

DMS NEWS AND REVIEWS

A DYSPHAGIA MANAGEMENT SYSTEMS PUBLICATION

Winter 2016

► IN THE NEWS

"CMS Readmissions Reduction Program"

https://www.cms.gov/medicare/medicare-fee-for-service-payment/acuteinpatientpps/ readmissions-reduction-program.html

In the FY 2012 IPPS final rule, CMS finalized the following policies with regard to the readmission measures under the **Hospital Readmissions Reduction Program:**

- (1) Defined readmission as an admission to a subsection (d) hospital within 30 days of a discharge from the same or another subsection (d) hospital
- (2) Adopted readmission measures for the applicable conditions of acute myocardial infarction (AMI), heart failure (HF), and pneumonia (PN)
- (3) Established a methodology to calculate the excess readmission ratio for each applicable condition, which is used, in part, to calculate the readmission payment adjustment. A hospital's excess readmission ratio is a measure of a hospital's readmission performance compared to the national average for the hospital's set of patients with that applicable condition.
- (4) Established a policy of using the risk adjustment methodology endorsed by the National Quality Forum (NQF) for the readmissions measures to calculate the excess readmission ratios, which includes adjustment for factors that are clinically relevant including certain patient demographic characteristics, co-morbidities, and patient frailty.
- (5) Established an applicable period of three years of discharge data and the use of a minimum of 25 cases to calculate a hospital's excess readmission ratio for each applicable condition.

COPD patients have a 30 day repeat hospitalization of 22.6% with 2/3 of those cases identified as being preventable (Martinez et al., 2013)

ON PAGE 3:

Dr Jeanna Winchester, PhD provides a literature review focusing on a specific type of **Respiratory Dysphagia caused by COPD**.

DID YOU KNOW?

CMS finalized the expansion of the applicable re-hospitalization focus conditions beginning with the FY 2015 program to include:

- 1) Patients that are admitted for an acute exacerbation of **chronic obstructive pulmonary disease (COPD).**
- 2) Patients admitted for elective total hip arthroplasty (THA) and total knee arthroplasty (TKA).

In the FY 2016 IPPS final rule, CMS finalized an update to the pneumonia readmission measure by expanding the measure cohort to include additional pneumonia diagnoses:

- 1) Patients with aspiration pneumonia
- 2) Sepsis patients coded with pneumonia present on admission (but not including severe sepsis).





DYSPHAGIA MANAGEMENT IS A GOOD CMS RE-HOSPITALIZATION REDUCTION DECISION:

- **Dysphagia often contributes to 4 of top 5 reasons** for re-hospitalization; CHF, respiratory infection, UTI and electrolyte imbalance (Coleman 2004).
- Diagnoses that contribute to increased cost of care and readmission penalties; COPD, Pneumonia, Hip Fx and Total Knee, with dysphagia can be costly to Facility if not identified and managed (Medicare, CMS.Gov, May, 2015; Winchester & Winchester 2015).
- Undiagnosed or under-diagnosed dysphagia is a major, preventable, contributor to repeat hospital admissions (Kind et al., 2011).
- Instrumentation predicts hospital readmission. An effective Dysphagia Management plan should include instrumentation, when appropriate, and coordination of the interdisciplinary team to evaluate all Five Systems of Dysphagia to reduce the patient's future risk of aspiration, repeat hospitalization and mortality (Rofes et al., 2011; Winchester & Winchester, 2015).



Opportunity to Learn More About... *Successful Aging: Information for the SLP* For More Information Visit: <u>DMS Courses</u>

This two-hour seminar was designed to orient the Speech-Language Pathologist to the path that the brain takes in aging. Areas of instruction in this online educational course include brain plasticity, brain adaptation, neuronal plasticity, cognitive plasticity, and the role of the environment on the healthy brain in the aging patient. The role of the Speech Language Pathologist in promoting healthy aging is discussed, along with diagnostic and therapeutic predictors of more positive outcomes. DMS is committed to providing research-based educational opportunities for those interdisciplinary team members who are interested in learning more about dysphagia and the inherent risk factors associated with comorbidities. Provided live and the recorded for replay, visit DMS Courses for access.



INTRODUCING: Laura Yelvington MEd SLP CCC

Laura Yelvington is an accomplished Speech Language Pathologist, who obtained her bachelor's degree in Communication Sciences and Disorders from Auburn University. She obtained Master's degree in Education with a concentration in in Speech-Language Pathology from Valdosta State University in 2010, and worked in a private practice in Denver, Colorado, specializing in high-tech AAC during her CFY certification in 2011. Ms. Yelvington's expertise in Speech Language Pathology encompasses a wide variety of settings, however, her focus has been with the geriatric population and she has been providing expertise in Dysphagia Management for the last 18mos. Ms. Yelvington resides in the Atlanta, Georgia area, but she travels to Iowa, Georgia, Alabama, Florida, Tennessee and Colorado. We are so pleased to have Ms Yelvington as a vital member of the DMS team!



COPD-Induced Respiratory Dysphagia

The primary purpose of respiration is ventilation wherein air is moved in and out of the airways and lungs in order to exchange oxygen (O_2). Cells require O_2 , to break down nutrients and produce adenosine triphosphate (ATP), then excrete carbon dioxide (CO_2). The respiratory system is the body's system responsible for breathing, and helps to sustain life by bringing these essential elements (O_2 and CO_2 , respectively) to the body's cells. At the same time, this system removes harmful compounds from the body and maintains body fluids at a stable acid-base balance.

The upper respiratory tract consists of the nasal cavity, oral cavity, nasopharynx, oropharynx and laryngopharynx. The lower respiratory tract consists of the larynx, trachea, bronchus, bronchiole and alveoli. The respiratory system combines with the circulatory system (e.g. heart and blood vessels) to help O_2 to the cells of the body. A secondary function of the respiratory system is to provide blood pressure to the venous system, because the arterial portion of the circulatory system uses 95% of the blood pressure measured in the body.

The epithelial lining of the lungs and alveoli must efficiently exchange gases (O_2 and CO_2) between the air and the aqueous environment of the veins, and defend against environmental assaults such as irritants and infection. Respiration occurs automatically but can be voluntarily controlled.

Air enters through the nose. Nasal hairs remove large particles from inspired air. Swell body on the nasal fossae swells and decreases the flow of air on that side. This happens every 20-30min on one side or the other allowing the respiratory epithelium to recover from desiccation. Allergic reactions and infections can cause abnormal enlargement that obstructs airflow.

The structures of the nose, mouth and pharynx act to warm and moisten the air. From the larynx, air is conducted through the trachea, bronchi and bronchioles. The diaphragm is the primary muscle of inspiration. It is a thin, dome-shaped sheet of muscle that inserts into the lower ribs. When it contracts, it pushes downward and spreads out, increasing the vertical dimension of the chest cavity, driving up abdominal pressure. Increase in pressure drives the abdominal contents down and out, increasing the transverse size of the chest cavity.

Because the diaphragm is covered by the inferior surface of the parietal pleura, when it contracts, it pulls the pleura with it. This lowers the pleural pressure, which causes the alveolar pressure to drop. In turn, air flows into the lungs. During quiet expiration, the diaphragm passively relaxes and returns to its equilibrium position. During exercise, expiration becomes an active process. The abdominal muscles contract to raise abdominal pressure, which pushes the diaphragm upward and forces air out of the lungs. During quiet breathing, the diaphragm moves a centimeter (cm) or two up and down, but during exercise, it can more than 10cm.

At rest, a person breathes 12-15 times per minute, with 500 milliliters (mL) exchanged per breath, and nearly 25,000 times per day. Each minute, upwards of 6-8 liters (L) of gas inspired and expired per minute, with 250mL of O_2 entering the body and 200mL of CO_2 leaving it. Shockingly, more than 250 volatile substances have been found in human breath, such as bacteria, viruses, tobacco smoke, car exhaust, air pollutants, etc., which can cause deleterious effects on the body at any given moment.

Diseases of the respiratory system are grouped according to how they affect the lungs. There are those that limit or block the flow of gas exchange (e.g. at the alveoli), there are those that limit or block the flow of air in and out of the lungs (e.g. in the upper and lower respiratory tracts) and there are there are diseases that can affect the membrane that wraps around the outside of the lungs (e.g. the pleura). Other diseases can cause stiffening and/or scarring of the lungs. Some are caused by unusual changes in atmospheric pressure, while some are caused by primary/secondary exposure to inhalants (e.g. tobacco smoke, asbestos, radon gas, etc.).

There are two closely related lung diseases, emphysema and chronic bronchitis, which are combined into a term called Chronic Obstructive Pulmonary Disease (COPD). Overall, it is the 4th leading cause of death, worldwide.

Emphysema is a progressive, degenerative disease that destroys alveolar walls. As a result, clusters of small air sacs merge into larger chambers, which greatly decreases the surface area of the respiratory membrane, thereby reducing the volume of gases that can be exchanged through the membrane.

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COPD-induced Respiratory Dysphagia, Continued

Alveolar walls lose some of their elasticity and capillary networks associated with the alveoli diminish. Loss of tissue elasticity in the lungs contributes to making it increasingly difficult for a person with emphysema to exhale.

While more men, than women, suffer from emphysema, the number of female cases is increasing. Symptoms of emphysema can include a cough that never seems to go away or that gets worse over time, an increase in mucus in the lungs, a frequent need to clear one's throat, a shortness of breath or difficulty in engaging in movement or exercise. Patients with emphysema need to forcefully blow the air out in order to empty the lungs. Forcing the air out in this way puts pressure on the airways from the outside, compressing them and causing them to collapse. The walls of the alveoli may even tear. Excessive coughing may cause the airways to collapse as well.

As stretching and tearing of the walls of the air sacs continue, the lungs may become enlarged and less efficient at moving air into the lungs and contaminants out of the lungs. Because the walls of the air sacs are destroyed, there is less surface area available for gas exchange. Damage to the air sacs in the lungs not only results in difficulty breathing, but the heart also has to work harder to circulate blood through the lungs. All these changes make less oxygen available to the body. A large barrel-shaped chest, a poor air pumping system, and shortness of breath characterize emphysema. In advanced stages, every breath is difficult. A cough may or may not be present with emphysema.

Chronic bronchitis is an inflammation that results in the production of excess mucus, which narrows the bronchi, leading to coughing and difficulty in moving air in and out of the lungs. Chronic bronchitis, mainly caused by persistent inhalation of tobacco smoke, scars the lining of the bronchial tubes because the cells lining the bronchi are continuously inflamed.

Here, the mucus cannot be cleared because it is thicker and more difficult to cough up, providing a means for microbes and irritants to settle in the inferior lobes. The patient's degree of breathlessness experienced depends on the degree of airway congestion and inflammation of the bronchial mucus membranes.

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DYSPHAGIA MANAGEMENT IS A GOOD REHAB CLINICAL DECISION

Up to 60% of nursing home residents have feeding difficulties. Dysphagia accounts for **13-48% of all infections in a SNF** (Langmore et al., 1998). COPD, pneumonia and complications from MRSA infections have an undiagnosed or under treated **secondary risk factor of dysphagia** (Winchester & Winchester, 2015).

Dysphagia Management System's DST is designed for an **ongoing professional collaboration with the Rehabilitation Staff**, to better identify/reduce dysphagia risks and increase positive clinical outcomes. To better facilitate the understanding of dysphagia risks and the opportunity for functional dysphagia management, DMS offers in-person and online education as a part of the standard contract.

Accurate identification of dysphagia and aspiration risks, understanding the functional components affected, and an interdisciplinary approach to managing the patient's safety within the facility can improve outcomes significantly. Documentation of medical necessity and a change of condition clearly establishes the rehab intervention a patient needs.

The cost of treating Aspiration Pneumonia is \$15-20,000. A comprehensive Dysphagia Management evaluation utilizing the DST costs <2% of this Dysphagia complication (Cichero & Altman, 2012)



SNFs must understand what qualifies and develop a plan for reducing the potential for readmissions. (govtrack.us/congress/bills/113/hr4302/text)

COPD-induced Respiratory Dysphagia, Continued

COPD is evaluated in an individual after a thorough review of their personal and familial history, a physical examination, and tests of pulmonary function. COPD decreased breathing capacity requires a patient to need oxygen through other means. Treatments include bronchodialators, antibiotics, physical exercise to strengthen muscles, pulmonary rehabilitation, and in some cases, lung volume reduction surgery or lung transplantation. Commonly, dysphagia is a complication of COPD due to a breakdown in the Respiratory, Muscular and Neurological systems of Dysphagia.

Healthy respiratory function during the swallow can simply be described as the ability to hold one's breath for one or two seconds in order for the vocal cords to close, the epiglottis to retrovert to cover the trachea, and the bolus to safely pass over the protected airway and through the esophageal inlet during the pharyngeal stage of the swallow (Rofes, et al., 2011). When the process begins to break down due to trauma or disease, complications arise. Aspiration, aspiration pneumonia and aspiration pneumonitis are associated with COPD and uncontrolled dysphagia. Patients who aspirate while in a recumbent position affect the posterior segments of the upper lobes and apical segments of the lower lobes. Patients who aspirate in the upright or semi-recumbent position affect the basal segments of the lower lobes. It is well known that assessment of the cough and gag reflexes is an unreliable means of identifying patients at risk for aspiration, and so, patients with Respiratory Dysphagia, particularly those patients with COPD, require a comprehensive dysphagia evaluation utilizing instrumentation when appropriate and risk factors are high. (Winchester & Winchester, 2015).

Respiration occurs reflexively, but can be under voluntary control to a degree. A sensor system near the carotid sinus responds to the quantity of serum O_2 and CO_2 and serum pH. When O_2 levels decline below a specific criterion level or when CO_2 or pH increase beyond a certain level, a signal mediated by glossopharyngeal nerve is relayed to the brainstem's respiratory center, thereby increasing the respiration rate. In addition, inspiration and expiration centers have a bi-directional function as excitation of the inspiration inhibits expiratory musculature, and vice versa (Winchester & Winchester, 2015). Taken together, there exists a clear and complex interaction of the Neurological, Muscular and Respiratory Systems of Dysphagia.

For patients in this population, it is important to understand the purpose of respiratory treatments on degluition and their effects: thinning out secretions, so they may be easily expelled from the lungs. For this to happen, the patient must swallow the secretions or spit them out. Evaluating the presence of Respiratory Dysphagia and medication-filled secretions can be facilitated by the use of instrumentation, specifically by use of the fiberoptic endoscopic evaluation of swallowing (FEES). As experienced SLPs know, FEES provides the ability to view secretions when compared to other forms of instrumentation. For example, if a patient has a breathing treatment closely before his or her meal, residue may mix with a thickened liquid and ultimately decrease the viscosity of that thickened liquid to an unsafe consistency. Further, the bubbling or frothy foam of the medicated secretions can accumulate in the valleculae and pyriforms, affecting deglutition. Transit of the bolus may be affected by the dis-coordination of breath hold and swallowing, resulting in penetration into the laryngeal vestibule, with increased aspiration risk. Fatigue and positioning also plays a significant role in the safety of the COPD patient. Extending the rib cage and lungs through proper positioning, and considering fatigue with mastication and the breath hold coordination throughout the meal, can diminish the complications of dysphagia with COPD!

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The Focus of the Medicare Act of 2014 is on preventable readmissions and the SNF role in this process. (govtrack.us/congress/bills/113/hr4302/text)

A JOB WELL DONE!

Kristen Hamilton MEd SLP CCC - Atlanta GA

Kristen has been a practicing Speech Language Pathologist, living in the Atlanta, Georgia, area. She has worked in a SNF in the Buckhead, GA, area, for the past several years. Kristen's dedication to her patients and her commitment to delivering quality therapeutic care prompts her to refer her patients to DMS for the DST.

Recently, a patient was admitted to Kristen's facility with a diagnosis of pneumonia and respiratory failure. Upon evaluation, Kristen observed overt signs and symptoms of aspiration. While reviewing the patient's chart, Kristen noticed the patient had a MBSS one day before admission to the SNF, which cleared the patient for regular diet and thin liquids. Due to her observation of symptoms, Kristen made a DST referral as the patient's condition had changed for the worse. During the DST Instrumentation, the patient tolerated the first few trials with no aspiration, however, after 3 minutes of trials, the patient began to fatigue. Quickly, as the fatigue increased, the patient started to silently aspirate all food trial consistencies. The DST was able to provide effective dysphagia management recommendations based on the functional result of fatigue as noted during the evaluation. Thanks to Kristen's dedication to her patient's safety, and foresight to refer the patient for a DMS DST, the patient was placed on a more appropriate diet that reduced the re-hospitalization risk!

COMING SPRING 2016!

DMS is committed to providing Continuing Education Events to the Speech Pathologists in the facilities we serve. The Spring 2016 issue will have sign-up information to attend these FREE educational experiences and the potential to earn ASHA CEU's at minimal fees!

Did you know that all patients with degenerative diseases of the basal ganglia, cerebellum, and sub-thalamic regions experience dysphagia complications? Upwards of 34% of multiple sclerosis patients and 95% of patients with severe brainstem impairment experience dysphagia complications, as well! Research noted that brainstem lesions affected the muscular control of the lips, tongue, soft palate, vocal folds, and diaphragm; potentially interfering with all stages of the swallow.

In the Spring 2016 issue, we will be exploring the effects of Muscular Dysphagia in populations affected by degeneration of the basal ganglia and sub-thalamic regions, such as Parkinson's disease. Check us out!



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