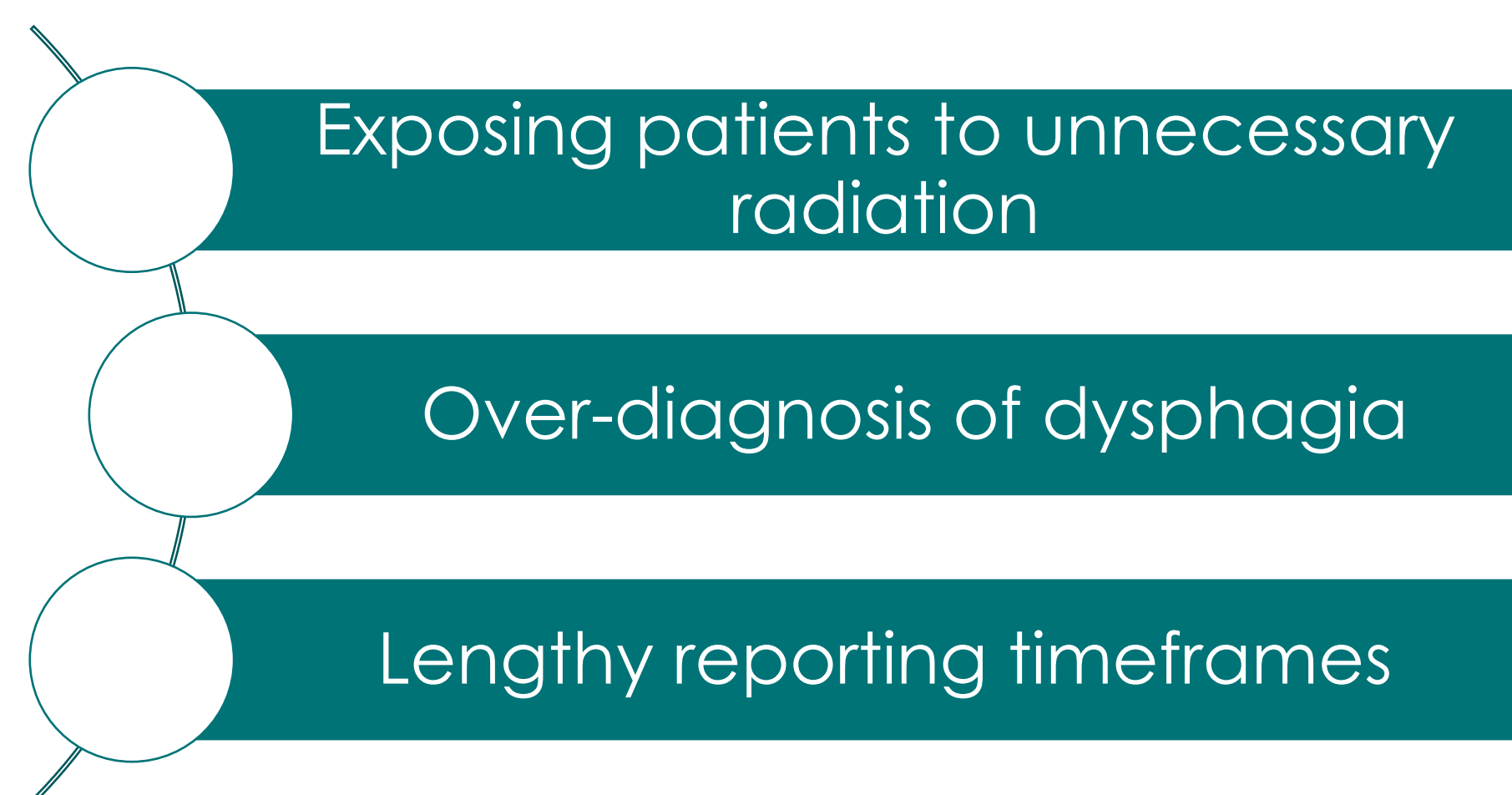


Improving Efficiency and Accuracy of Speech Pathology Videofluoroscopy Swallow Study Delivery

Background

- Swallowing is an essential bodily function. Difficulties in swallowing can affect people of any age and can result in malnutrition, dehydration and pneumonia
- Speech Pathologists conduct Videofluoroscopy Swallow Studies (VFSS) to objectively assess and manage swallowing impairments
- VFSS are X-rays that allow for visualisation of the swallowing mechanism to provide more accurate assessment results. The patient is required to swallow food and fluids mixed with contrast
- Due to variability in training and experience of clinicians completing VFSS within the Northern Adelaide Local Health Network (NALHN) in South Australia, there were concerns regarding potential inconsistencies in VFSS processes and reporting, potentially leading to:

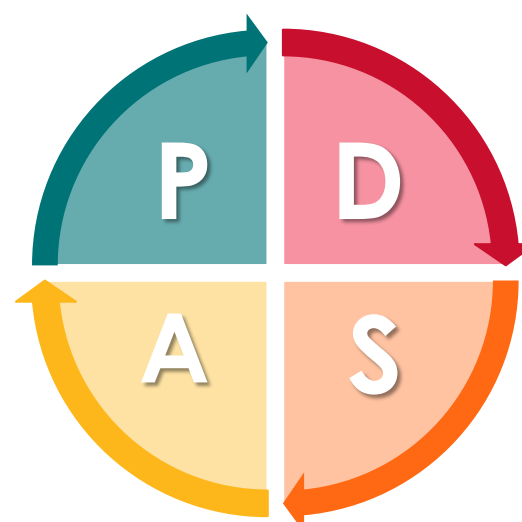


Aim

To align VFSS procedures with current evidence and improve efficiency and accuracy in VFSS reporting

Method

Design: A quality improvement approach was adopted using the PDSA cycle (plan, do, study, act)



Setting and participants: Acute and subacute Speech Pathologists working within NALHN who have completed the SA Health VFSS training program. Project commenced in 2020 and completed 2024

Intervention:

The following analysis was conducted:

- Benchmarking processes and reporting templates against other local and interstate health networks
- Literature review to evaluate current evidence base regarding identification of impaired swallowing parameters

Findings from this analysis informed the following initiatives:

- Revision of existing VFSS reporting template to improve usability and efficiency
- Development of a guideline to standardise patient trials across assessments and ensure accurate information is captured with the least amount of radiation exposure
- Creation of a VFSS rating tool to support clinicians in identifying the swallow function as 'normal', 'functional' or 'impaired'

Results

- There was limited evidence in the literature describing a specific guideline for standardisation of patient trials, but the literature did highlight the need for standardised practices in VFSS generally
- NALHN clinicians reported an improvement in readability and usability of the new VFSS reporting template, reducing time spent on completion of reports
- Evidence gathered from the literature review and benchmarking process formed the basis for norm ratings for the VFSS rating tool. This increased diagnostic accuracy and moved away from an "impairment-based" model of rating. Joint rating activities as a group of NALHN clinicians using the tool demonstrated an increase in inter-rater reliability
- Clinicians undergoing VFSS training reported more confidence in their skill development and improved clarity in processes

Outcomes

- New tools and templates developed reflect current evidence and processes followed by other local and interstate sites, improving accuracy and consistency between clinicians and ultimately patient outcomes
- Competent Speech Pathologists and clinicians undergoing VFSS training both reported improved efficiency and confidence in completing VFSS, with more accurate diagnosis of impaired swallowing parameters

Learnings/Future Adoption

- The new tools and templates have continued to be used since roll out in 2023-2024, and will be reviewed every 2 years to ensure adherence to current evidence
- The literature review revealed a significant gap in established protocols for VFSS. This project's approach in developing and implementing consistent minimum standards for patient trial items represents a first step in addressing this knowledge gap and improving clinical practice. Future projects should aim to establish a comprehensive, evidence-based guideline for VFSS
- The focus of the project was on the oral and pharyngeal stages of the swallow, however the literature supported Speech Pathologists completing oesophageal screening during VFSS. Future projects may investigate this further in liaison with medical imaging

Oral phase	VIDEOLUOROSCOPY SWALLOW STUDY RATING TOOL		Contributing factors
	Normal	Impaired	
Lip closure	Complete lip seal on cupid's bow Adequate stripping of bolus from a spoon	Anterior spillage evident but does not impact significantly on bolus, not impact significantly on bolus from a spoon Some difficult stripping the bolus from a spoon	Labial ROM, strength, or CNVI impairment
Lingual function and control	Bolus control maintained until bolus propelled into pharynx Minimal/no residue remaining in the oral cavity following transfer	Loss of oral bolus control which may result in lateral or sublingual bolus loss Transfer can be piecemeal Residue remains in the oral cavity following transfer. This may be effectively cleared with spontaneous lingual sweep or wash down SSP	Lingual ROM, strength Oral sensation CNVI and/or CNVII impairment Cognition
Bolus preparation and mastication	Effective mastication and complete break down of the bolus	Ineffective mastication time but adequate breakdown of the bolus	Dentition Cognition Mandible, buccal strength CNVI, VII, V
Glossopalatal seal	Complete seal with no premature spillage OR Some premature spillage or spillage into the oropharynx or valleculae however already liquid and dual consistency Some premature spillage to the hypopharynx/pyriforms however airway protection maintained	Some premature spillage to the hypopharynx (below valleculae) with solids however airway protection maintained	Base of tongue Velar strength CNIX and X

