

# End-of-Life Care for Nursing Home Residents with Advanced Dementia and Feeding Problems: A Cost-Consequence Analysis

Thomas V. Caprio MD<sup>1,3</sup>, Robert G. Holloway<sup>2</sup>, and Robert McCann<sup>3</sup>

University of Rochester School of Medicine and Dentistry, 1. Monroe Community Hospital, 2. Strong Memorial Hospital, and 3. Highland Hospital.

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## INTRODUCTION

Advanced dementia may involve eating problems, swallowing difficulties, or loss of interest in food. Families and nursing homes are often faced with a difficult decision-making process regarding medical care including administration of artificial nutrition/hydration and continued hospitalization for complicating illnesses. This project performs a comprehensive cost-consequence analysis of different treatment pathways for nursing home residents with advanced dementia and feeding problems.

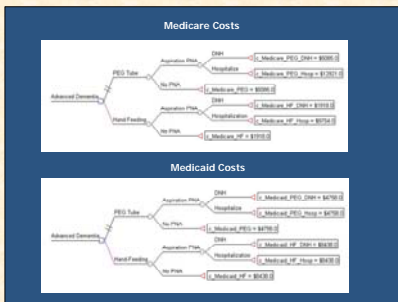
## METHODS

### Two-component model:

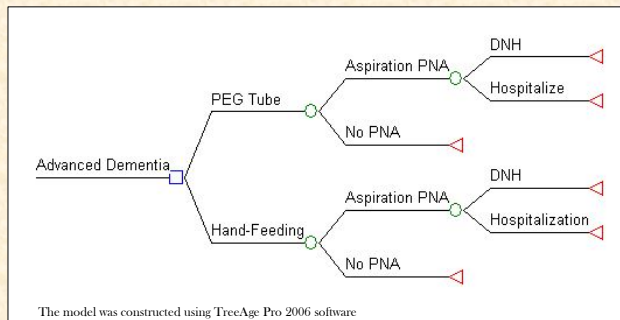
- Compare costs associated with percutaneous endoscopic gastrostomy (PEG) feeding tube placement verses hand-feeding by staff.
- Compare costs associated with management of a single episode of aspiration pneumonia in the nursing home verses acute hospitalization.
- Cost estimates from published peer-reviewed literature.
- Mortality and risk of aspiration pneumonia assumed to be uniform throughout the model.

### Costs used in Model Analysis

Description	Value	Low	High
Cost of hospitalization for pneumonia treatment	\$7,838	\$6,949	\$23,961
Medicaid costs in NH for hand-feeding	\$8,438		
Cost to Medicaid for PEG tube feeding	\$4,758		
Cost to Medicare for hand-feeding	\$1,918		
Cost to Medicare for hand-feeding if do not hospitalize	\$1,918		
Cost to Medicare for PEG tube placement and complications	\$5,085		
Costs to Nursing Home for hand-feeding	\$8,438		
Cost to Nursing Home for PEG residents	\$4,758		
Cost of Nursing Home Pneumonia treatment	\$500		
Cost of tube complications in first year	\$2,499	\$288	\$2,499
On time cost of PEG tube placement	\$2,200	\$1,086	\$2,200
Costs for tube replacements over first year	\$386		
Probability of Aspiration Pneumonia	0.18	0.03	0.66
Probability of Do Not Hospitalize for residents hand-feeding	0.03	0.014	0.838
Probability of Do Not Hospitalize for Residents Receiving PEG	0.014	0.014	0.838



### Cost Consequence Model for Nursing Home Residents with Advanced Dementia PEG - Percutaneous Endoscopic Gastrostomy Tube, PNA - Pneumonia, DNH - Do Not Hospitalize.



The model was constructed using TreeAge Pro 2006 software

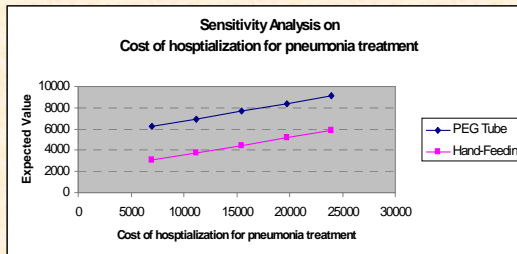
## RESULTS

Total incurred societal costs for tube feeding or hand feeding residents is approximately \$18,000 including treatment of a single episode of aspiration pneumonia in the hospital, and \$10,000 - \$11,000 for treatment in the nursing home. The costs vary from the perspectives of Medicare A & B payments to hospitals/physicians and Medicaid payments to nursing homes.

### Calculated Costs/Payments by source and total Societal Costs for PEG Tube and Hand-feeding nursing home residents who develop aspiration pneumonia. Abbreviations: PEG = Percutaneous Endoscopic Gastrostomy, DNH = Do Not Hospitalize

	All Medicare Costs		Nursing Home Costs and Medicaid Payments		Total (Society) Costs	
	Hospital	DNH	Hospital	DNH	Hospital	DNH
<b>PEG Tube</b>	\$12,921	\$5,085	\$4,758	\$5,258	\$17,679	\$10,343
<b>Hand Feeding</b>	\$9,754	\$1,918	\$8,438	\$8,938	\$18,192	\$10,856

### Sensitivity Analysis on Cost of hospitalization for pneumonia treatment



## CONCLUSIONS

This cost-consequence analysis shows how different treatment approaches can influence payments to various stakeholders in the management of advanced dementia in the nursing home. Further research is needed to determine if and how these incentives contribute to treatment decisions and if these are consistent with evidence-based standards and expressed preferences of patients and surrogate decision-makers.