Government of **Western Australia**
North Metropolitan Health Service
Sir Charles Gairdner Osborne Park Health Care Group

Seeing the Bigger Picture: Feasibility of Using Telepractice to Remotely Conduct Videofluoroscopic Swallowing Studies (TeleVFSS) to Support Regional Dysphagia Management: Stages 1 and 2.

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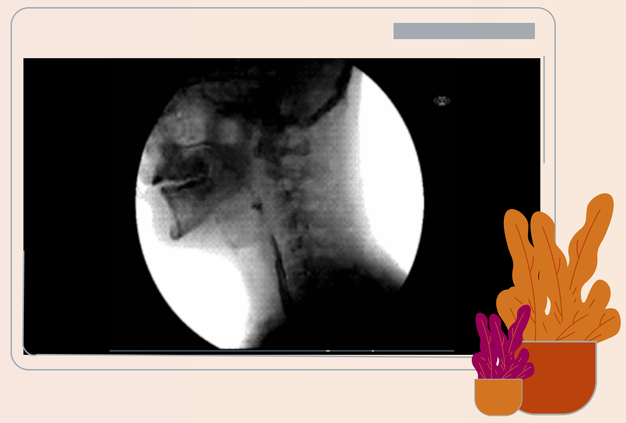
Background:

Across regional WA, patients with swallowing difficulties face a critical barrier: limited access to Videofluoroscopy Swallow Studies (VFSS)—the gold standard for diagnosing and managing dysphagia.

Dysphagia can cause serious complications such, as aspiration pneumonia, malnutrition, dehydration, and hospitalisation if not accurately diagnosed [1,2].

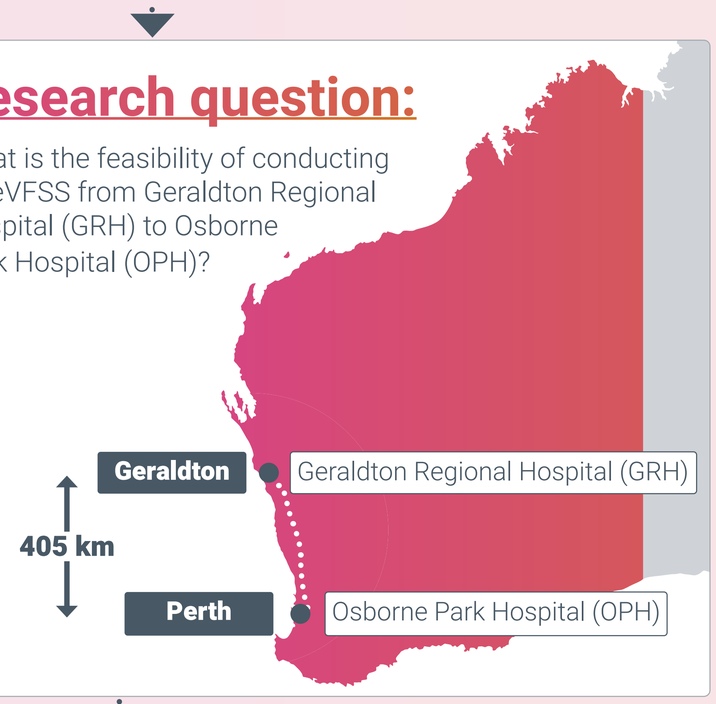
Regional hospitals may have the required radiological equipment but lack VFSS credentialed speech pathologists.

Telehealth to conduct VFSS remotely [3] (TeleVFSS) offers an innovative solution.



Research question:

What is the feasibility of conducting TeleVFSS from Geraldton Regional Hospital (GRH) to Osborne Park Hospital (OPH)?



Stage One
Livestreaming VFSS images to an external on-site computer (Metro Hospital)

Stage Two
Supported TeleVFSS with a concurrent livestream (Regional to Metro Hospital)

Stage Three
Conducting TeleVFSS without an on-site VFSS credentialed clinician **(Currently underway)**

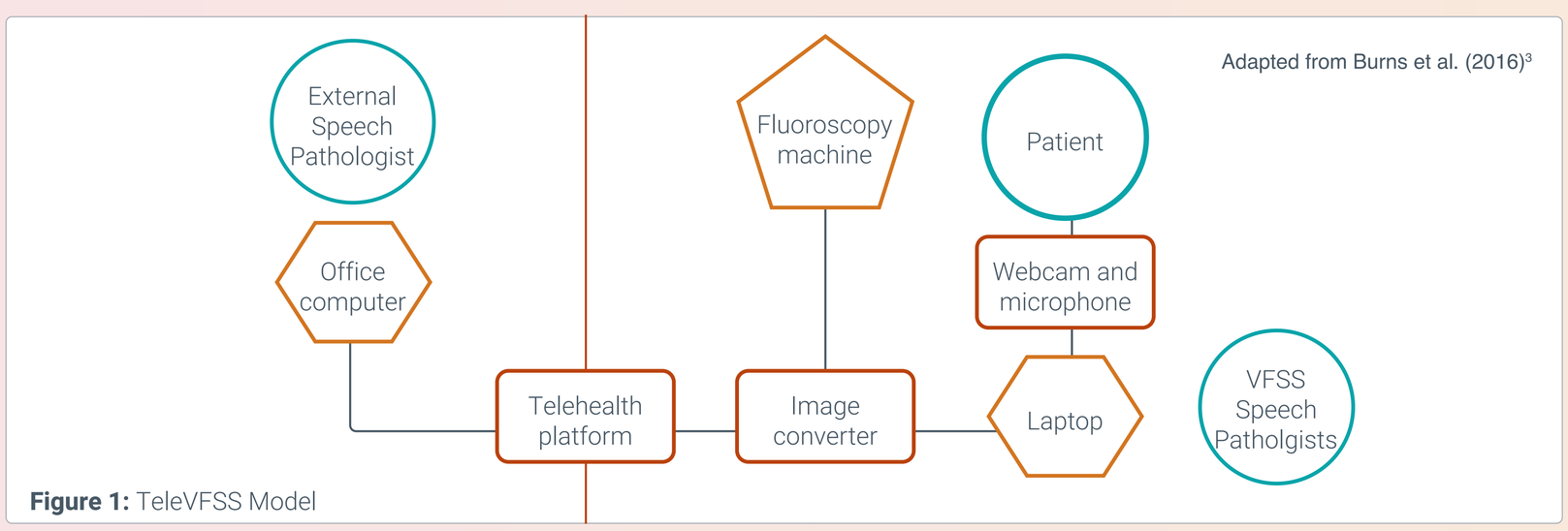


Figure 1: TeleVFSS Model

Method:

The feasibility of obtaining adequate video streaming quality via TeleVFSS concurrent livestream was assessed by the following measures:

- TeleVFSS Image Rating Scale: achieve a score of 4 or more out of 5
- Penetration Aspiration Score (PAS)[4]: to effectively attribute a PAS score of 80% or more of swallows during livestreaming
- Clinic duration time (< or = 30 mins) and radiation exposure time (< or = 3 mins) consistent with usual care

Stage 1:

On-site feasibility testing of three video streaming platforms, across 10 VFSS trails at OPH. On-site VFSS credentialled speech pathologist rated each trial over livestream.

Stage 2:

A supported VFSS clinic conducted at GRH and livestreamed to OPH. A VFSS credentialed speech pathologist was present at both sites.

Results:

Stage 1 (n=10) Healthdirect (n=5)

100%
PAS score – attributed to 80% or more of the images

100%
TeleVFSS Image rating Scale - scored 4 or more

Stage 2 (n=5)

100%
Healthdirect – achieved 100% (5/5) in both objectives

*Importantly in both stages **clinic duration** and **radiation exposure** time remained in usual care limits.*

Discussion:

TeleVFSS involving concurrent livestream to an external computer at a distance of 405 kilometres yielded adequate image quality to enable an off-site VFSS credentialled Speech Pathologist to assign clinical ratings.

This project demonstrated that TeleVFSS may be a feasible solution for regional clients to access VFSS, potentially improving outcomes for clients with dysphagia and reducing associated health care costs.

References:

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