & Law
- Biz365
- NBN Co

## With support from:

- The Gawa community
- Isolated Children's & Parents Association
- Broadband for the Bush Alliance



**Simbani Integrated Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development





Questions?

Comments?

*Please email or  
phone*



Simbani Research

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development







Australian Government  
Department of Industry, Science,  
Energy and Resources

**AusIndustry**  
Cooperative Research  
Centres Program

**Thank You!**

**Marianne St Clair**  
**David Murtagh**

[marianne@simbani.com.au](mailto:marianne@simbani.com.au)

[dave@simbani.com.au](mailto:dave@simbani.com.au)

[www.simbani.com.au](http://www.simbani.com.au)

**0427 555 484**



**Simbani Research**

Telehealth, Digital Access, Innovative Remote Strategy Solutions and Service Development

**Dundee Beach, NT**

