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Omission of Dysphagia Therapies in Hospital Discharge Communications

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Abstract

Background—Despite the wide implementation of dysphagia therapies, it is unclear whether these therapies are successfully communicated beyond the inpatient setting.

Objective—To examine the rate of dysphagia recommendation omissions in hospital discharge summaries for high-risk sub-acute care (i.e., skilled nursing facility, rehabilitation, long-term care) populations.

Design—Retrospective cohort study

Subjects—All stroke and hip fracture patients billed for inpatient dysphagia evaluations by speech-language pathologists (SLPs) and discharged to sub-acute care in 2003-2005 from a single large academic medical center (N=187).

Measurements—Dysphagia recommendations from final SLP hospital notes and from hospital (physician) discharge summaries were abstracted, coded, and compared for each patient. Recommendation categories included: dietary (food and liquid), postural/compensatory techniques (e.g., chin-tuck), rehabilitation (e.g., exercise), meal pacing (e.g., small bites), medication delivery (e.g., crush pills), and provider/supervision (e.g., 1-to-1 assist).

Results—45% of discharge summaries omitted all SLP dysphagia recommendations. 47%(88/186) of patients with SLP dietary recommendations, 82%(93/114) with postural,

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100%(16/16) with rehabilitation, 90%(69/77) with meal pacing, 95%(21/22) with medication, and 79%(96/122) with provider/supervision recommendations had these recommendations completely omitted from their discharge summaries.

Conclusions—Discharge summaries omitted all categories of SLP recommendations at notably high rates. Improved post-hospital communication strategies are needed for discharges to sub-acute care.

Keywords

Care Management; Communication; Continuity of Care; Hospital Discharge

INTRODUCTION

Dysphagia is a serious yet common problem in older adults, especially for those in hospital settings and in sub-acute care facilities (i.e., skilled nursing, rehabilitation and long-term care facilities) [1-3]. Patients with stroke or hip fracture, the most common reasons for sub-acute care admission [4,5], are at especially high dysphagia risk. Forty to seventy percent of older adults with acute stroke experience dysphagia [6-9]. Moreover, hip fracture patients discharged to sub-acute care have high-rates of co-existing dementia [10-12], which places them at significantly increased dysphagia risk [13-16]. Dysphagia leads to a myriad of complications, including malnutrition, dehydration, and pneumonia, costing more than \$4.4 billion annually [17,18]. It is often diagnosed within the hospital setting by speech-language pathologists (SLP), who assess swallowing ability and make effective dietary, behavioral, and provider recommendations to decrease the risk of dysphagia-related complications [19-25]. However, hospital-based physicians and SLPs rarely accompany patients to the post-hospital care setting [26], and post-hospital communication of patient care plans is often problematic [26-30]. Poor discharge communication could lead to inappropriate post-hospital dysphagia care, with resultant aspiration pneumonia and need for costly rehospitalization.

The hospital discharge summary is the only document mandated by The Joint Commission to convey the patient's care plan to the post-hospital setting [31]. Although hospitals often utilize additional discharge paperwork, these other documents are institution-specific, not required, and not always present [27,32-35]. Direct verbal communication between care settings is rare [27]. Despite the critical communication role discharge summaries play, they are not standardized and often lack important components which experts recognize as crucial to ensuring patient safety [27,28,30,36]. It remains unknown how well discharge summaries communicate SLP dysphagia recommendations to post-hospital settings.

To enhance the design of transitional care programs which improve between-facility communication, we examined the rate of SLP dysphagia recommendation omissions in hospital discharge summaries for stroke and hip fracture patients transitioning from hospital to sub-acute care facilities.

METHODS

Study Sample

We identified all hospitalized patients 18 years and older with primary diagnoses of stroke or pelvis/hip/femur fracture who received a billed inpatient SLP dysphagia evaluation and who were discharged to sub-acute care facilities during 2003-2005 from a single large academic medical center. We established primary diagnoses using the International Classification of Diseases, 9th edition (ICD-9) diagnosis code in the first position on the

acute hospitalization discharge diagnosis list. ICD-9 codes of 431, 432, 434, and 436 were used to identify stroke [37-39]; and 805.6, 805.7, 806.6, 806.7, 808, and 820 were used to identify pelvis/hip/femur fracture (hereafter simply “hip fracture”) [40-42]. We identified discharges to sub-acute care facilities through the use of administrative data compiled on a mandatory basis for all study hospital patients by hospital case managers. Internal testing of these data by the study hospital noted greater than 95% reliability of this discharge field. We identified patients with billed inpatient SLP evaluations (either bedside or instrumental) by examining hospital billing records for Current Procedural Terminology (CPT) codes of 92610 (“evaluation of oral and pharyngeal swallowing function”), 92611 (“motion fluoroscopic evaluation of swallowing”), and 92612 (“flexible fiberoptic endoscopic evaluation of swallowing”) billed out of the study hospital’s swallowing service. The initial sample size was 218 prior to exclusions.

SLP hospital chart notes for each patient were located within the combination paper/electronic patient hospital chart for the eligible hospitalization. Discharge summaries for all eligible patients were obtained electronically from the study hospital. Patients were excluded if they did not have a discharge summary (N = 2), did not have dysphagia recommendations listed in their SLP hospital chart notes (N = 10), were discharged on hospice or comfort care (N = 1), or if it was clear from their discharge summary that they did not have a diagnosis of stroke or hip fracture (N = 12) or were not discharged to a sub-acute care facility (N = 6), for a final sample size of 187. No patient was included more than once in the sample. The Institutional Review Board (IRB) at the participating university approved this study with a waiver of consent.

Dysphagia Recommendation Categorization

We developed a coding scheme for all recommendations typically made by an SLP during the routine course of dysphagia evaluation and treatment. To accomplish this, we convened a consensus team of 2 SLPs, 2 physicians, and one medical student (the authors) to locate typical SLP recommendations via a review of the dysphagia literature [43-52] and to create a logical categorization of all recommendations found (N = 165). The team created seven major categories of dysphagia recommendations, including: 1) Dietary Recommendations and Restrictions, 2) Postural and Compensatory Techniques, 3) Rehabilitative Techniques, 4) Pacing, Sizing, and Procedural Techniques, 5) Medications – Pill Recommendations, 6) Care Provider and Communication Recommendations, and 7) Environment/Other (see Table 1). Large categories were divided into sub-categories. For each specific recommendation within each category/sub-category, we applied a distinct 4-digit numeric code that was utilized in the coding and analysis processes.

Abstraction and Coding Process

Final SLP Hospital Chart Note—Through a manual review of all documentation from each patient’s eligible hospitalization, the last SLP note containing recommendations prior to discharge (i.e., the “final SLP note”) was identified. Recommendations within this note were abstracted verbatim into electronic forms by a single medical abstractor (medical student) utilizing a standardized abstraction protocol and manual. (Prior to formal chart abstraction activities, this abstractor underwent a one-half day training on study protocol and abstraction approaches, including test-abstractions and parallel abstractions with immediate feed-back.) Each abstracted recommendation was then coded using the 4-digit codes developed above. To assess the reliability and validity of this process, an SLP who was originally involved in 5% of our sample’s care and who had performed and written the final SLP notes on these patients herself, performed retrospective re-abstractions of her dysphagia recommendations within all of her own final notes. She was blinded to the original abstraction results. These re-abstractions were coded and compared with the original

abstractions. A total of 66 SLP dysphagia recommendations were compared, with a total agreement of 99% between the two abstractors (Cohen's kappa = 0.9).

Hospital Discharge Summary—Two trained medical abstractors (one nurse practitioner and one physician), using standardized abstraction protocols, forms, and manuals, reviewed all sample discharge summaries for the presence or absence of dysphagia recommendations/orders. All dysphagia recommendations within discharge summaries were abstracted verbatim onto paper abstraction forms, entered into an electronic database, and manually coded. Ten percent of discharge summaries were re-abstracted with a 92% inter-abstractor agreement noted for the presence/absence of dysphagia recommendations (Cohen's kappa = 0.7). The discharge summary abstraction team was fully blinded to all contents of the SLP hospital chart notes.

Analysis

We calculated the prevalence of dysphagia recommendations within final SLP hospital chart notes and discharge summaries. Next, for each patient, we compared the coded dysphagia recommendations obtained from the patient's final SLP hospital chart note with those obtained from the patient's discharge summary. Discharge summary omissions of specific SLP dysphagia recommendations were noted for each patient. Omission frequencies were calculated for each dysphagia recommendation category and sub-category. Analyses were performed using SAS version 9.1 and STATA version 10.1 [53,54].

RESULTS

Patient and Discharge Summary Characteristics

Of the 187 eligible patients within this study, 159 (85%) had a primary diagnosis of stroke while 28 (15%) had a primary diagnosis of hip fracture. Discharge summaries averaged 3.6 pages (range 2-9) and originated from a variety of hospital services including neurosurgery, neurology, orthopedic surgery, and general internal medicine. Nearly all of the discharge summaries were dictated by a physician resident (e.g., medical resident, surgical resident, neurology resident, etc.), although 96% were ultimately reviewed, edited, and signed by the attending physician.

Prevalence of Dysphagia Recommendations

Final SLP hospital chart notes contained an average of 5.6 recommendations per note (range 1-15), while patient discharge summaries contained an average of 1.4 recommendations per discharge summary (range 0-9). Both SLP notes and discharge summaries included 'dietary recommendations and restrictions' the most often, with 99% of final SLP notes and 52% of discharge summaries including at least one recommendation within this category (see Figure 1). 'Care provider and communication recommendations' were the next most often included, with 65% of SLP notes and 18% of discharge summaries including at least one recommendation within this category. 'Postural and compensatory techniques' were the third most often included in both note types, followed by the categories of 'pacing, sizing, and procedural techniques,' 'medications – pill recommendations,' 'rehabilitative techniques,' and 'environment.' Prevalence of the most common specific recommendations within each category is demonstrated in Appendix Table 1. Overall, dysphagia recommendations were less often included within discharge summaries than within SLP notes, regardless of the category.

Omission of Dysphagia Recommendations within Discharge Summaries

Table 2 demonstrates the frequencies at which patient discharge summaries omitted specific SLP dysphagia recommendations. Overall, 45% of patient discharge summaries omitted all of the dysphagia recommendations made within the final SLP hospital note, while 42% of discharge summaries omitted at least one (but not all) of the SLP recommendations (i.e., omitted some recommendations). Thirteen percent of patient discharge summaries included all of the SLP recommendations made (i.e., omitted no recommendations).

Forty-seven percent of patients with dietary recommendations and restrictions made by their SLP had these recommendations completely omitted from their discharge summary (Table 2). This category had the lowest omission rate of all categories studied. In this category, SLP tube feeding recommendations were the least commonly omitted. All other types of SLP dietary recommendations were omitted at rates of 54% or greater. Recommendations for diets other than 'general' accounted for approximately 60% of all omissions within the food recommendation category, while recommendations for liquid consistencies other than 'thin' accounted for approximately 22% of all omissions within the liquid recommendation category (see Appendix Table 1).

Seventy-nine to one hundred percent of patients with non-dietary SLP recommendations had these other recommendations fully omitted from their discharge summaries (Table 2). The most numerous specific omissions in these non-dietary categories included recommendations for elevating the head of the patient's bed during or after meals, one-to-one supervision or feeding assistance during meals, eating slowly or with only small bites, performing a chin-tuck during swallowing, crushing tablet medications, specific rehabilitative tongue/mouth exercises, and instructions for following up with the SLP for further evaluation (see Appendix Table 1).

Rarely, discharge summaries included specific dysphagia recommendations not made within the SLP hospital chart note (see Appendix Table 1). The most common of these recommendations were instructions for pureed or mechanical soft diets (20 discharge summaries) and for one-to-one feeding assistance (7 discharge summaries).

DISCUSSION

In this study, inpatient SLP dysphagia therapy recommendations were frequently omitted from the discharge summaries of sub-acute care patients at high risk for aspiration pneumonia. Non-dietary recommendations were omitted at the highest rates, in some categories nearing 80-100%, while dietary recommendations were omitted in nearly half of all patients. To our knowledge, this is the first study to examine and report on deficiencies in dysphagia therapy communication at the time of hospital discharge.

The frequent omission of dysphagia recommendations in hospital discharge summaries may be attributable to a number of dictating provider (i.e., physician) and system factors. Despite the demonstrated effectiveness of dysphagia therapies in preventing aspiration and subsequent pneumonias [19,20,23-25], physicians may undervalue the importance of these therapies, preferentially focusing on physician-prescribed therapies (i.e., medications) for transmission within the discharge summary plan. The communication of dysphagia therapies may also be perceived by the dictating physician as a "nursing role;" one which will be dealt with during the nursing hand-off (i.e., the telephone communication which typically occurs between the discharging hospital nurse and the receiving sub-acute care nurse at the time of the patient's discharge from the hospital). However, nursing hand-offs do not result in written documentation as universally present or as widely disseminated as the discharge summary [27]. Additionally, system factors, including poor in-hospital communication

[55-57], high work-loads [58,59], and cumbersome discharge summary and medical record systems [60-63], likely contribute to dysphagia omissions.

This is not the first study to demonstrate omission of critical patient care plan components in hospital discharge summaries. Studies of discharge summaries in Britain and Canada have demonstrated frequent omissions of important details [27,35,36,64-67]. A systematic review by Kripalani et al. noted that discharge summaries frequently omit diagnostic test results, treatment courses, discharge medications, pending test results, and follow-up plans [27]. However, there is a notable lack of attention to treatment plan components made by allied health providers in these studies, including dysphagia treatment recommendations made by hospital-based SLPs. As hospitalized older adults increasingly rely on multi-disciplinary care teams and as research continues to highlight the critical impact transitional care quality has on patient safety in the early post-discharge period [68-71], it becomes clear that a shift in the physician-centered approach to discharge summary documentation may be needed.

Although patient outcomes were not studied within this particular analysis, the potential impact that dysphagia omissions may have on patient health is concerning. The evidence-based dysphagia therapy recommendations made by inpatient speech-language pathologists have been shown to decrease adverse patient events [19,20,23-25]. However, if these therapies are not communicated to or continued within the post-hospital care setting, any benefits they may have conveyed could be lost. As such, omission of food and body positioning recommendations within discharge summaries may lead to inappropriate or unsafe patient care, thus increasing the risk of aspiration and subsequent pneumonia within the sub-acute care facility. This is an important linkage because accreditation and quality agencies rarely focus on the specific content of discharge summaries, concentrating instead upon the mere presence or absence of the signed document [31]. Future studies which strengthen the connection between the quality of dysphagia therapy communication at the time of hospital discharge and dysphagia-specific patient outcomes are needed.

This study has some limitations which should be considered. The retrospective nature of this analysis makes it impossible for us to determine if some dysphagia therapies recommended by SLPs were purposefully omitted from discharge summaries by physicians who felt these recommendations were not appropriate for the patient at the time of hospital discharge. However, the remarkably high omission rate of dysphagia recommendations within discharge summaries and the high incidence of long-term dysphagia in sub-acute care populations [1,13-15] make it unlikely that purposeful omissions explain the bulk of these findings. Secondly, this study was conducted in a single, large academic medical center in which most discharge summaries are authored by physician residents and in which most stroke patients are cared for within a dedicated stroke unit. This may limit the generalizability of our findings, especially considering that academic discharge summaries may differ from those created in community hospital settings and stroke units tend to focus strongly on dysphagia identification and treatment [72]. It is possible that hospital settings without these traits may have even lower rates of dysphagia therapy communication within discharge summaries.

In conclusion, discharge summaries within this study frequently omitted critical dysphagia therapy recommendations made by hospital-based SLPs even in populations at very high risk for aspiration. Future studies should focus both on improving the discharge communication of dysphagia therapy information and on the impact this improved discharge communication has on patient outcomes, especially in vulnerable sub-acute care populations who rely strongly upon the systems that surround them.

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Appendix

Appendix Table 1

Inclusion Rates of Specific Dysphagia Recommendations (Recs) Made by Speech-Language Pathologists (SLP) for Stroke and Hip Fracture Patients Discharged to Sub-Acute Care Facilities^{a, b} (N=187)

Specific Dysphagia Recommendations Made by SLPs	Prevalence of Recs in Final SLP Hospital Chart Note (Total N=187) % (n)	Discharge Summary			
		Prevalence of Recs in Discharge Summary (Total N=187) % (n)	Number of SLP Recs Accurately Included in Discharge Summary (n)	Number of Recs Included in Discharge Summary NOT Originating From SLP Note (n)	
<i>Food recommendations</i>					
General/normal/regular diet	31% (58)	8% (15)	12	3	
Mechanical soft diet/chopped/diced	34% (63)	19% (36)	26	10	
Mechanical soft dysphagia diet	11% (21)	3% (5)	3	2	
Ground/crushed/minced food	0% (0)	0% (0)	0	0	
Pureed diet/semisolid diet	17% (32)	15% (28)	18	10	
Moist food products/add gravy, sauces, condiments	1% (1)	0% (0)	0	0	
Allow special/specific food that patient enjoys	1% (2)	0% (0)	0	0	
<i>Food restrictions</i>					
No foods with mixed consistencies (i.e., fruit cocktail, etc.)	1% (1)	0% (0)	0	0	
Food restriction NOS	1% (1)	0% (0)	0	0	
<i>Foods and liquids that stimulate sensation</i>					
Foods with intense flavor	1% (2)	1% (1)	1	0	
Favorite foods	1% (2)	1% (1)	0	1	
Favor hot or cold foods/no room-temperature foods	2% (3)	1% (2)	2	0	
Nectar-thick liquids	24% (44)	11% (21)	20	1	

Specific Dysphagia Recommendations Made by SLPs	Prevalence of Recs in Final SLP Hospital Chart Note (Total N=187) % (n)	Discharge Summary		
		Prevalence of Recs in Discharge Summary (Total N=187) % (n)	Number of SLP Recs Accurately Included in Discharge Summary (n)	Number of Recs Included in Discharge Summary NOT Originating From SLP Note (n)
Honey-thick liquids	3% (6)	4% (7)	6	1
Pudding-thick liquids	0% (0)	1% (1)	0	1
No liquids	2% (4)	1% (1)	0	1
Liquids by spoon only	2% (3)	0% (0)	0	0
Liquids by cup only	1% (1)	0% (0)	0	0
Liquids by straw only	1% (1)	0% (0)	0	0
No liquids by cup	1% (1)	0% (0)	0	0
Dietary supplements	5% (9)	0% (0)	0	0
Alternative means of nutrition	4% (7)	0% (0)	0	0
Feeding for oral gratification	1% (1)	0% (0)	0	0
<i>Tube feeding</i>				
Nasogastric tube	3% (5)	1% (2)	2	0
Gastrostomy tube	6% (11)	5% (10)	6	4
90-degree angle/upright posture during consumption	45% (85)	8% (15)	11	4
90-degree angle/upright posture after consumption	9% (17)	4% (7)	2	5
<i>Head adjustments</i>				
Chin tuck	18% (33)	5% (9)	8	1
Rotate head to left/right while eating	6% (11)	1% (2)	2	0
Present bolus to left/right side of mouth	5% (10)	0% (0)	0	0
Lingual or finger sweep on left/right side of mouth	2% (4)	0% (0)	0	0
Effortful swallow during meals	3% (6)	0% (0)	0	0
Multiple swallows per bite	12% (23)	1% (2)	2	0
Try to improve timing of swallow	2% (3)	0% (0)	0	0
Tongue protrusion exercises	3% (5)	0% (0)	0	0
Tongue lateralization exercises	2% (3)	0% (0)	0	0
Tongue hold and swallow exercises	1% (1)	0% (0)	0	0
NOS tongue exercise	2% (3)	0% (0)	0	0
Lip protrusion/retraction exercise	2% (4)	0% (0)	0	0
Laryngeal elevation/falsetto techniques	2% (3)	0% (0)	0	0
Vocal fold adduction exercises	1% (1)	0% (0)	0	0
Speech/talking exercises	1% (2)	0% (0)	0	0
Effortful swallow exercise	2% (4)	0% (0)	0	0
Yawning exercises	1% (1)	0% (0)	0	0
<i>Procedural and sizing recommendations</i>				

Specific Dysphagia Recommendations Made by SLPs	Prevalence of Recs in Final SLP Hospital Chart Note (Total N=187) % (n)	Discharge Summary		
		Prevalence of Recs in Discharge Summary (Total N=187) % (n)	Number of SLP Recs Accurately Included in Discharge Summary (n)	Number of Recs Included in Discharge Summary NOT Originating From SLP Note (n)
Alternate solids and liquids	8% (15)	1% (2)	2	0
Half-teaspoon/teaspoon bolus size	7% (14)	1% (1)	0	1
Small bites/sips	25% (47)	3% (5)	2	3
Eat slowly	19% (36)	2% (3)	2	1
<i>Medications - Pill recommendations</i>				
Crush/split/grind/chop pills	11% (21)	2% (3)	1	2
Take pill with puree (i.e., applesauce)	5% (10)	1% (2)	1	1
<i>Supervision, monitoring and assistance</i>				
One to one supervision	11% (20)	3% (5)	2	3
Periodic supervision	1% (2)	0% (0)	0	0
NOS supervision	6% (11)	2% (3)	1	2
One to one feeding assistance	10% (18)	5% (10)	3	7
NOS feeding assistance	11% (21)	1% (2)	2	0
Monitor for signs/symptoms of aspiration	13% (24)	3% (5)	1	4
Monitor for oral pocketing on left/right side	5% (9)	1% (2)	0	2
Monitoring NOS	9% (16)	1% (2)	0	2
Swallowing only to be performed in presence of an SLP/MD	3% (5)	1% (1)	1	0
Advance diet as tolerated	6% (11)	2% (4)	0	4
Discontinue feedings at a future date	4% (8)	0% (0)	0	0
Oral care	1% (2)	0% (0)	0	0
Food on left/right side of tray	2% (4)	0% (0)	0	0
Encourage independence with eating	2% (3)	0% (0)	0	0
Follow-up evaluation by SLP needed	13% (24)	1% (2)	0	2
Follow-up evaluation by a non-SLP needed	4% (8)	1% (1)	0	1

^a SLP = Speech-Language Pathologist; Recs = Recommendations; NOS = Not otherwise specified

^b Recommendations that were not included in any SLP hospital chart notes or discharge summaries are omitted

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Figure 1.

Prevalence of dysphagia recommendations, by category, within final Speech-Language Pathologist (SLP) hospital chart notes and within discharge summaries for stroke and hip fracture patients discharged to sub-acute care facilities (N=187)

□ = SLP Note

■ = Discharge Summary

Table 1
**Categorizations/Sub-Categorizations of Common Recommendations Made by Speech-
 Language Pathologists (SLP) During Inpatient Dysphagia Evaluations^{a, b}**

Dietary recommendations and restrictions

Food recommendations

General/normal/regular diet
 Mechanical soft diet/chopped/diced
 Mechanical soft dysphagia diet
 Ground/crushed/minced food
 Pureed diet/semisolid diet
 Moist food products/add gravy, sauces, condiments
 Allow special/specific food that patient enjoys
 NOS “dietary food recommendation”

Food restrictions

No dry/tough/hard foods (e.g., nuts, granola, dry meats, etc.)
 No foods that crumble (e.g., rice, cake, etc.)
 No foods with mixed consistencies (e.g., fruit cocktail, etc.)
 No sticky foods (e.g., peanut butter, taffy, etc.)
 No starches or “starchy” foods
 NOS food restriction

Foods and liquids that stimulate sensation

Foods with intense flavor
 Favor tasty/appealing foods/favor patient’s favorite foods
 Favor hot or cold foods/no room-temperature foods
 NOS recommendation to consume foods that stimulate senses

Liquid recommendations

Thin liquids/general liquids
 Nectar-thick liquids
 Honey-thick liquids
 Pudding-thick liquids
 Thick or thickened liquids
 Clear liquids diet
 Water-only diet
 Favor carbonated beverages, soda, pop, soft drinks
 NOS recommendation for consumption of liquids or hydration

Liquid restrictions

No thin liquids
 No liquids
 Liquids by spoon only
 Liquids with cup only; do not use straws
 Use straw while drinking
 Do not use cup while drinking

No carbonated beverages, soda, pop, soft drinks
 NOS liquid restriction or drinking tool recommendation

Nutritional advice

Calorie counts
 Diet supplements
 Temporary alternative means of nutrition
 Long-term alternative means of nutrition
 [Unspecified duration] alternative means of nutrition
 Oral feeding with tube supplement
 Tube feeding with oral supplement
 NOS nutritional recommendation

Tube feeding

Dobhoff/nasogastric (NG) tube
 Gastrostomy tube
 J-tube
 TNA/TPN
 Discontinue (d/c) or hold tube feeding (TF)
 NOS tube feeding recommendation

No intake by mouth (NPO)

No food/liquid by mouth (NPO), or discontinue meals/food intake (PO)

Postural and compensatory techniques

Body positioning

90-degree angle/upright posture during consumption
 90-degree angle/upright posture after consumption
 Lean to left while eating
 Lean to right while eating
 Lie on left side while eating
 Lie on right side while eating
 Lie on [unspecified] side while eating
 Lean [to unspecified] side while eating
 NOS body-positioning recommendation for during or after consumption

Head adjustments

Chin tuck
 Rotate/turn head to left while eating
 Rotate/turn head to right while eating
 Rotate/turn head [to unspecified side] while eating
 Tilt head to left while eating
 Tilt head to right while eating
 Tilt head [to unspecified side] while eating
 Jaw thrust/extension while eating
 NOS head adjustment recommendation

Oral-pharyngeal strategies

Place food on back of tongue

Place food at most sensitive part of mouth
 Apply pressure or sensory stimulation before presenting foods
 Present boluses to left side of mouth
 Present boluses to right side of mouth
 Present boluses to [unspecified] side of mouth
 Lingual or finger sweep on left side
 Lingual or finger sweep on right side
 Lingual or finger sweep [on unspecified side]
 Effortful swallow (during eating)
 Press on cheek with hand to close off left side of mouth
 Press on cheek with hand to close off right side of mouth
 Press [unspecified] cheek with hand to close [unspecified] side of mouth
 Airway protection techniques (e.g., throat-clear)
 Multiple swallows per bite (e.g., double swallow)
 Focus on and/or try to improve timing of swallow
 NOS recommendation to perform compensatory maneuver/technique

Rehabilitative techniques

Practice movements related to eating/bolus manipulation
 Base of tongue exercises
 Tongue/lingual protrusion or tongue/lingual resistance exercises
 Tongue lateralization exercises
 Tongue hold and swallow
 NOS tongue/lingual exercise recommendation (include improving ROM)
 Lip protrusion and/or lip retraction exercises
 Laryngeal elevation/falsetto techniques
 Vocal fold adduction exercises
 Speech, talking, or voice exercises
 Effortful swallowing performed as therapy exercise (not while eating)
 Yawning exercises
 Gargling with saliva or water
 Shaker exercise
 NOS recommendation to strengthen range of motion (ROM)
 NOS instruction to perform rehabilitation exercise
 External electronic stimulation therapy

Pacing, sizing, and procedural techniques

Procedural and sizing recommendations

Alternate solids and liquids
 One course of food at a time
 One bite at a time
 1/2 tsp. bolus size
 1 tsp. bolus size
 Small/controlled bites
 Small or single sips of liquid; no gulps of liquid

Eat/drink slowly, decreased rate of feeding

Avoid small food particles

Finger foods

NOS procedural or sizing recommendation

Meal scheduling

Eat frequent meals with small portion size, favor snacks/small meals

Maintain regular/routine eating schedule

Eat at peak of med cycle

Use necessary aids (e.g., dentures) at all times while eating

Eat only when wide awake/alert and oriented

Eat only when physically ready for swallowing/eating

NOS recommendation for when to consume meals

Medications - pill recommendations

Crush/split/grind/chop pills

Take pill with puree (e.g., applesauce)

NOS instruction to take pill with food

Place pill on back of tongue

One pill at a time

Take pill with fluid (e.g., with water)

Liquefy pills

Favor pills instead of liquid medications, or avoid liquid meds

Favor liquid medications instead of pills, or avoid pills

NOS recommendation for consuming pills

Care provider and communication recommendations

Supervision, monitoring, and assistance

One to one supervision during meals

Maintain intermittent or periodic supervision

Supervision during feeding

One to one feeding assistance

Assist with feeding, food selection, meal setup, or therapy

Monitor for signs of aspiration (e.g., cough, wet voice, etc.)

Monitor for oral residual or pocketing on left side

Monitor for oral residual or pocketing on right side

cavity] Monitor for oral residual or pocketing [in unspecified area of oral

Monitor patient for difficulties, monitor patient status

clinician Swallowing and/or exercises performed in presence of SLP, MD,

NOS recommendation to ensure safety of patient while eating

Other provider recommendations

Cue/remind/reinforce swallowing/feeding techniques

diet Recommendation giving care provider permission to evaluate patient's

Discontinue (d/c) or stop tube feedings (TFs) at a future date

Use simple/concise directions to increase comprehension
 Oral care before/during/after meals
 Food on left side of plate/tray
 Food on right side of plate/tray
 Food on [unspecified] side of plate/tray
 NOS tray-setup recommendation
 Follow recommendations posted on patient's bed, door, or wall
 Patient to work on achieving independence
 Work with patient on "compliance" or "adherence" to recommendation
 NOS care provider recommendation

Future services with health experts

Reconsult, re-refer, readmit with any concerns, difficulties, or as needed
 Follow-up evaluation by SLP
 Future evaluation by health expert
 [Unspecified type of] referral requested [by unspecified specialist]
 NOS care provider communication instruction

Environment/other

Limit or avoid distractions during meals
 Ensure ideal external environment
 NOS recommendation to ensure optimal environmental conditions

^a Bold text indicates category; italic text indicates sub-category; normal text indicates specific recommendation

^b SLP = Speech-language pathologist, NOS = not otherwise specified

Table 2
Discharge Summary Omissions of Dysphagia Recommendations Made by Speech-Language Pathologists (SLP) for Stroke and Hip Fracture Patients Discharged to Sub-Acute Care Facilities^a (N=187)

	SLP Recommendations in Patient Discharge Summary				
	All Omitted	Some Omitted	None Omitted (All Included/Complete)	%	(n/N)
SLP dysphagia recommendation categories within the final SLP hospital chart note (N = number of patients for whom SLP made recommendation)	%	(n/N)	%	(n/N)	%
Overall (all categories combined) (N=187)	45%	(84/187)	42%	(78/187)	13%
<i>Dietary (food and liquid) recommendations and restrictions (N=186)</i>	47%	(88/186)	18%	(34/186)	34%
Food recommendations (N=173)	54%	(93/173)	14%	(24/173)	32%
Food restrictions (N=2)	100%	(2/2)	0%	(0/2)	0%
Foods and liquids that stimulate sensation (N=5)	60%	(3/5)	20%	(1/5)	20%
Liquid recommendations (N=158)	65%	(102/158)	6%	(9/158)	30%
Liquid restrictions and tools for drinking (N=10)	100%	(10/10)	0%	(0/10)	0%
Nutritional advice (N=22)	100%	(22/22)	0%	(0/22)	0%
Tube feeding (N=19)	42%	(8/19)	16%	(3/19)	42%
Nothing by mouth (NPO) (N=13)	100%	(13/13)	0%	(0/13)	0%
<i>Postural and compensatory techniques (N=114)</i>	82%	(93/114)	3%	(3/114)	16%
Body positioning (N=86)	87%	(75/86)	1%	(1/86)	12%
Head adjustments (N=38)	76%	(29/38)	3%	(1/38)	21%
Oral-pharyngeal strategies (N=37)	95%	(35/37)	3%	(1/37)	3%
Procedural and sizing recommendations (N=75)	89%	(67/75)	5%	(4/75)	5%
Meal scheduling (N=6)	100%	(6/6)	0%	(0/6)	0%
<i>Medications - pill recommendations (N=22)</i>	95%	(21/22)	5%	(1/22)	0%
<i>Care provider and communication recommendations (N=122)</i>	79%	(96/122)	13%	(16/122)	8%
Supervision, monitoring and assistance (N=86)	78%	(67/86)	16%	(14/86)	6%
Other provider recommendations (N=47)	98%	(46/47)	2%	(1/47)	0%
Future services with health experts (N=49)	98%	(48/49)	2%	(1/49)	0%
<i>Environment/other (N=3)</i>	100%	(3/3)	0%	(0/3)	0%

^a SLP = Speech-Language Pathologist