

5 Things I Want You to Know About Dysphagia

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5 things

- 1) Why we can't diagnose dysphagia at bedside.
- 2) You can't believe what you see: Silent Aspiration
- 3) No intervention is benign
 - The muddle of modification
- 4) You are more important than I am
 - Multidisciplinary management of pneumonia
- 5) Rehab works!!

1. What we cant see...

and neither can you

- + A very well done clinical swallowing assessment can give many hints as to what pathology may lurk within
- + At best, it allows for derivation of a clinical hypothesis, but we cannot identify pathophysiology from external, behavioural observation

Original Research

A Cost-Effectiveness Analysis of Screening Methods for Dysphagia After Stroke

Richard D. Wilson, MD, MS, Evan C. Howe, MD, PhD

Objective: To provide a cost-effectiveness analysis of dysphagia screening in the acute poststroke period with use of a videofluoroscopic swallowing study, a clinical bedside swallowing evaluation, or a combined approach.

Design: Decision-analysis model.

Methods: A decision-analysis model was used with information derived from multiple data sources, including meta-analyses and other relevant clinical studies. Univariate and probabilistic sensitivity analyses were performed.

Main Outcome Measures: The analysis assessed direct medical costs of pneumonia. Strategies were compared on the basis of an incremental cost-effectiveness analysis, with effectiveness measured in quality-adjusted life-years.

Results: The strategy of having each patient undergo a videofluoroscopic swallowing study for dysphagia was more effective and less costly than the strategies of clinical bedside swallowing evaluation alone or a combined approach. The model was most influenced by the reduction in the risk of pneumonia attributable to the treatment of mild/moderate and severe dysphagia, the effectiveness of treatment with clinical bedside swallowing evaluation, the baseline probability of pneumonia, and the cost of a videofluoroscopic swallowing study.

Conclusions: A videofluoroscopic swallowing study is cost-effective and often saves costs compared with a clinical bedside swallowing evaluation alone or a combined approach. Research aimed at improving the understanding of the effectiveness of treatment for dysphagia in the prevention of aspiration pneumonia and resulting mortality would improve the model.

PM R 2012;4:273-282

2. You can't believe what you see

- + The silent aspiration issue...why we care so much about this
 - + 50% of stroke patients are dysphagic
 - + 50% of dysphagic patients aspirate (25%)
 - + 50% of aspirators do so silently (12.5%)
 - + 70% of those with severe aspiration NOT detected at bedside (Splaingard, et al., 1988)

Absence of cough \neq
absence of aspiration



The consequences...

- + Can't identify patients at risk
- + Patients at risk have no mechanism to protect themselves

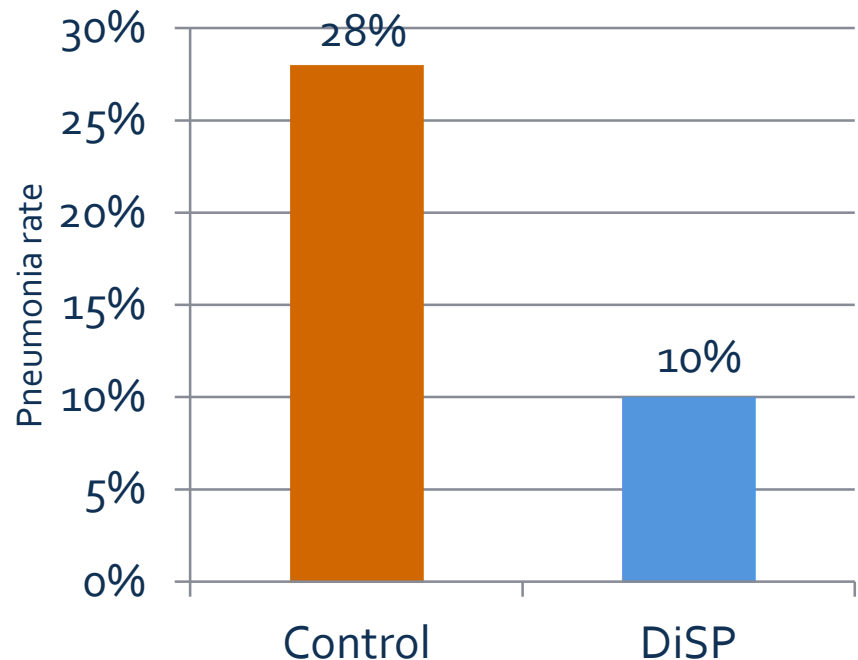
Cough reflex testing

+ Decrease in pneumonia rates after implementation of Dysphagia in Stroke Protocol from 28% to 10% in this DHB

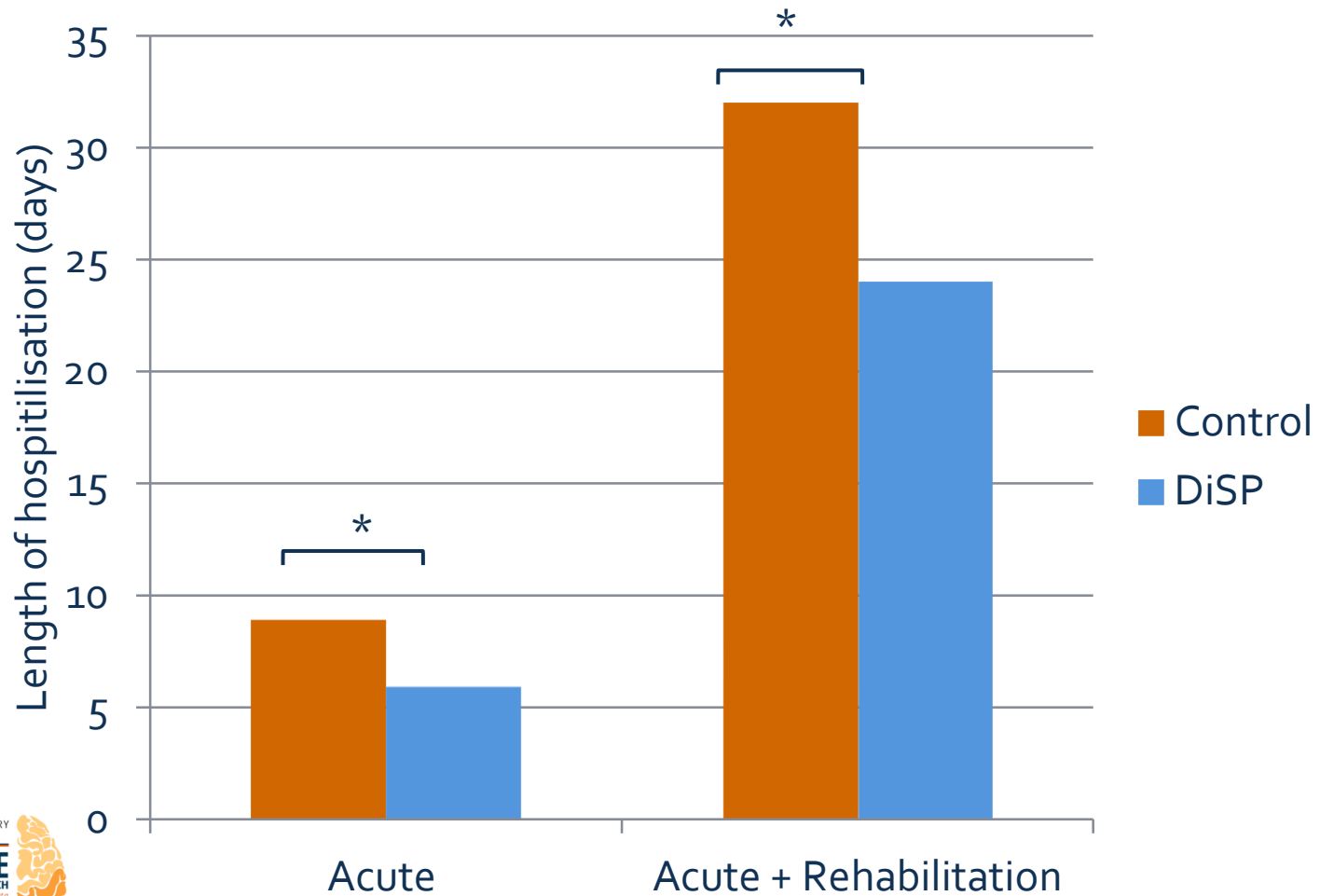
+ Huge cost savings to DHB

+ Stroke admission without pneumonia - \$12,000

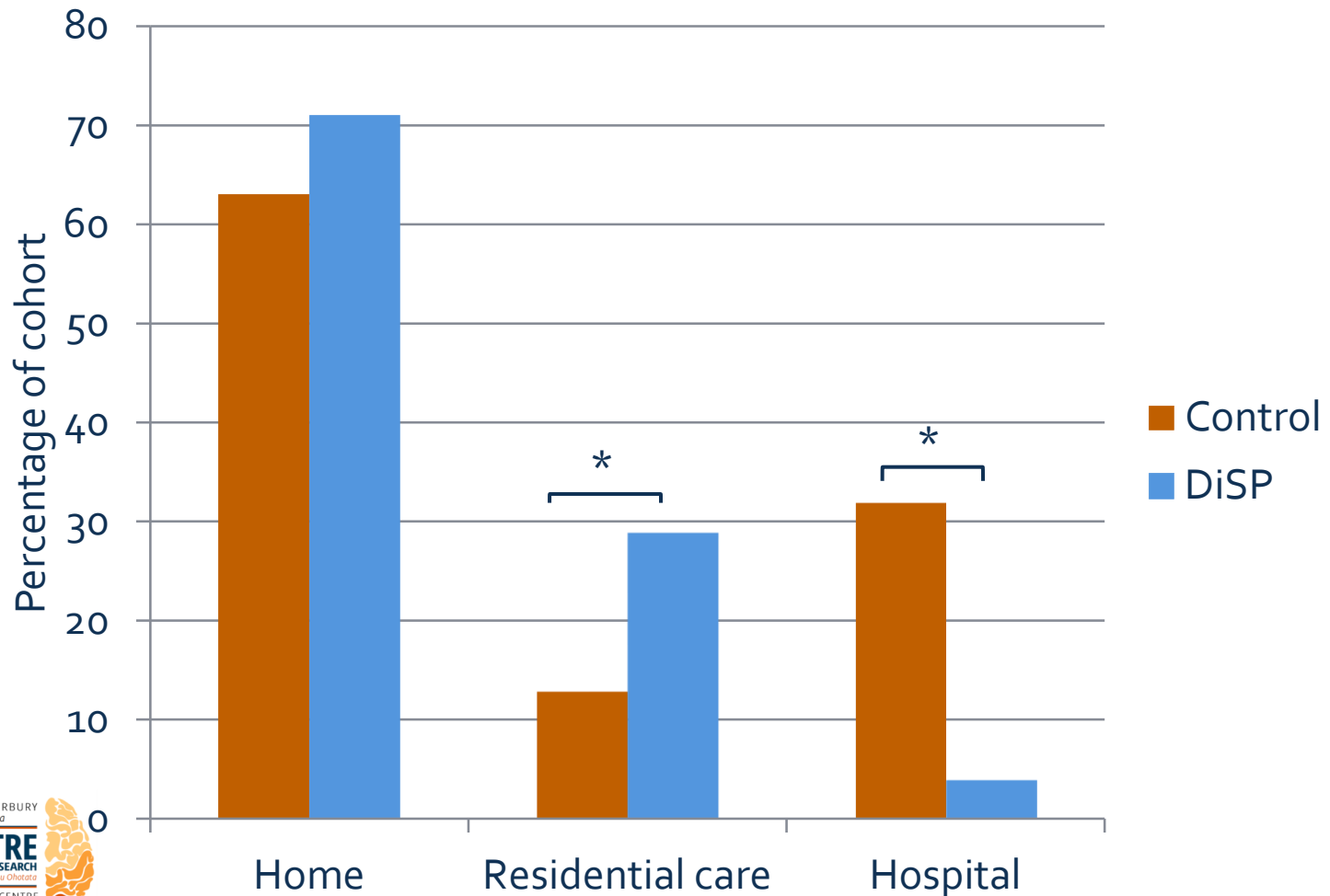
+ Stroke admission with pneumonia - \$ 23,000



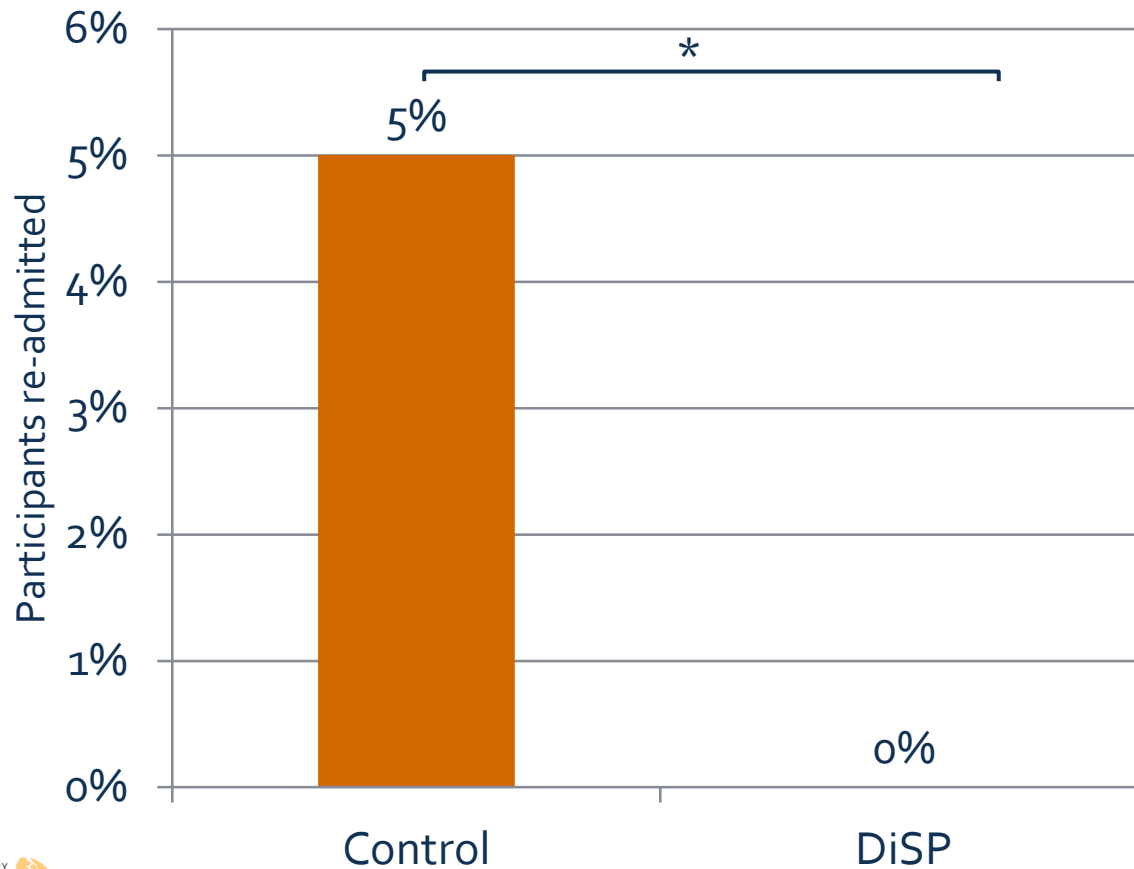
Median Length of Admission



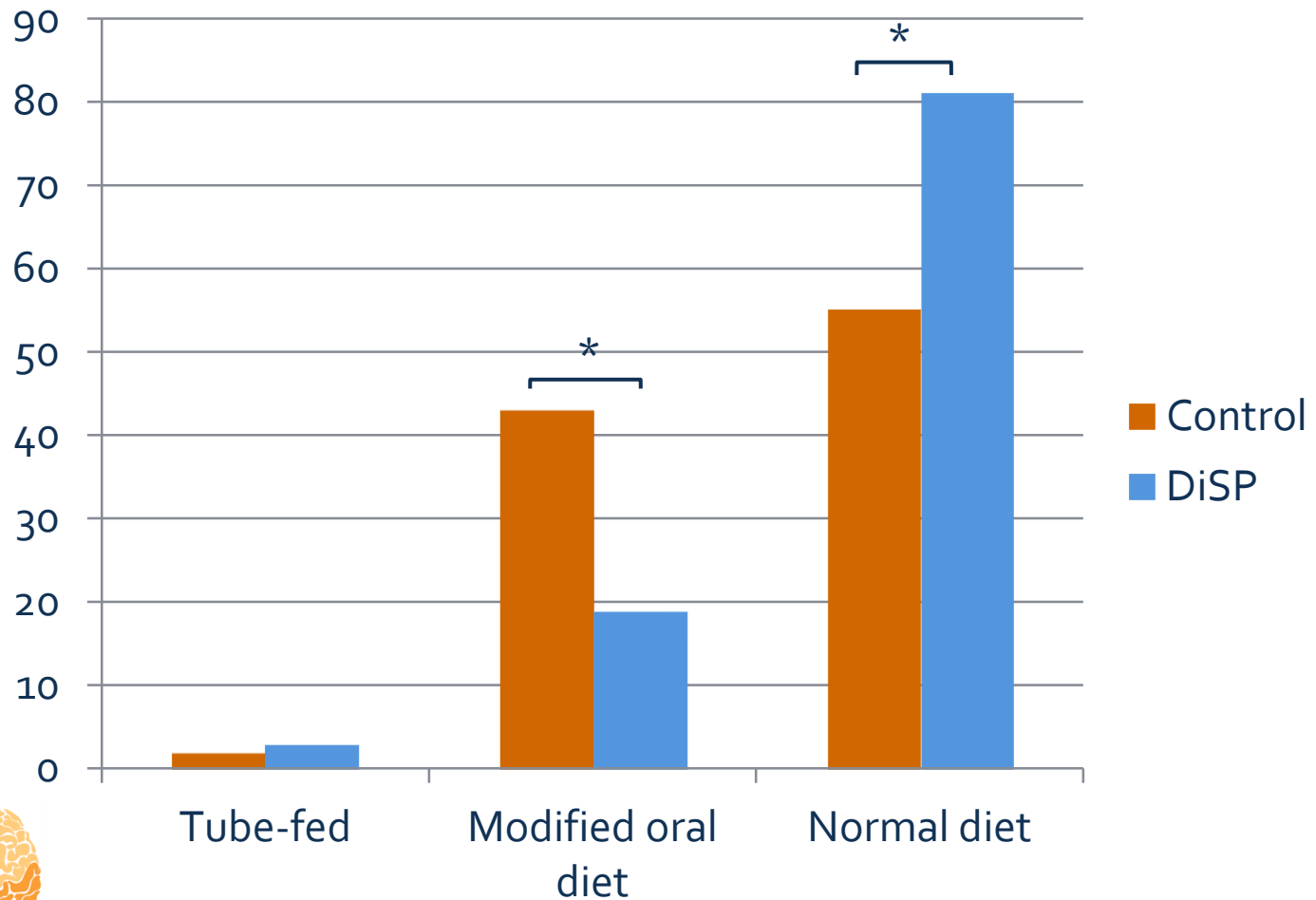
Post-stroke Status (3 months)



Hospital Re-admission with Pneumonia



Return to Oral Intake



3. No intervention is benign

- + Everything we do can have some implication...good or bad
 - + Chin tuck...great for some, very bad for others
 - + Non-oral...may be needed, but has adverse effects...cant expect a system to recover without sensory input

The muddle that is modification

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ORIGINAL ARTICLE

The Influence of Food Texture and Liquid Consistency Modification on Swallowing Physiology and Function: A Systematic Review

Catriona M. Steele · Woroud Abdulrahman Alsanei · Sona Ayanikalath · Carly E. A. Barbon · Jianshe Chen · Julie A. Y. Cichero · Kim Coutts · Roberto O. Dantas · Janice Duivestein · Lidia Giosa · Ben Hanson · Peter Lam · Caroline Lecko · Chelsea Leigh · Ahmed Nagy · Ashwini M. Namasivayam · Weslania V. Nascimento · Inge Odendaal · Christina H. Smith · Helen Wang

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European review: ESSD white paper

Dysphagia

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EDITORIAL

Effect of Bolus Viscosity on the Safety and Efficacy of Swallowing and the Kinematics of the Swallow Response in Patients with Oropharyngeal Dysphagia: White Paper by the European Society for Swallowing Disorders (ESSD)

Roger Newman^{1,5} · Natàlia Vilardell^{2,5} · Pere Clavé^{1,2,3,5} · Renée Speyer^{1,4,5}

Summary of findings

- + Increasing viscosity of oral intake may result in increased safety of swallowing arising from various conditions
 - + Note: not decreased pneumonia, just decreased aspiration
- + Increased viscosity results in increased oral and/or pharyngeal residue, thus counteracting any positive results from increased safety.

More ...

- + Argument that increased volume of intake may have detrimental effect on safety of swallowing
 - + Thick liquids -> drink less -> aspirate less
 - + Not fixing the problem...just avoiding it!

Does any of this translate to clinical outcomes?

- + Do thickened liquids have any bearing on patient outcomes?
 - + Does the benefit of thickener outweigh the risks
 - + Pharyngeal residual
 - + Decreased fluid ingestion?
 - + Type of thickener used?
 - + What is our benchmark outcome measure for an intervention?
 - + Does it influence development of aspiration pneumonia
 - + Does it facilitate recovery?

“THICK STICKS”

Is honey thick really still a liquid?

- + Logemann et al. (2008)
 - + Compared nectar thick, honey thick and thin with chin tuck in patients with PD and dementia and confirmed aspiration
 - + 500+ R.C.T.
 - + Honey thick was more effective than nectar thick or chin down in inhibiting aspiration
 - + BUT ½ of patients aspirated on all three techniques

“THICK STICKS”

- + Robbins et al. (2009) - extension of prior study
 - + 3-month incidence of pneumonia
 - + 9.8% thin liquids with chin down posture
 - + 11.6% thickened-liquid groups
 - + 8.4% in the nectar-thick liquid group
 - + 15% in the honey-thick liquid group
 - + 3-month morbidities: in those on thickened liquids of any type when compared to chin tuck:
 - + More dehydration (6% vs. 2%),
 - + More urinary tract infection (6% vs. 3%),

4. You are more important than I am

- + Most dysphagic stroke patients – up to 70% – will spontaneously recover if we can keep them safe and not interfere with recovery
- + How do we best keep them safe?

Langmore (1998)

- + 189 elderly subjects followed for a period of four years for verified outcome of aspiration pneumonia.
- + The best predictors for development of aspiration pneumonia in either short or long-term were
 - + dependence for feeding,
 - + dependence for oral care,
 - + number of decayed teeth,
 - + tube feeding,

Langmore (1998)

- + Interestingly, and despite general consensus among many clinicians, dysphagia was concluded to be an important risk for aspiration pneumonia, but generally not sufficient to cause pneumonia unless other risk factors are present as well.

Langmore (1998)

- + Proposed that three things were required for development of pneumonia
 1. Colonisation
 2. Aspiration
 3. Decreased host resistance

- + Determining who is at risk is a matter of evaluating these factors.

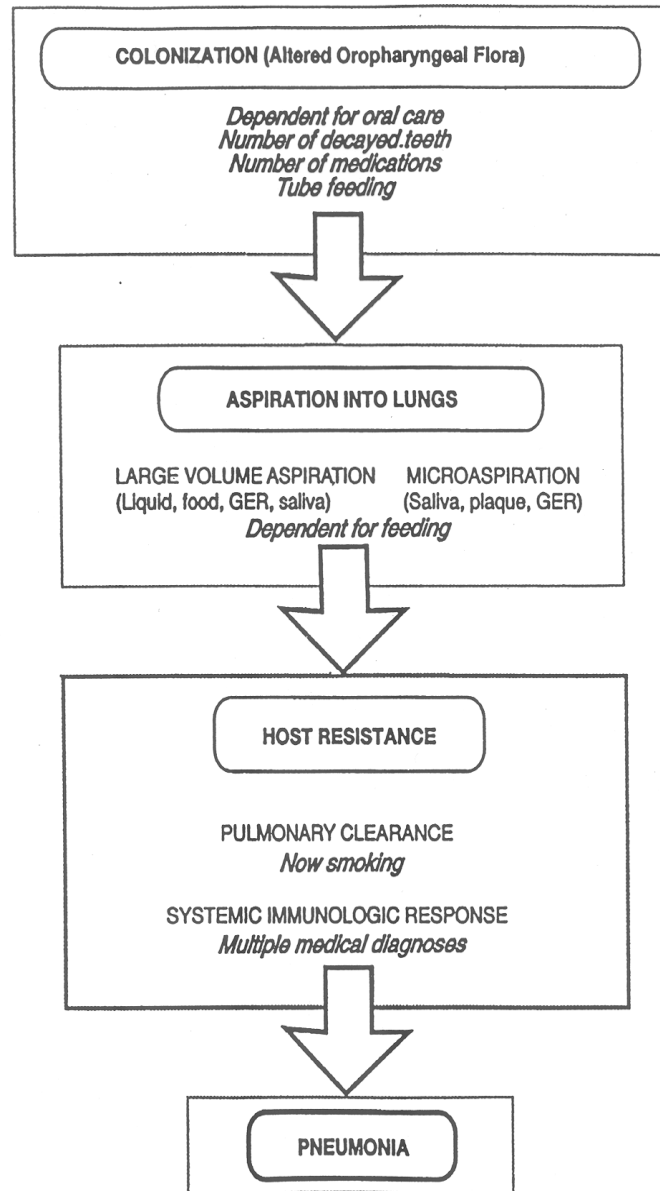


Fig. 1. Significant predictors of aspiration pneumonia (in bold italics) positioned in the model.

Rehab works

- + For those that don't spontaneously recover, rehab works!
- + But specificity, intensity and frequency are critical variables in recovery
 - + You can't fix high blood pressure with an antibiotic
 - + You can't cure an infection with one antibiotic tablet a week

Rose Centre Vision

- + To develop new standards of 'best practice' for rehabilitation of stroke across all ages
- + To develop and provide clinical services for stroke patients that meet the patients' clinical needs, but importantly, allows those patients to contribute to research that will help others
- + To create bioengineering applications that facilitate recovery by allowing patients greater access to intervention techniques.

Questions?

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