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SGH Acute Stroke Dysphagia Screener – Safety and Clinical Value

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Background

Dysphagia is highly prevalent in acute stroke and can result in complications such as aspiration pneumonia^a. Screening tools are commonly used in acute stroke units to identify patients at risk of aspiration and restricting them to modified intake or no oral intake until a formal swallow assessment by a Speech Therapist (ST).

Since 2004, Singapore General Hospital (SGH) has been using a validated in-house dysphagia screener administered by trained nurses. Patients identified to be at high risk of aspiration are kept nil-by-mouth (NBM) while those with low risk are administered a water swallow test by nurses (Figure 1).

However, for certain patients with good function despite having aspiration risk factors, clinicians may override NBM status and allow nurses to proceed with water trials. Over the years, with changes to the training format and clinicians deviating from the pathway, safety and properties of the screener need to be re-evaluated. We conducted a clinical audit to answer the following questions:

Based on current screener administration:

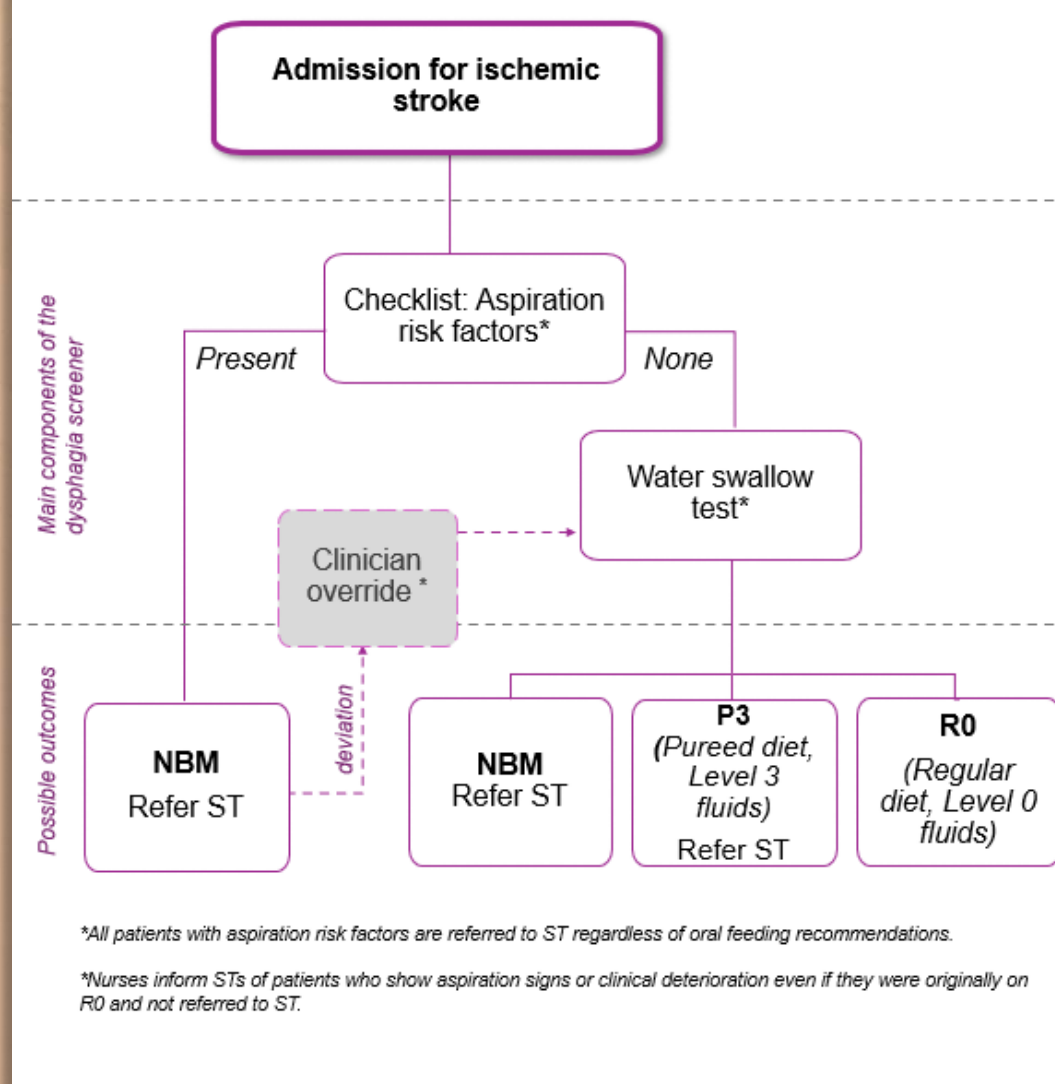
- (i) Do patients receive safe oral feeding recommendations prior to ST review?
- (ii) Were patients NBM or given modified diet unnecessarily?
- (iii) How does the SGH screener compare to other validated screeners?
- &
- (iv) Is deviating from the pathway unsafe?

Method

Data were retrieved prospectively from electronic medical records with no change to standard care.

Participants:	132 acute stroke admissions into SGH neurology ward between 1-31 March 2024
Inclusion Criteria:	Patients with ischaemic strokes and on the stroke coordinated care pathway
Exclusion Criteria:	Patients on the stroke coordinated care pathway who later had stroke ruled out
Outcomes:	1) Screener outcomes 2) STs' first diet and fluid recommendations post-screening 3) Screener sensitivity (Sn) and specificity (Sp) 4) Deviations from the screener pathway due to clinician override

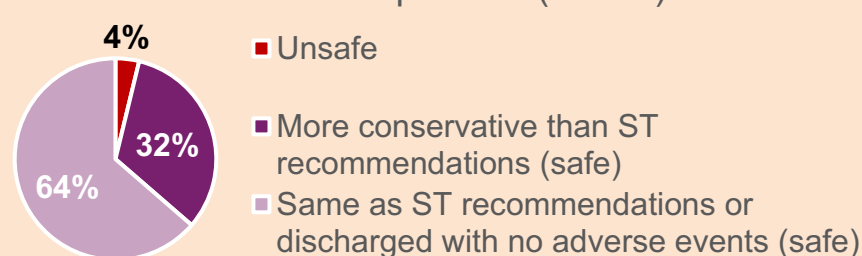
Figure 1: SGH Dysphagia Screener Workflow



Results

- i. 96% of all patients (n=127) received safe oral feeding recommendations via the screener (i.e. a screener outcome that is the same as or more conservative than ST's recommendation)
- ii. Of these, 43 patients (33%) received a more conservative recommendation than they needed.

Screener outcomes for all patients (n=132)



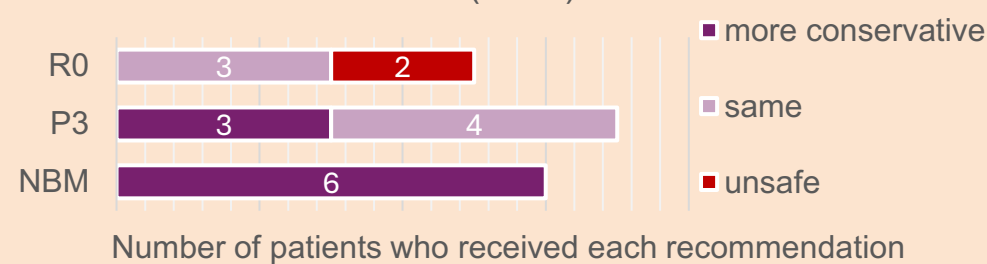
- iii. The sensitivity and specificity of SGH screener are comparable to other validated screeners — of these, the Toronto Bedside Swallowing Screening Test (TOR-BSST) and Gugging Swallow Screen (GUSS) have the best validity.

Screener	Sensitivity	Specificity
SGH	0.91	0.73
TOR-BSST ^b	0.96	0.63
GUSS ^b	0.97 (0.89-1.0)	0.67 (0.5-0.88)

iv. Pathway deviations

18 patients who had aspiration risk factors were administered the water swallow test on clinicians' orders instead of being kept NBM until ST assessment

Safety of screener results -- deviations only (n=18)



- 2 (11.1%) of these patients received regular diet and thin fluids after the water swallow test but were found to need modified diet/fluids after ST assessment
- R0 recommendation may be unsafe if patients deviate from the pathway
- However, standard care processes provide safeguards for patients who require further ST management during hospitalization i.e.:

- all patients with aspiration risk factors are referred to ST regardless of oral feeding recommendations; and
- nurses inform STs of patients who show aspiration signs or clinical deterioration even if they were originally on R0 and not referred to ST.

Conclusions and Further Plans

The SGH dysphagia screener performs as well as other widely used screeners in literature. It delivers value-based care by allowing stroke patients to start oral intake sooner, potentially reducing length of stay while minimizing risks of aspiration-related sequelae. Deviating from the pathway may lead to unsafe screener outcomes however this number is small and standard care processes are already in place to maximise oral intake safety. Further modification to the screener protocol for patients who deviate from pathway may mitigate risks. This might be done by limiting oral intake to only modified diet and fluids while awaiting ST assessment.