



# BUILDS (Bridging the Urban and regional Divide in Stroke care): a pilot Telestroke Unit service

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# Disclosures



Funding for the pilot was provided through an AVANT Foundation grant.

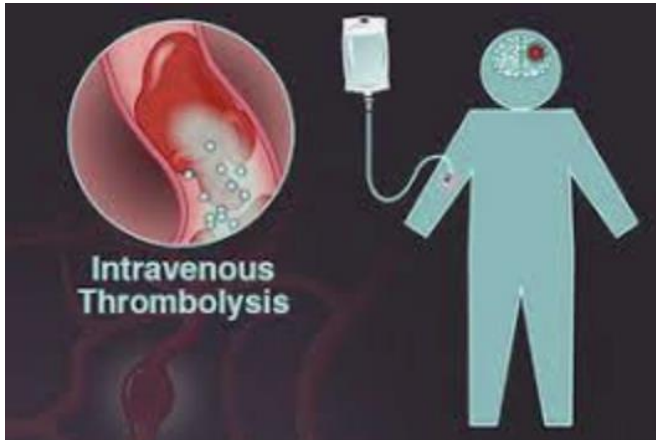
# Conflict of interest

Philip Choi - Nil

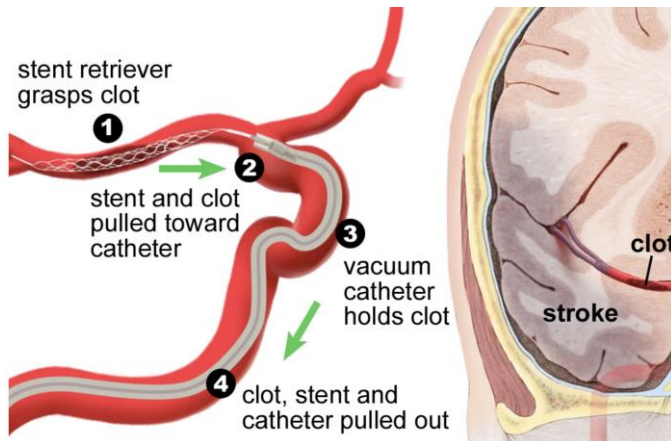
Lauren Arthurson - Nil



1990s – Stroke Unit Care



1995 - Intravenous thrombolysis



2015 – Endovascular clot retrieval

## Small



Basic medical complaints

## Medium



Surgeries, most medical problems  
Coronary Care Unit  
Stroke Thrombolysis - VST  
(Victorian Stroke Telemedicine)

## Large



Sub-Specialised Units:  
Liver Unit  
Burns Unit  
Stroke Clot retrieval

**Stroke Unit ----- Stroke Unit**

27,428 Australians experienced stroke for the first time in their lives in 2020  
= One stroke every 20 mins



# Stroke Unit Care for all Stroke patients



## Stroke Team Care

Model of care typical in regional centres of Australia, maximising existing available resources



### Generalist care

Junior doctors supervised by generalist physicians



### Allied Health

Generalist clinicians who may not have specialist expertise in Stroke



### Standard Nursing

Nursing with no identified nurse stroke champions



### Limited specialist access

Specialist care is not routine

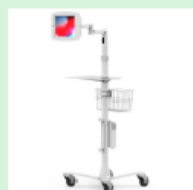


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## BUILDS

Providing stroke neurology expertise to local teams



### Virtual Stroke Neurologist

Video consult for all new stroke patients



### Education program

Comprehensive site specific education modules

## Stroke Unit Care

Coordinated care provided by nurses, doctors, and multidisciplinary team with specialist knowledge



### Specialist care

Patient consulted by Stroke Neurologist or Stroke Physician



### Professional development

Education opportunities for all team members



### Stroke Coordinator

Dedicated team member to support both the team and the patient and coordinate care



### Quality Assurance

Local audits and benchmarking to comparable health services

People who receive Stroke Unit Care are more likely to be **alive** and **living at home** 12 months after their stroke\*.



\* Absolute risk reduction: 2 more people survived, 6 more living at home or living independently per 100 patients compared to conventional care (Langhorne P, Ramachandra S :Cochrane Database of Systematic Reviews 2020)

# NATIONAL STRATEGIC ACTION PLAN FOR HEART DISEASE AND STROKE

September 2020

## 2.2.4

### Improve access to specialised stroke units

Given the substantial evidence that organised inpatient stroke units benefit stroke patients, we need to ensure equitable access to consistent quality care in these units, including for priority populations, with culturally appropriate access for Aboriginal and Torres Strait Islander peoples and CALD populations.

- Map existing stroke units to stroke incidence and population need and develop a plan to improve stroke unit access from 67% to 90%.
- Develop a national accreditation framework based on national standards for stroke unit services.
- Align accreditation of stroke units with financial incentives, and, where necessary, provide support for stroke units to improve their quality of care.
- Ensure stroke units are adequately resourced with appropriate multidisciplinary care teams including stroke care coordinators and allied health staff.

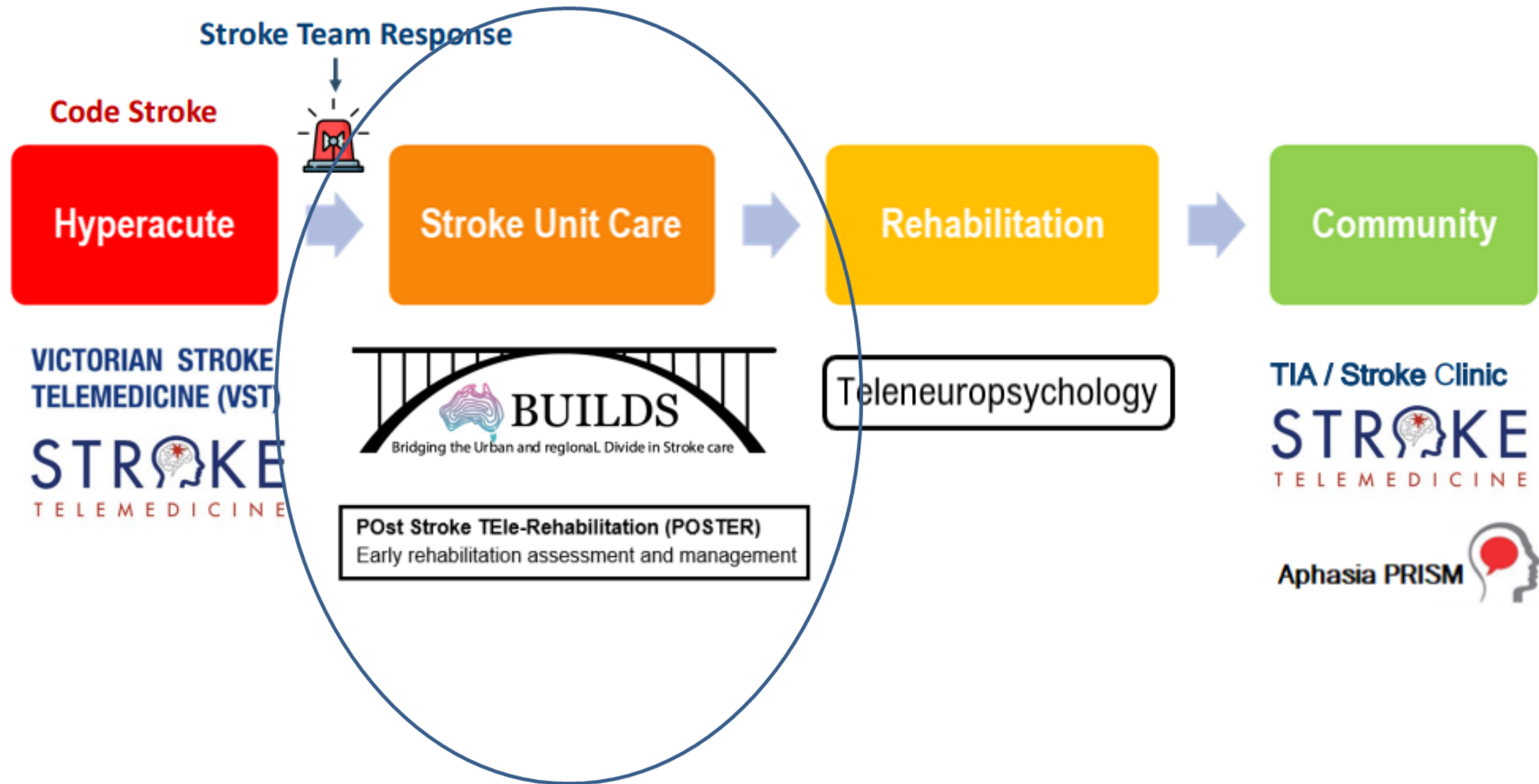
















## **AIM: To assess the feasibility and utility of a novel Tele-Stroke Unit service**

- Provision of stroke expertise for all confirmed or suspected stroke patients
- Appropriate resourcing of a local Stroke Coordinator
- Development of on-demand education modules to build capacity of the local team
- Quality assurance monitoring through monthly stroke case review meetings





## Tele-Stroke Unit Consultation Record

### Patient Information

Patient Name	
Date of Birth	
Age	
Patient ERH UR	

### Telemedicine Consult Details

Consultant	Dr Philip Choi
Consult Date	25-03-2022
"Paper round" pre-Consult (mins)	3
Telehealth Consult with Patient (mins)	5
History	Headache Tuesday. Dizzy and foggy. on an off since then. Also some tingling in the right hand and arm. No history of migraine but has had headaches
Examination Findings	nil
Imaging Results	NCCT and CTA normal. MRI brain - small cortical left SWI change ? acute/subacute ? old
Working Diagnosis Before Consult	Migraine
Working Diagnosis After Consult	Bleed
Stroke Mechanism	Unknown
Plan	<p>Unusual for CTB to miss an acute haemorrhage - suggest discussing with the radiologist:</p> <ol style="list-style-type: none"> <li>1. Could the bleed be old</li> <li>2. What are we looking for in a post contrast MRI.</li> </ol> <p>Please call me back to discuss plan after talking to radiologist.</p>
Comments	Interesting case. right side tingling was not her main symptoms. It was noted on the indication for the MRI (in the report).

## Consultation record

- Generated from data entered by Stroke consultant into REDcap
- Summary of history, results, examination finding and diagnosis
- Plan clearly documented
- Once complete automatic email through to local team



## BUILDS (Nov 2021 – Nov 2022)

120 consultations were conducted on 85 patients

➤ 85 initial / 35 follow up

Median age = 73 (IQR 65 – 92)

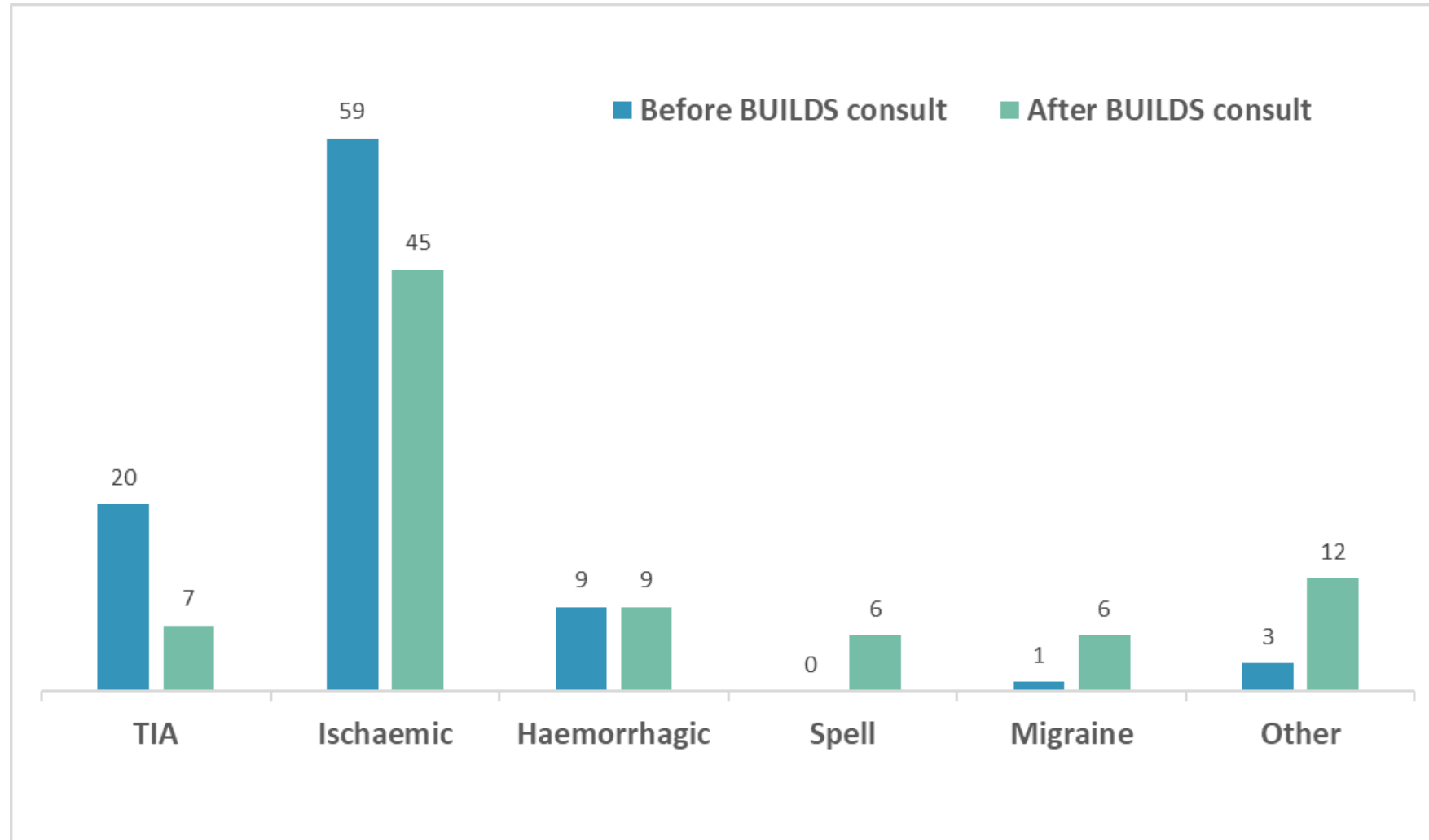
Total consultation time: 20 minutes (IQR 21 – 27)

➤ Pre-consultation : 10 minutes (IQR 10 - 15)

➤ Patient consultation : 10 minutes (IQR 0 - 15)



# Diagnosis revised in 28% of consults





4 inter hospital transfers were cancelled and 1 urgent transfer facilitated



10 MRI scans, 1 CTB, 2 Carotid Dopplers were thought not to be necessary and therefore cancelled



Changes to medications occurred in 47% of consultations (56/120)



Patient centred counselling was provided in 51% (61/120) of consultations at the bedside

# Discharge information

Pre-BUILDS median length of stay = 4 days (IQR 2-6)

BUILDS median length of stay = 3 days (IQR 2-6)

Pre-BUILDS discharge care plan: 71%

BUILDS discharge care plan: 87%

## **Discharge destination:**

- 43% home
- 39% inpatient rehabilitation
- 6% community rehabilitation
- 5% residential care
- 7% other



“

*A wonderful service for regional patients. Thanks to the specialist for his kind manner and clear explanations. It was much easier seeing a specialist without a long wait or travel.*

*Patient & wife*

Patient satisfaction (n=37)	Strongly agree	Agree
I could hear the specialist well	81%	11%
I could see the specialist well	86%	11%
I felt comfortable talking to the specialist	92%	5%
I understood what was explained to me by the specialist	89%	5%
Consultation with the specialist reduced my worry	73%	16%
Overall, I am satisfied with this telehealth system	76%	8%
Telehealth stroke consultation is an acceptable way to receive specialist stroke services for patients living in regional areas	86%	5%

“ ***I felt personally more comfortable managing stroke at ERH knowing expert advice is available daily***  
***Medical Registrar***

Staff satisfaction (n=27)	Strongly agree	Agree	Somewhat agree
The equipment was suitable for the consultation	84%	12%	4%
The ‘paper round’ was educational and I have gained knowledge	84%	8%	4%
BUILDS has improved the team’s overall efficiency and workflow	68%	28%	4%
I feel more confident managing stroke patients as a direct consequence of the BUILDS service	40%	20%	36%
I felt supported in my care of stroke patients with the BUILDS service	56%	24%	16%
BUILDS is comparable to inpatient care at a metropolitan stroke centre	24%	20%	12%







# Achievements

- ✓ BUILDS enabled **Stroke Unit Certification**
- ✓ **Expansion** - North West Regional Hospital, Tasmania & Central Gippsland Health, Sale, Victoria
- ✓ 2023 BUILDS transitioned to Victorian Telemedicine Inpatient Service (VTIS) supported by VST = **Business as usual model**





# Summary

-  BUILDS was well received by the patients, family and the team at ERH
-  Potential cost savings were evident
-  Patients felt reassured and valued receiving care close to home
-  Expansion to additional sites will enable further evaluation and refinement
-  Transition from BUILDS to Victorian Telemedicine Inpatient Service (VTIS) – business as usual model
-  Stroke Unit Certification obtained

[www.strokeunitforall.org](http://www.strokeunitforall.org)



***“A Tele-Stroke Unit model can provide regional Australians with the Stroke Neurology expertise that is essential for maximising stroke recovery. We believe Stroke Unit Care should be available to all survivors of stroke regardless of where you live”***

**BUILDS project team**

Supported by:



## Avant Foundation Grant 2020



## Acknowledgements:

- Stroke Team & Executive, Echuca Regional Health
- Victorian Stroke Telemedicine, Ambulance Victoria

