

Developing a simple, robust telehealth system for remote communities: Identified issues and recommendations on telehealth tools

Marianne St Clair
David Murtagh
AIDI Summit 2020

Dundee Beach, NT



Simbani Integrated Research

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



Acknowledgement of Country

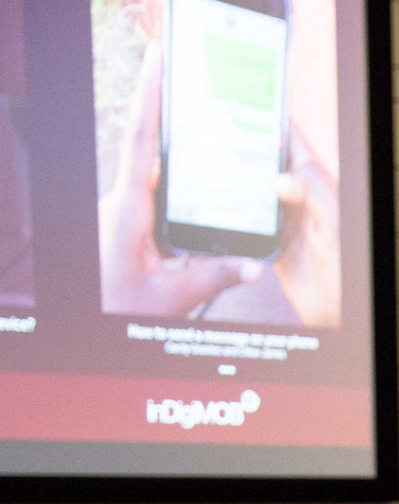


Photo thanks to
Broadband for the Bush
and Ali Mills



Simbani Integrated Research

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



Project Partners:

- CRCNA
- Laynhapuy Homelands Health Service
- Puntukurnu Aboriginal Medical Service
- Emerge IT Solutions
- SkyMesh (Retail Service Provider)
- VisionFlex
- Synapse Medical
- Asia Pacific College of Business & Law
- BIZ365
- NBN Co
- Simbani Integrated Research

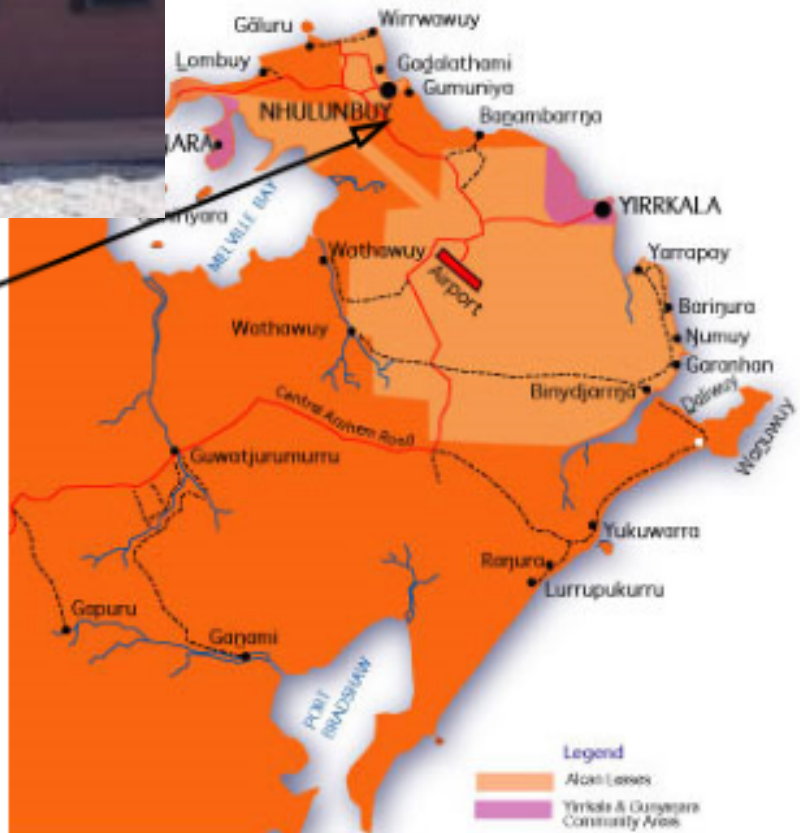
In-kind support from Australian College of Rural and Remote Medicine



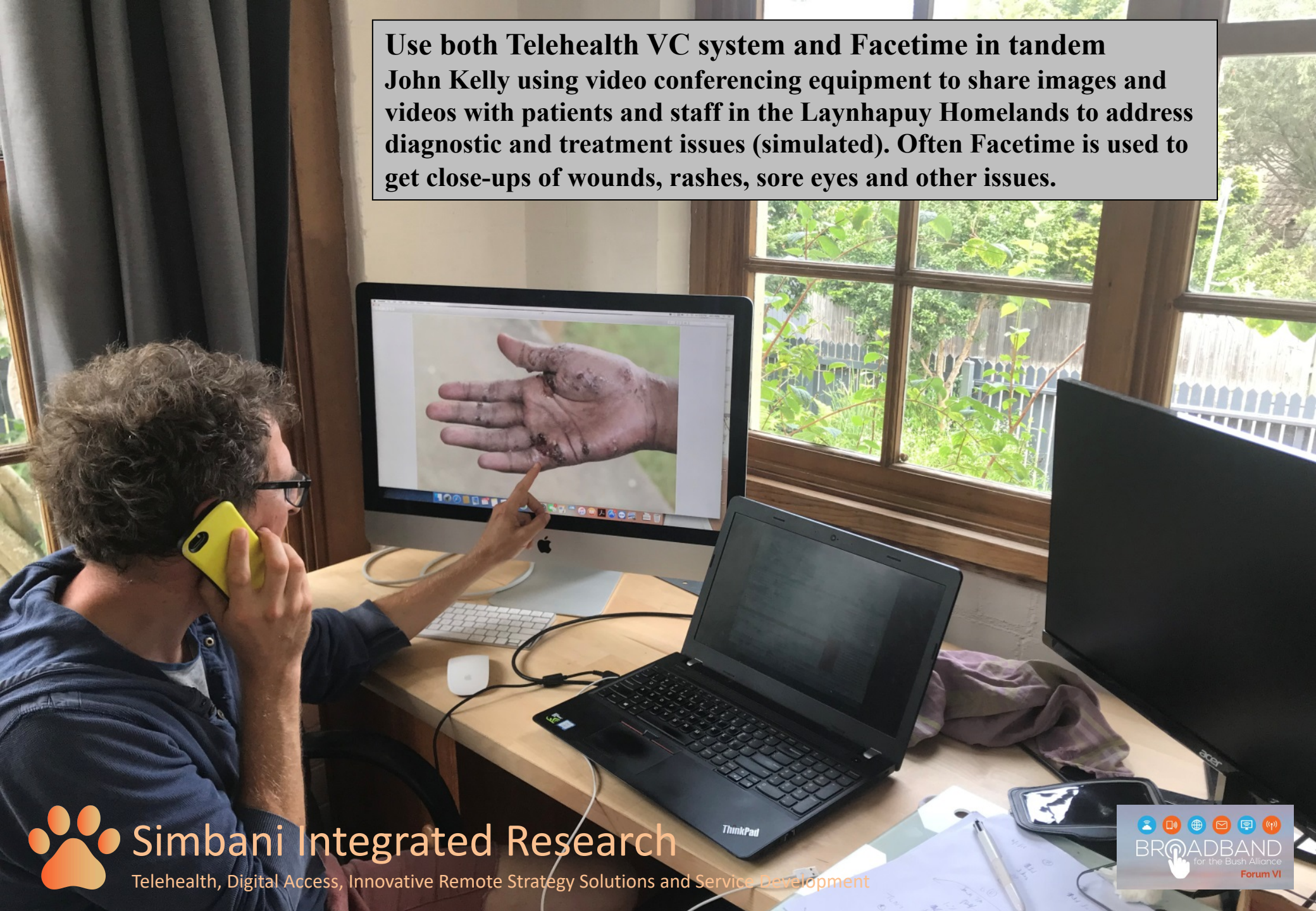
Simbani Integrated Research

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





**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.**



Simbani Integrated Research

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

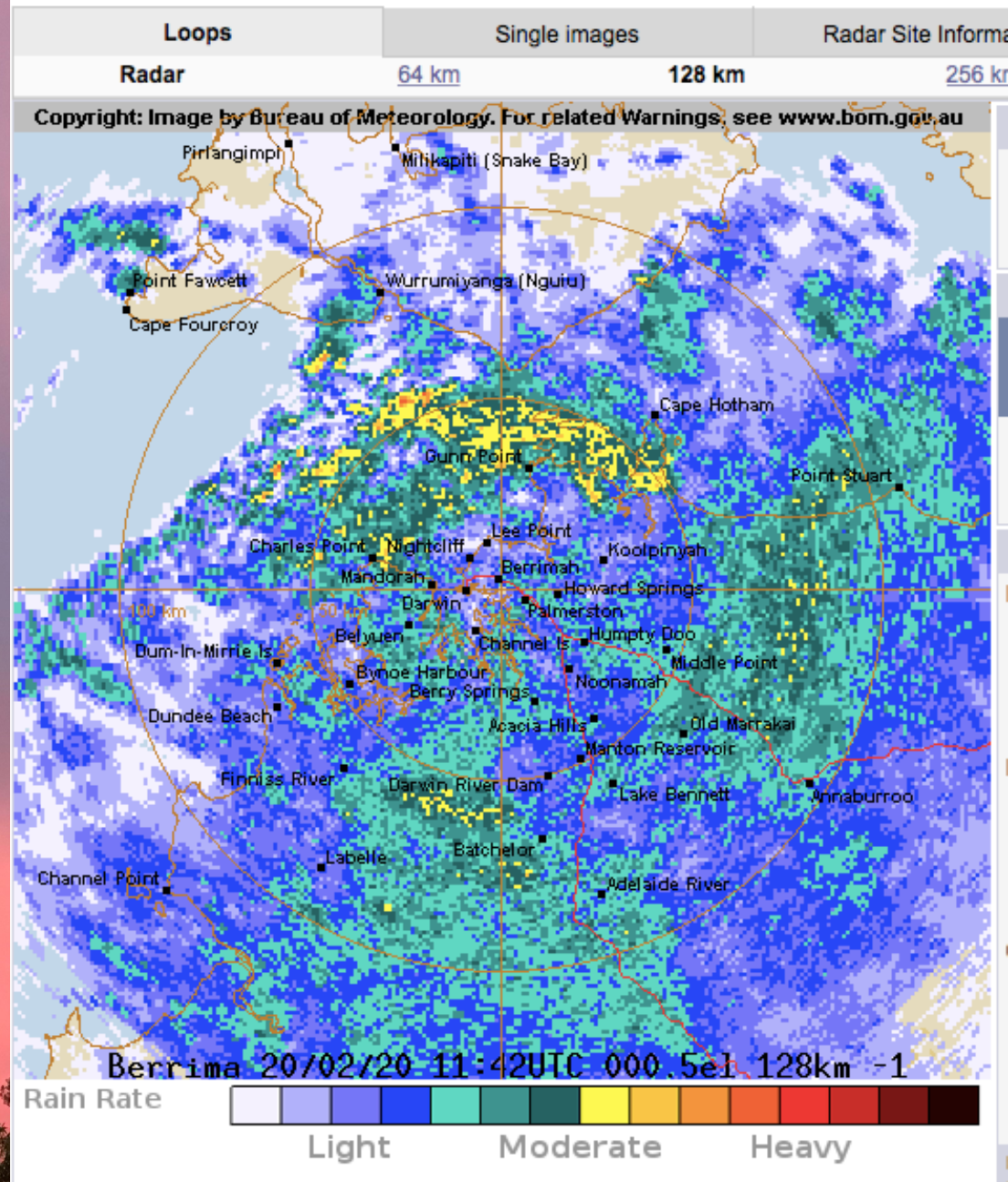


SkyMesh:

- 2 Sky Muster™ Plus services 35 kms from Darwin
- Dec & Jan.
- Tested performance 2019/20
- Wet season
- Ookla speed test
- How did it function in Monsoon?

128 km Darwin (Berrimah) Radar Loop

[View the current warnings for the Northern Territory](#)



Weather Index:

- Testing done between 16/12/19 – 24/1/20.
- Further testing 3/3/20 – 16/7/20

Score	Rain	Cloud Cover	Wind
0	Nil	Nil, sunny	Not noticeable or light breeze
1	Very light drizzle	Light/patchy, some sun	Breeze
2	Drizzle	Mixed light & moderate	Moderate
3	Light rain	Moderate	Strong
4	Moderate rain	Dark	Very strong
5	Heavy rain	Very heavy cloud	Cyclone strong

Light monsoonal rain...



Assured rate 25 Mbps ↓ 5 Mbps ↑

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

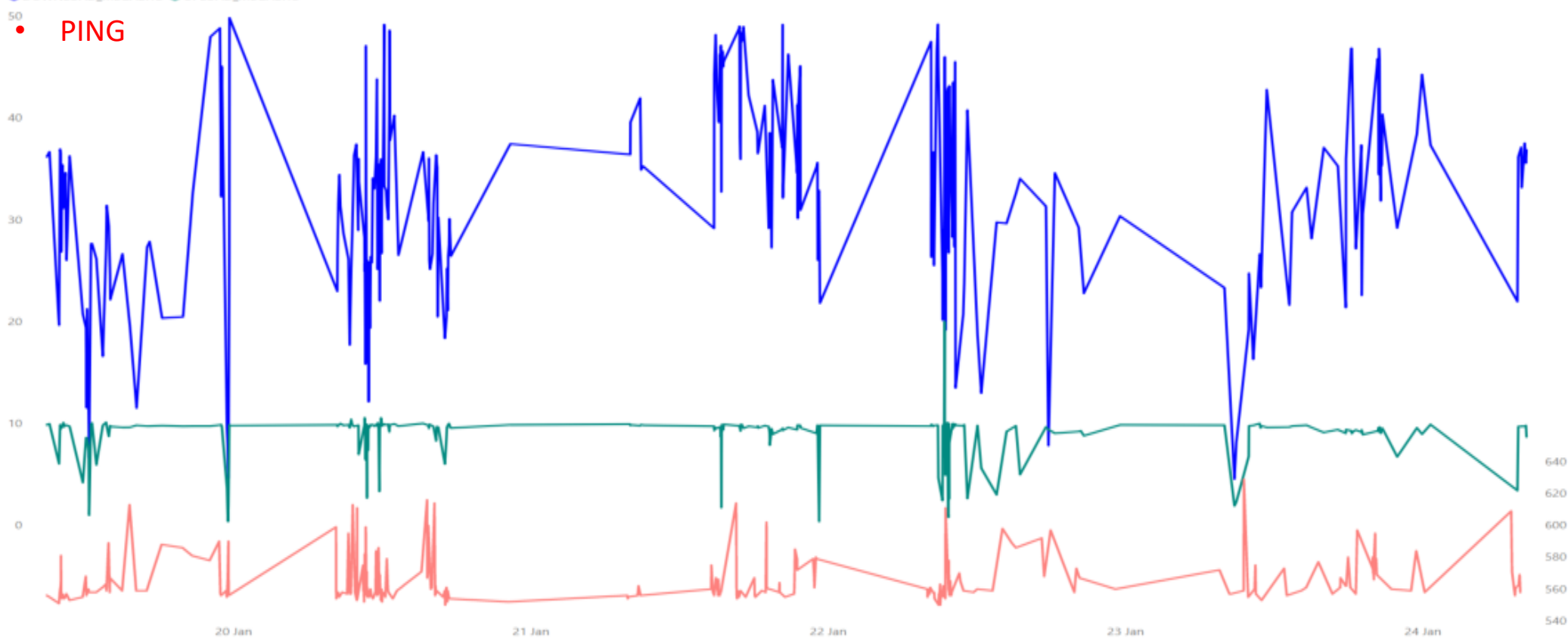


Monitoring during monsoonal conditions Jan 19-24

- Nearest BOM weather station – 425 mm
- Specifically targeted adverse weather
- Outages – 2-26 mins

● DOWNLOAD_MEGABITS ● UPLOAD_MEGABITS

● PING



Conclusions:

- Sky Muster Plus – works for telehealth (up to 3 concurrent VCs)
- Delay – minor, easy to work with
- Outages: Power failures, upgrades, weather events (2-26 mins)
- Noticeable delay satellite/satellite VC – but workable.



Simbani Integrated Research

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



Where to next???

- Monitoring 20/21 wet season – weather monitoring device
- Test Business grade NBN satellite
- CRCNA Project – develop a simple, robust, affordable telehealth system.
- Survey – see our website.



Simbani Integrated Research

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



Telehealth Considerations for National Standards

- Training of Providers and Practice Staff
- Room Setup
- Review and Quality Improvement
- Access to Technical Support in Practice
- Consumer Experience
- Interoperability with other systems
- Connecting or using other devices
- Security & Privacy
- Emergency/Ability to Escalate if Required
- Consent
- Purpose and Content
- Audit Trail
- Video Conferencing Software
- Telephone
- Billing
- Record of Consultation
- Asynchronous Consultations



Simbani Integrated Research

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



Telehealth Recommendations

- Use technology accessible to, and usable by, the patient and other health organisations.
- Use technology that is recommended by, or available from your health support organisation (e.g. Peak Body, Medical College, Primary Health Network)
- Protect the identity of patients when using commercial service or social media networks.
- Ensure no health information is retained by the commercial service provider or social media network.
- Adequate network capacity.
- Timely access to technical support.
- Comply with Privacy policies for GPs.



Simbani Integrated Research

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



Required features and functionality of healthcare focused videoconferencing.

- Internet connectivity
- High quality video rendering over low bandwidth connections
- Easy transition from phone to video
- Web RTC protocol use and browser-based options
- Easy scheduling and initiation
- Multiple camera/video stream input
- Remote End Camera Control
- Wellness monitoring



Simbani Integrated Research

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



List of Software

- BigBlueButton
- Bluejeans
- ClickMeeting
- Coviu
- Facetime
- Google Duo
- Gotomeeting
- Lifesize
- NTCS
- Pexip
- RingCentral Video
- Skype
- Slack
- T2Vu
- Teams
- U Meeting
- Viber
- Webex
- WhatsApp
- Zoom



Simbani Integrated Research

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



Patient Needs

- Clinical Patient Data System Integrations
- Security-HIPAA compliant
- Ease of Use
- Performance
- Cross platform
- Fancy toy features:
- Backgrounds
- Filters to make you look better
- Recording
- Multiple video inputs
- Far End Camera Support
- Easy scheduling and initiation
- Works well over satellite



Simbani Integrated Research

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



Disruptive Impacts.

- Digital Intelligence/Inclusion/Evolution/Hygiene/Trust/Poverty
- 100m people in India have gained 4G mobiles in 6 months in 2016 due to cost, some plans are being offered at \$1 a month.
- \$50m fine for illegal sales practices of telecommunications company.
- “The body is the interface” (BBC Digital Planet, 2020)
- Post-Covid move towards rural and regional living.
- Work from home.
- Star Link (500kms vs 35,000kms)



Simbani Integrated Research

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



Thank You!

**Marianne St Clair
David Murtagh**

marianne@simbani.com.au

dave@simbani.com.au

www.simbani.com.au

0427 555 484



Dundee Beach, NT



Simbani Integrated Research

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

