



Remote Teleradiology Assessment in a Screening Program

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Overview of Presentation

- Queensland background
- Challenges: rural and remote areas
- Townsville pilot
- Radiologist perspective
- The role of the State Coordination Unit
 - 2 additional sites (Rockhampton and Wide Bay)
- 4 years on – where to from here?

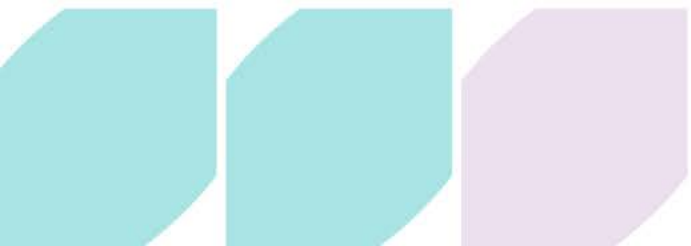




Less centralised population with significant populations in regional cities such as **Townsville**



State capital **Brisbane**, located in southeast Queensland.



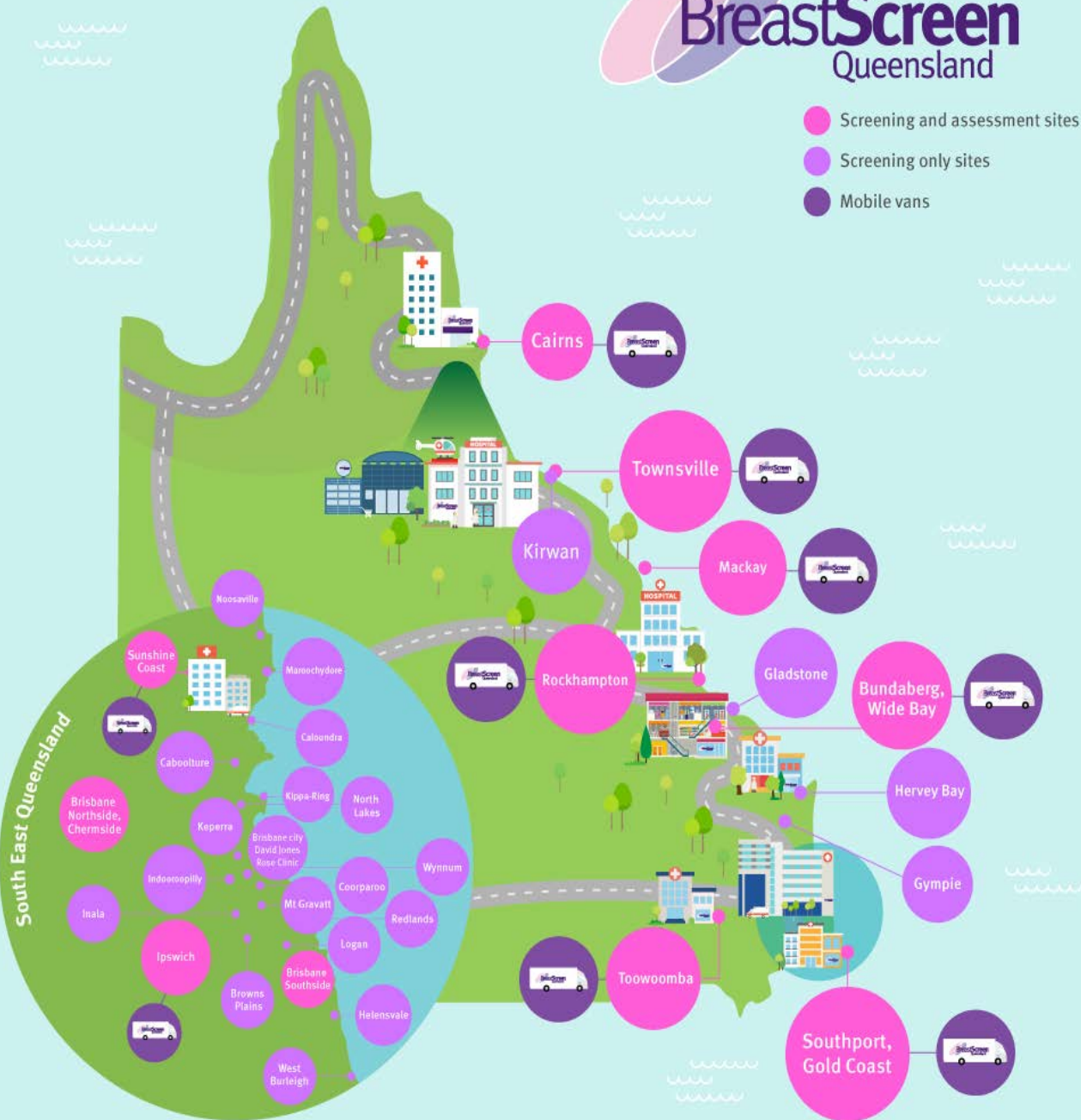
Remote Teleradiology Assessment in a Screening Program

Challenges

- Inability to fill vacancies (recruitment/retention)
- Reliance on temporary clinicians
- Reliance on fly-in/fly-out radiology workforce
- Demography of workforce
- Staff upskilling, particularly for sonography and medical officers (eg: ultrasound guided biopsies) & in using technology
- Technology
- Deskilling of local staff

BreastScreen Queensland

- Screening and assessment sites
- Screening only sites
- Mobile vans



What is Remote Teleradiology Assessment?

- An assessment clinic is conducted with the radiologist participating remotely via telehealth facilities.
- Mammographic images are able to be viewed remotely in 'real time' via Picture Archiving and Communication System (PACS).
- Videoconference equipment allows remote radiological review in real time of ultrasound scanning

Townsville



Context



- **Townsville Service**
- **Screening Activity
~16,000 per year**
- **Assessment Activity
~1,000 per year**
- **3 Screening Units +
Mobile**

High Achievers

- Consistently meeting all Level 1 Cancer Detection NAS, despite small sample size
- Consistently high participation rates
 - 2015-2016 50-69yrs
 - All women 66.5%
 - ATSI 57.2%
 - CALD 67.5%
- Mount Isa Assessment Clinics since 2013

Remote Radiology Trial - Genesis



- In 2012
- Service only had 1 local Radiologist
- Pre-PACS
- Film sent to other Services via courier for reading (thank you)

Remote Radiology Trial - Genesis

- Accreditation Site Visit, 2012
- Service achieved all Level 1 NAS except for Time to Assessment – 35% in 2012 within 28 days
- Result: Two Years Accreditation with High Priority Recommendations

Remote Radiology Trial - Genesis

- Service flying in radiologists from SE Queensland
 - Sporadic, inefficient and costly
- Women facing extensive delays for assessment – increased levels of anxiety and delaying cancer diagnoses and treatment
- Difficult for staff – increased enquiries and consumer complaints

Remote Radiology Trial

- PACS implementation in October 2012 facilitated radiological reading from other BSQ Services in the State
 - BSQ Statewide Coordinated Reading Model (SCRM)
- Also allowed radiologists from other BSQ Services and from SCU to review real time images from Assessment

Remote Radiology Trial

- Service's Senior Medical Officer Dr Janet Lengren conceived of the idea to trial assessment clinics with a remote radiologist
- BSQ SCU supported idea
- Trial approved by BSQ State Accreditation Committee (SAC) and BSA National Quality Management Committee (NQMC) with conditions

Remote Radiology Trial



- Trial commenced in May 2013
- To Date:
 - 158 Remote Radiology Clinics
 - 2,157 women assessed remotely
 - Ratio of remote to non-remote clinics and clients roughly

Remote Radiology Trial Conditions

- Local Clinical Governance Committee to ensure quality and safety not compromised – Chaired by BSQ State Radiologist
- Robust Operating Guidelines
- Remote radiology clinic to only be scheduled when the local radiologist is unavailable

Remote Radiology Trial Conditions (cont)

- BSQ State Radiologist or nominated representative to be the only radiologist participating in trial
- Detailed evaluation of success of trial to include analysis and monitoring of BSA NAS to ensure quality and performance is maintained
- CV's of all members of assessment team to be endorsed by Clinical Governance Committee

Remote Radiology Trial Conditions (cont)

- Informed consent to be obtained from all clients participating in trial
- Remote radiologist must be known to the assessment and team and have reciprocal confidence in each other – The Service schedules at least one clinic per year where each of the radiologists involved are physically present

Remote Radiology Trial



BSQ Label here

Consent for Assessment Procedures with remote radiologist Date of visit
Episode No.

*Please fill in this form before you have any tests
If you have any concerns or if anything is unclear, please ask the BreastScreen staff.*

Following my screening visit, a possible abnormality was noted on my mammogram; and/or at my screening visit I reported a significant symptom. I understand that I have been recalled so this can be assessed by one or more of the following tests:

- extra mammographic views
- clinical breast examination
- ultrasound
- fine needle aspirate (FNA)

I have read, or had explained, the following Information Sheets:
- Assessment Procedures Information Sheet (BSQ047)
- Fine Needle Aspiration (Biopsy) Information Sheet (BSQ006)

I have had explained to me that the assessment clinic today will be performed with a senior radiologist who is able to look at all my images in real time but is located at a site other than this service.

This section must be signed before you can have these tests.

I consent to have these further tests performed today.

I also consent to and understand that:

- my breast images (includes ultrasound) and results will be sent to those doctors involved in my ongoing care should this be needed
- my personal details and results will be recorded in a secure and confidential central database so that I can be notified of my results, for follow up as appropriate and for future screening
- information relating to my assessment visit will be used by the BreastScreen Queensland Program for monitoring and evaluation purposes and my name will not be used in any reports or published statistics
- my breast pathology reports and information about my ongoing care following assessment will be provided to BreastScreen Queensland.

This section must be signed before you can have these tests.

Signed: _____ Date: / /

Witness: _____ Staff Code:

OFFICE USE ONLY: GP details: _____

- Modified Consent for Assessment form for remote radiology clinics

- Clinical Nurses explain process to clients via telephone when booking



Remote Radiology Trial



Name	_____
Address	_____
Ph No.	_____
D.O.B	_____
ClI_id.	_____
Date of visit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Episode No.	<input type="checkbox"/> <input type="checkbox"/>

5. Mammography Results
(1 allowed per lesion)

	Lesion 1	Lesion	Lesion
Side of Lesion:	R <input type="checkbox"/> L <input type="checkbox"/>	R <input type="checkbox"/> L <input type="checkbox"/>	R <input type="checkbox"/> L <input type="checkbox"/>
Mass	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
Calcification	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
Architectural distortion	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
Non-specific density	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
Other	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
Grades:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(No significant abnormality = 1; Benign = 2; Equivocal = 3; Suspicious = 4; Malignant = 5; Unknown=0)

Signature: _____ Date: / / Reader Code:

7. Ultrasound

Ultrasound performed by: _____
Sign: _____
Date: / / Sonographer Code:

	Lesion 1	Lesion	Lesion
Side of Lesion:	R <input type="checkbox"/> L <input type="checkbox"/>	R <input type="checkbox"/> L <input type="checkbox"/>	R <input type="checkbox"/> L <input type="checkbox"/>
Description of Lesion:			
Normal breast	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
Cystic	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
Solid, probably benign	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
Solid, probably malignant	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
Indeterminate	<input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
Calcification	<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6
Other	<input type="checkbox"/> 7	<input type="checkbox"/> 7	<input type="checkbox"/> 7
Result:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(No significant abnormality = 1; Benign = 2; Equivocal = 3; Suspicious = 4; Malignant = 5; Unknown=0)

Signature: _____ Date: / / Reader Code:

10. Other Procedures Performed

	Lesion 1	Lesion	Lesion
Side of Lesion:	R <input type="checkbox"/> L <input type="checkbox"/>	R <input type="checkbox"/> L <input type="checkbox"/>	R <input type="checkbox"/> L <input type="checkbox"/>
Specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(No significant abnormality = 1; Benign = 2; Equivocal = 3; Suspicious = 4; Malignant = 5; Unknown=0)

Signature: _____ Date: / / Reader Code:

- Modified 1 page Assessment form which is emailed to remote radiologist day before each clinic
- Radiologist emails back completed forms at end of each clinic



Remote Radiology Trial

- Sonographers report on modality able to be viewed by remote radiologist on PACS after each ultrasound

Townsville



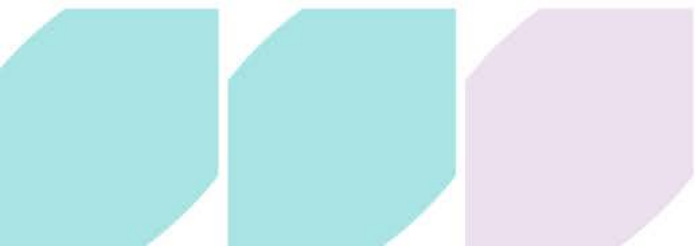
Benefits

- Service is achieving all Level 1 and interval cancer NAS and was awarded 4 Years Accreditation in 2014
- Time to assessment is consistently above 90% within 28 days and in some months 100%
- Feedback from clients is overwhelmingly positive – most could not believe that it was not happening before
- The Townsville population is used to telehealth technology improving many other areas of service provision

Benefits

- Local BSQ staff feel like they are part of something truly innovative and inclusive
- We also feel like we are providing a higher quality and safe service to our clients who are receiving results of assessment much faster
- The Service remains committed to scheduling local radiologists whenever possible

NAS 4.2.1 – Time to Assessment



2014 Accreditation Site Visit Report Feedback

- ‘The remote assessment clinic functioned extremely effectively’
- ‘The on-site sonographer is clearly a skilled sonographer’
- ‘The site visitors felt confident that the remote assessment clinic, as set up by the Service, is of the same quality as a standard assessment and is suitable for all clients who require assessment’

Townsville



Key Criteria for Remote Site Success

- Staff on site
- Communication
- Documents
- Results
- Training

Staff on Site

- Medical Officers trained to perform Stereotactic and Ultrasound guided biopsies
- Radiographers skilled in a broad range of techniques
- Sonographers trained in Breast imaging
- Clinical Nurses skilled in Breast examination
- Radiologists experienced in performing assessments

Townsville

Rockhampton

Wide Bay



Communication

- On site assessment team regularly communicate via telehealth
- Radiographer - films
- Sonographer - findings

The arrow indicates the ultrasound image transmitted



Documentation

- Films
- Ultrasound
- Paperwork

Before andafter

Results

- MO phones with results
- Correlation

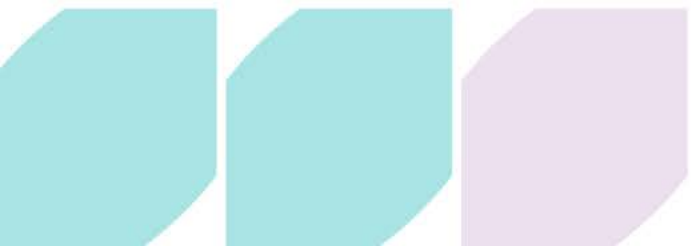
Training

- Upskilling by observation at larger clinics
- Important for initial onsite visit by Radiologist to perform assessment clinic to meet the staff and develop rapport

Role of State Coordination Unit



Statewide Network



Telehealth Equipment

Role at the State level

- Statewide Workshop with sites:
 - Consent for assessment and client information sheet
 - Modified assessment form
 - Data entry processes / new assessment unit codes
 - Developed State Operating Procedures Manual
 - Pre-planning → clinic → post-clinic processes
- Funded all equipment
- Undertake training of staff and keep records
- Assisted development of national guidelines

State Coordination Unit's Role

- Data Monitoring and Reporting:

Clinical Outcomes	Remote	Remote %	Onsite	Onsite %
No. Remote Clinics Held	165		146	
Clients Assessed	1794		1445	
Lesions	2421		1619	
No. Core Biopsy	576		491	
Stereo	208	34.8%	175	34.8%
Ultrasound	360	60.3%	307	61.0%
FNA - US	19	3.2%	12	2.4%
Unsuccessful Biopsy	9	1.5%	9	1.5%

State Coordination Unit's Role

- Data Monitoring and Reporting:

Client Outcomes	Remote	Remote %	Onsite	Onsite %
Definitive Treatment	269	13.2%	220	13.6%
Diagnostic Open Biopsy	52	2.6%	44	2.7%
Further Assessment	54	2.7%	35	2.2%
1 year rescreen	219	10.8%	181	11.2%
2 year rescreen	1437	70.8%	1139	70.4%

Benefits

- Contributing to research
- Aligning to strategic directions of Department
- Standardisation is really important
- Improve timeliness for services – meet NAS
- Continue to provide high quality and safe services
- Happy clients and workforce
- Less reliance on fly-in/fly-out arrangement (enables flexibility)
- Minimise impact of limited supply of radiologists

Contact Details

