

American Thoracic Society International Conference

# NURSING YEAR IN REVIEW



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# ATS 2018 – SAN DIEGO

## Nursing Year in Review Bibliography

Monday, May 21

### MODERATORS

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## PHYSIOLOGIC CONSIDERATIONS IN OLDER ADULTS WITH PULMONARY, CRITICAL CARE, AND SLEEP CONDITIONS

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### MENOPAUSE AND LUNG FUNCTION DECLINE

Triebner K, Matulonga B, Johannessen A et al. **Menopause is associated with accelerated lung function decline.** *Am J Respir Crit Care Med* 2017; 195(8):1058-65.

#### Summary

Menopause is characterized by significant changes in the hormones of the hypothalamic-pituitary-gonadal axis and is associated with the development of multiple chronic diseases. This study was designed to investigate the relationship between menopausal status and lung function decline. Data were collected from 19 different European health centers as part of a large, population-based cohort study (n=1438). Survey data, blood work, and spirometry were collected in three different waves spanning a 20-year time period (n of observations = 3295). The average lung function decline was -15.9cc/yr for forced vital capacity (FVC) (95% CI -18.2, -13.6) and -24cc/yr for forced expiratory volume in one second (FEV1) (95% CI -25.9, -22). Participants who were classified as “transitional” menopausal status experienced an additional FVC decline of -10.2cc/yr (95% CI -13.1, -7.2) and post-menopausal women exhibited an additional FVC decline of -12.5cc/yr (95% CI -16.2, -8.9) compared to non-menopausal women. FEV1 was also decreased in transitional and post-menopausal women compared to women who were still menstruating, though to a lesser extent. As the population continues to age, it will be important to recognize the effect that post-menopausal status may play with respect to lung function and respiratory health.

#### Comments

1. This study represents the first longitudinal, population-based study designed to examine the effects of menopause on lung function.
2. FVC declined at a faster rate than FEV1 which could be secondary to the concurrent bone loss (i.e. osteoporosis) suffered by post-menopausal women.
3. Current tobacco use was associated with a greater decrease in FEV1 compared to former smokers or never smokers; given the increasing prevalence of tobacco use in women, this accelerated decrease in pulmonary function may be even more pronounced in future cohorts.
4. Though the authors utilized latent class analysis to define menopause based on hormone levels and questionnaire data in later waves of the study, initial menopausal status was determined merely by questionnaire.

5. Future studies are needed to investigate the pathophysiology of lung function decline in post-menopausal women and to determine if hormonal therapies may be beneficial in minimizing these effects.

### ILD IN THE ELDERLY

Patterson KC, Shah RJ, Porteous MK et al. **Interstitial lung disease in the elderly.** *Chest* 2017; 151(4): 838-44.

#### Summary

Interstitial lung disease (ILD) encompasses numerous fibrotic and inflammatory pulmonary diseases. Though idiopathic pulmonary fibrosis (IPF) is largely a disease of the elderly, little is known about how advanced age impacts the prognosis of ILD. This retrospective cohort study investigated differences in pulmonary function and 3-year mortality in participants > 70 years old compared to those 18-69 years old (n=327). All participants exhibited chest CT findings consistent with ILD as determined by a thoracic radiologist and diagnosis of ILD had to be agreed upon by a multi-disciplinary group. The nonelderly control group had a significantly younger age of ILD onset (age 54 v. 74, p < 0.001). Type and prevalence of ILD also varied between groups with sarcoidosis and connective tissue disease-related ILD being the most common types in the nonelderly group and “unclassifiable” ILD and IPF comprising the majority of cases in the elderly. When examining the entire cohort, and within the IPF subgroup, there were no significant differences in forced vital capacity, diffusion capacity, or 3-year mortality rates between the elderly and nonelderly groups. Though they may have additional comorbidities, this study suggests that a diagnosis of ILD in the elderly does not necessarily portend a worse prognosis.

#### Comments

1. As the general population ages, it will be increasingly important to determine how elderly patients with ILD compare to the non-elderly when considering the appropriateness of more advanced therapies (i.e. lung transplant).
2. This study provides evidence that contradicts the assumption that most ILD in the elderly population is IPF.
3. Given the availability of pharmacologic therapies for IPF and other ILDs, it is more important than ever to accurately diagnose “unclassifiable” ILD and to screen all patients for signs/symptoms of connective tissue disease.

4. This study is limited by its small sample size, lack of diversity in the patient population, and uncharacteristic number of “unclassifiable” ILD cases.

## PULMONARY INFECTIONS, SIMVASTATIN, AND THE ELDERLY

Sapey E, Patel JM, Greenwood HL et al. **Pulmonary infections in the elderly lead to impaired neutrophil targeting, which is improved by simvastatin.** *Am J Respir Crit Care Med* 2017; 196(10):1325-36.

### Summary

Age is associated with increasing neutrophil dysfunction. Additionally, an inadequate neutrophil response has been demonstrated in cases of sepsis. This study was designed to assess neutrophil migration in the elderly and to determine if statin therapy could improve neutrophil migration. Older healthy (age > 60) and younger healthy (age < 35) participants were recruited from an established cohort of never smokers without known chronic diseases and normal spirometry. Participants with lower respiratory tract infections, community-acquired pneumonia, and sepsis were identified and enrolled within 24 hours of hospital admission. In vitro neutrophil migratory accuracy was lower in older individuals compared to young, healthy participants ( $1.3 \pm 0.1 \mu\text{m}/\text{min}$  v.  $1.8 \pm 0.2 \mu\text{m}/\text{min}$ ,  $p < 0.001$ ). Additionally, neutrophil migratory accuracy in older participants decreased with increasing levels of systemic infection ( $p < 0.0001$ ), though, in young adults, neutrophil migration was only affected in cases of sepsis. In vitro, simvastatin improved neutrophil migratory accuracy in older healthy participants ( $0.43 \pm 0.1 \mu\text{m}/\text{min}$  in control v.  $2.2 \pm 0.1 \mu\text{m}/\text{min}$  with simvastatin,  $p = 0.001$ ). Oral simvastatin also improved neutrophil migration in older participants with lower respiratory tract infections and community-acquired pneumonia compared to those not taking statins ( $1.1 \pm 0.2 \mu\text{m}/\text{min}$  v.  $0.43 \pm 0.1 \mu\text{m}/\text{min}$ , respectively,  $p=0.008$ ).

### Comments

1. This study is the first to demonstrate a link between increasing age, infection, and increased neutrophil adhesion marker expression leading to increased migratory activity as well as decreased adhesion marker expression with administration of simvastatin.
2. The results suggest that early simvastatin therapy in the elderly may be a treatment for lower respiratory tract infections and community-acquired pneumonia.
3. Of note, there was no improvement in neutrophil migratory accuracy in cases of sepsis (only in less severe cases of pulmonary infection).
4. This study is limited by the fact that other measures of neutrophil function were not reported in the in vitro trials.

5. Additional in vivo, randomized-controlled trials are needed to investigate the efficacy of simvastatin as a therapy for early pulmonary infection in older adults.

## RENAL REPLACEMENT THERAPY IN THE ELDERLY

Commereuc M, Guérot E, Charles-Nelson A, Constan A, Katsahian S, Schortgen F. **ICU patients requiring renal replacement therapy initiation: fewer survivors and more dialysis dependents from 80 years old.** *Crit Care Med* 2017; 45(8):e772-81.

### Summary

Given the aging population and limited healthcare resources, there is an increasing interest regarding the utility and effectiveness of advanced therapies in elderly patients admitted to the intensive care unit (ICU). This study aimed to determine whether older adults had increased mortality or dialysis dependence following an ICU stay complicated by acute kidney injury (AKI) compared to their younger counterparts. Participants ( $n=1530$ ) were enrolled from two large, teaching hospitals in France and divided into quintiles based on age with the first quintile including participants under age 53 and the last comprised of participants greater than 80 years old. Though mortality did increase with age, after adjustment for other risk factors, age was only a significant predictor of mortality for participants age 80 or older (Odds ratio 2.59 compared to the first quintile; 95% CI 1.66-4.03). Underlying chronic kidney disease (CKD) was the strongest predictor of dialysis dependence following ICU discharge ( $p < 0.001$ ). Regardless, three months following discharge, only 6% of participants > 80 years old were living at home independently without continued renal replacement therapy.

### Comments

1. Dialysis dependence was more common in the oldest quintile due, in part, to the high number of octogenarians with underlying CKD.
2. Though underlying CKD was the strongest predictor of continued dialysis dependence at discharge (CKD stage 3-4 OR 5.22,  $p < 0.001$ ; CKD stage 5 OR 20.57,  $p < 0.001$ ), it was also a predictor of ICU survival ( $p < 0.001$ ); this is likely because participants with CKD were more likely to undergo renal replacement therapy for metabolic abnormalities or worsening renal disease as opposed to severe sepsis.
3. Consistent with recent studies, type of renal replacement therapy was not associated with continued dialysis dependence after ICU discharge.
4. One major limitation of the study was that data regarding the number of participants who were not triaged to the ICU or offered renal replacement therapy (or who were offered these therapies and declined) were not included.
5. This study provides important data that can be utilized for help with prognostication during goals of care discussions with patients and their families.

## OTHER ARTICLES OF INTEREST

## PULMONARY PHYSIOLOGY AND THE ELDERLY

Di Q, Wang Y, Zanobetti A et al. **Air pollution and mortality in the Medicare population.** *NEJM* 2017; 376(26):2513-22.

Kim, J, Heise RL, Reynolds AM, Pidaparti RM. **Aging effects on airflow dynamics and lung function in human bronchioles.** *PLoS ONE* 2017; 12(8):e0183654.

Wong CK, Smith CA, Sakamoto K, Kaminski N, Koff JL, Goldstein DR. **Aging impairs alveolar macrophage phagocytosis and increases influenza-induced mortality in mice.** *J Immunol* 2017; 199:1060-8.

## LUNG TRANSPLANT AND THE ELDERLY

Courtwright A, Cantu E. **Lung transplantation in elderly patients.** *J Thorac Dis* 2017; 9(9):3346-51.

## CRITICAL CARE AND THE ELDERLY

Anderson FH, Flaatten H, Klepstad P, et al. **Long-term outcomes after ICU admission triage in octogenarians.** *Crit Care Med* 2017; 45:e363-71.

Guidet B, Leblanc G, Simon T et al. **Effect of systematic intensive care unit triage on long-term mortality among critically ill elderly patients in France.** *JAMA* 2017; 318(15):1450-59.

Huang D, Ma, H, Zhong W et al. **Using M-mode ultrasonography to assess diaphragm dysfunction and predict the success of mechanical ventilation weaning in elderly patients.** *J Thorac Dis* 2017; 9(9):3177-86.

Salna M, Takeda K, Kurlansky P et al. **The influence of advanced age on venous-arterial extracorporeal membrane oxygenation outcomes.** *Eur J Cardiothorac Surg* 2018; doi:10.1093/ejcts/ezx510.

## SLEEP IN THE ELDERLY

Brandão GS, Gomes GSBF, Brandão GS et al. **Home exercise improved the quality of sleep and daytime sleepiness of elderlies: a randomized controlled trial.** *Multidiscip Respir Med* 2018; 13(2).

Mander BA, Zhu AH, Lindquist JR et al. **White matter structure in older adults moderates the benefit of sleep spindles on motor memory consolidation.** *J. Neurosci* 2017; 37(48):11675-87.

## OLDER ADULTS AND CHRONIC PULMONARY DISEASE

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### HOME-BASED PULMONARY REHABILITATION FOR COPD

Holland AE, Mahal A, Hill CJ, et al. **Home-based rehabilitation for COPD using minimal resources: a randomised, controlled equivalence trial.** *Thorax* Published Online First: 26 September 2016. doi: 10.1136/thoraxjnl-2016-208514

#### Summary

While pulmonary rehabilitation (PR) is strongly recommended in COPD guidelines, and evidence suggests that it improves functional exercise capacity and health-related quality of life, and reduces healthcare utilization, less than 10% of COPD patients actually complete a rehabilitation program. Barriers to adherence of center-based rehabilitation include, age, travel requirements, symptoms, smoking and mobility. This RCT compared completion rates, clinical benefits and cost between two PR models (a home-based model compared to traditional center-based rehabilitation). COPD participants (n=80) from 2 hospital pulmonary rehabilitation waitlists underwent 8 weeks of aerobic exercise training, resistance training and self-management education by a physiotherapist in their homes, while 86 patients underwent a center-based rehabilitation program. Home-based patients were supervised for the first session then continued unsupervised sessions with weekly structured phone calls from a physiotherapist for the following 7 weeks. Functional exercise capacity and health-related quality of life improved in both groups at the end of intervention and returned to baseline 12 months post-rehabilitation. There were no significant differences between groups. As home-based models utilize fewer resources, require minimal supervision and remove significant barriers to access for patients, a structured home-based pulmonary rehabilitation model may be useful for patients who cannot access traditional center-based programs.

#### Comments

1. This study addressed the issue that although evidence suggests that pulmonary rehabilitation improves functional exercise capacity and health-related quality of life in COPD patients, fewer than 10% of COPD patients complete pulmonary rehabilitation due to barriers to access of center-based programs.
2. This RCT highlights that home-based pulmonary rehabilitation programs that utilize fewer resources, require minimal supervision and remove patient access barriers, are not inferior to center-based rehabilitation in COPD patients.
3. The study demonstrates that a home-based pulmonary rehabilitation program may provide a feasible alternative to center-

based programs for patients with problems accessing traditional center-based programs.

### HOME-BASED DISEASE MANAGEMENT INTERVENTION IN SEVERE COPD

Kessler R, Casan-Clara P, Koehler D, et al. **COMET: a multicomponent home-based disease-management programme versus routine care in severe COPD.** *Eur Respir J* 2018; 51: 1701612.

#### Summary

Compared to patients with mild to moderate COPD, patients with severe COPD have worse health status, higher risk of hospitalization due to exacerbations and higher mortality rates. Patients and families shoulder the majority of the burden of daily care. Patients must develop strategies to cope with their disease, recognize when professional care is needed, adopt a healthy lifestyle, and avoid modifiable risk factors for exacerbations and hospitalizations. The COPD Patient Management European Trial (COMET) was an international open-design clinical trial that assessed the efficacy and safety of home-based COPD disease management in patients with severe COPD. One hundred and fifty seven patients received a home-based disease management intervention which consisted of a self-management program and coaching, home tele-monitoring, care coordination and medical management, while 162 control patients received the usual management practices at the study center. While disease management patients did not achieve the primary outcome of significant reduction in unplanned all-cause hospitalization days annually, they had fewer acute care hospitalization days, a lower BODE index, and a lower mortality rate than usual management patients. There was no difference between groups in exacerbation frequency.

#### Comments

1. This study targeted patients with severe COPD who have worse health outcomes than patients with mild to moderate disease, and have a high burden of daily care.
2. The COPD Patient Management European Trial (COMET) clinical trial aimed to evaluate the efficacy and safety of a home-based multicomponent disease management intervention for patients with severe COPD.
3. The study's primary outcome, of significantly reduced unplanned annual hospitalization days in the disease management group, was not achieved, however disease management patients had significantly fewer acute care hospitalization days, a lower

BODE index, and a lower mortality rate than usual management patients.

4. While results should be considered with caution, the study offers some support for the feasibility of a multicomponent home-based disease management intervention in severe COPD patients, which may assist in reducing the burden of disease in this high risk population.

## MODIFIABLE FACTORS ASSOCIATED WITH ASTHMA MORBIDITY IN OLDER ADULTS

Hsu J, Chen J, Mirabelli MC. **Asthma Morbidity, Comorbidities, and Modifiable Factors Among Older Adults.** *J Allergy Clin Immunol Pract.* 2018 Jan-Feb;6(1):236-243.e7. doi: 10.1016/j.jaip.2017.06.007. Epub 2017 Jul 26.

### Summary

Older adults, particularly women, have increased asthma morbidity. There is a paucity of research describing interventions to improve asthma control in this population. With the number of older adults rapidly increasing, this study aimed to identify risk factors associated with asthma hospitalizations and emergency department or urgent care center visits (ED/UCV) in older adults. Data were analyzed from 14,076 adults with active asthma, aged  $\geq 65$  years, from an asthma surveillance and call back survey between 2006 and 2010 in the U.S. Asthma-related hospitalizations were reported by 5.7% of patients, and 10.6% reported  $\geq 1$  asthma-related ED/UCV, in the past year. Results showed that asthma-related hospitalizations and ED/UCV in older adults were associated with clinical comorbidities, mold in the home, and financial barriers to asthma-related health care (inability to see a primary care doctor for asthma, see a specialist for asthma, or buy medication for asthma because of cost). Depression, obesity, and cost barriers to asthma-related health care or medication were higher in female compared to male participants. The study identified several modifiable factors associated with asthma morbidity in older adults. The sex-related cost barriers may be associated with a higher burden of asthma in older women compared to men.

### Comments

1. Asthma morbidity is higher in older adults, particularly women, and interventions aimed at reducing asthma burden and improving disease control in this population are lacking.
2. The authors analyzed data from a large sample of over 14,000 adults with active asthma, aged  $\geq 65$  years and found that emergency and urgent asthma-related hospitalizations were associated with clinical comorbidities (COPD, CAD, depression and obesity), mold in the home and impaired access to health care.
3. The study identified that female sex was associated with cost-related inability to access health care, comorbid depression and

obesity, which may translate into the higher burden of asthma previously reported in older women compared to older men.

4. This study identified several potentially modifiable factors associated with increased asthma morbidity in older adults, which could inform identification and assessment of patients at higher risk.

## AGE-RELATED EFFECTS ON COPD OUTCOME

Parulekar A D, et al. **Examining the Effects of Age on Health Outcomes of Chronic Obstructive Pulmonary Disease: Results From the Genetic Epidemiology of Chronic Obstructive Pulmonary Disease Study and Evaluation of Chronic Obstructive Pulmonary Disease Longitudinally to Identify Predictive Surrogate Endpoints Cohorts.** *J Am Med Dir Assoc* 2017 Dec 1;18(12):1063-1068. doi: 10.1016/j.jamda.2017.09.028.

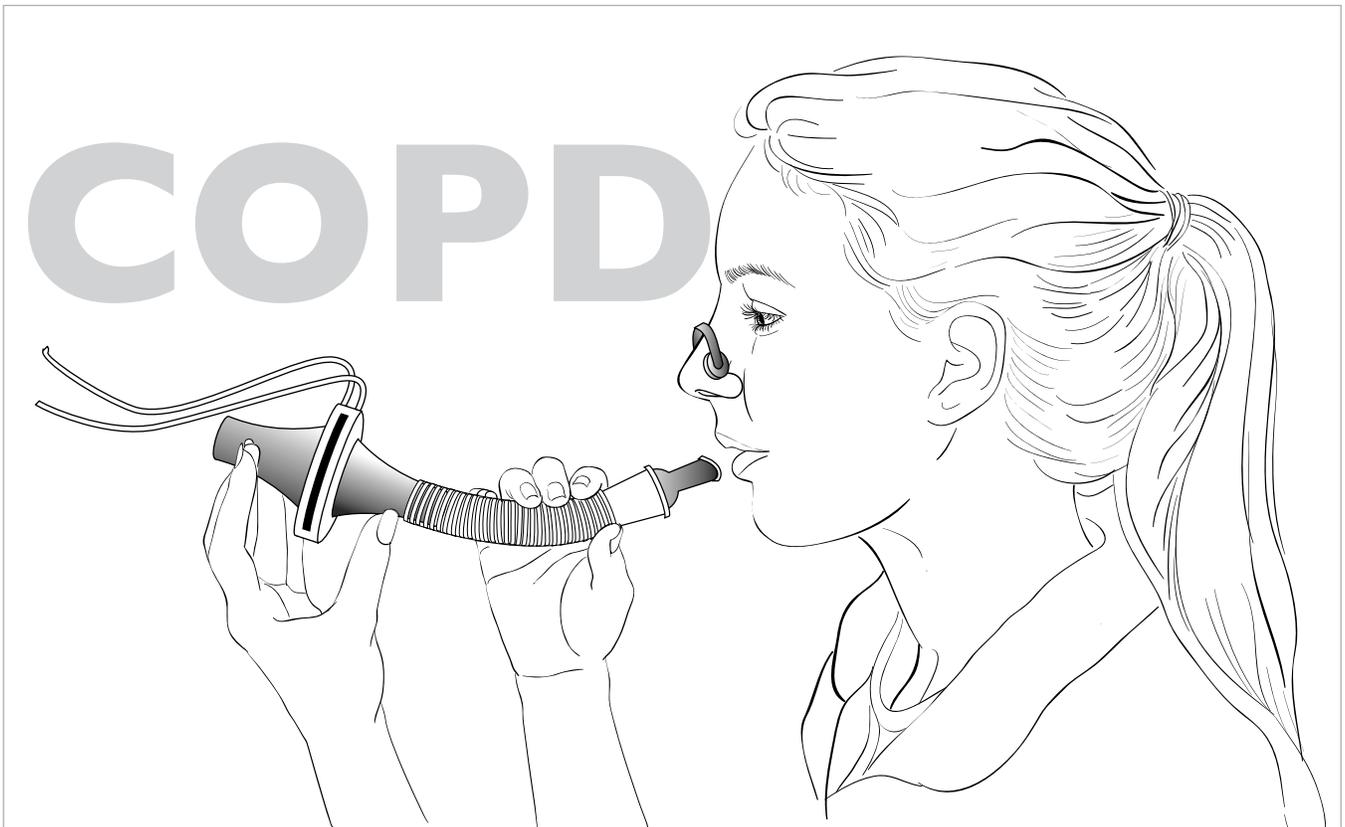
### Summary

Older adults experience increased prevalence of COPD. Little is known of the differences in disease characteristics between adults aged  $\geq 65$  years and younger adults. In the context of a rapidly aging population, this study aimed to compare COPD disease characteristics and impacts between younger and older adults. Data were analyzed from patients with GOLD grade II-IV COPD from the Genetic Epidemiology of COPD Study (COPDGene) ( $n=3690$ ) and Evaluation of COPD Longitudinally to Identify Predictive Surrogate Endpoints (ECLIPSE) ( $n=2161$ ) cohorts. Older patients from both cohorts had lower lung function (FEV<sub>1</sub>, use of long-term oxygen therapy, and radiographic evidence of emphysema and air trapping) and reduced exercise tolerance (6-minute walk distance) compared to younger patients. Comorbidities (hypertension, coronary artery disease, congestive heart failure, diabetes, GERD and asthma) were also more common in older patients. However, frequency and severity of exacerbation was reduced in older patients compared to younger patients. This study highlighted that although COPD disease characteristics are worse in older adults, they experience fewer and less severe exacerbations and enjoy a better quality of life than younger adults with COPD. The authors suggest that this may be due to an adjustment of expectations accompanying older age and adaptation to the disease.

### Comments

1. This study addresses the gap in the knowledge of differences in COPD disease characteristics within the older adult population compared to younger patients.
2. The authors analyzed baseline disease severity, comorbidities, exacerbation frequency and severity and quality of life scores in patients  $\geq 65$  years, compared to patients  $< 65$  years, from 2 large COPD patient cohorts, as well as associations between age with COPD characteristics and health outcomes.

3. The study results indicate that older patients have more severe disease and reduced exercise tolerance compared to younger adults however frequency and severity of exacerbations is lower and quality of life is better in the older adult population.
4. The results of this study suggest that older adults with COPD may adjust their expectations and adapt to their disease better than younger adults with COPD.



## CRITICAL ILLNESS AND OLDER ADULTS

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## FRAILITY

Flaatten H, De Lange DW, Morandi A, Andersen FH, Artigas A, Bertolini G, et al. VIP1 Study Group. **The impact of frailty on ICU and 30-day mortality and the level of care in very elderly patients ( $\geq 80$  years).** *Intensive Care Medicine*, 2017 Dec; 43(12), 1820-1828.

## Summary

Older adults are at high risk for increased mortality and poor quality of life after critical illness. Reduced cognitive, physical and physiologic reserve or clinical frailty is associated with mortality and adverse outcomes in older adults. This was a cohort study aiming to estimate the incidence and effect of clinical frailty among very old adults admitted to the ICU (VIPs). Pre-illness frailty was measured using the Clinical Frailty Scale administered on admission to either the patient or proxy. In this cohort (n=5021) admitted to 311 European ICU's, pre-illness frailty was present in 43% of VIPs and independently associated with lower 30-day survival. Frail patients were older, more likely to be female, have higher admission sequential organ failure assessment scores, unplanned admission, and more likely to have treatment withheld or withdrawn than those VIPs with lower frailty. Almost 50% of those patients admitted following elective surgery had a low frailty score while almost 50% of acute patients had high frailty score. These findings demonstrate that baseline frailty rather than age is a more accurate representation of clinical vulnerability and recoverability, important considerations when clinicians and families make treatment decisions that include ICU care.

## Comments

1. Frailty is a state of age-related decline in physical, physiologic or cognitive function and reserve that increases vulnerability to stress.
2. Frailty has been associated with increased risk of poor health outcomes including falls, disability and mortality.
3. Frailty rather than age may be a more accurate representation of clinical vulnerability and recoverability for older adults admitted to the ICU.
4. Older adults who were frail prior to their acute illness had higher mortality, have an unplanned rather than elective admission to the ICU and have treatment withheld or withdrawn.
5. Measurement of frailty may be valuable to clinicians and families making treatment decisions for older adults admitted to the ICU.

## NON-PHARMACOLOGIC MANAGEMENT OF DELIRIUM

Waszynsk CM, Milner KA, Staff I, Molony SL. **Using simulated family presence to decrease agitation in older hospitalized delirious patients: A randomized controlled trial.** *International Journal of Nursing Studies*, 2018 Jan; 77, 154-161.

## Summary

Simulated family presence (SFP) has been effective in decreasing agitation in nursing home residents. This study examined the effect of SFP on agitated delirium in acutely ill adults. Participants (n= 126) were randomized to one of 3 arms; SFP – a one minute video with a family message, a nature video or usual care. Agitation was measured prior to, during, immediately and 30 minutes post-intervention with the Agitated Behavior Scale (ABS). There were no statistically significant differences in clinical or demographics based on group assignment. The median age of this group was 79 years, most were male (53.2%), Caucasian (82.9%), spouseless (55%), had baseline dementia (60.4%), were admitted for a medical diagnosis (79.3%) and did not receive sedating medications (79.3%). Most family members who participated were adult children (76%). The video messages were largely positive and warm (85.7%) with the remaining conveying neutral messages. There was statistically significant (p <0.001) decreases in the median ABS score across the four time periods for both the SFP and nature sounds groups but not the usual care group. The SFP group had significantly (p < 0.001) lower median ABS scores during the intervention period than the nature video and usual care groups. There were no differences in the post-intervention median ABS scores between groups. These findings provide preliminary support for use of SFP as a non-pharmacological intervention to decrease agitation for hospitalized delirious patients.

## Comments

1. Delirium affects hospitalized older adults placing them a high risk for adverse outcomes.
2. Agitated delirium is distressing for patients, families and staff and presents a potential risk for unsafe behaviors such as treatment disruption or resistance.
3. Testing of non-pharmacologic interventions is necessary to design patient-centered multi-component delirium management strategies.
4. Simulated Family Presence (SFP) is a simple strategy that may decrease agitation in delirious adults.

5. Further work is necessary to test efficacy of this intervention in reducing physical restraints and sedation medication use in older adults.

## FAMILY CAREGIVER HEALTH

Beesley SJ, Hopkins RO, Holt-Lunstad J, Wilson EL, Butler J, Kuttler KG, Orme J, Brown SM, Hirshberg EL. **Acute Physiologic Stress and Subsequent Anxiety Among Family Members of ICU Patients.** *Critical Care Medicine*, 2018 Feb; 46(2), 229-235.

### Summary

Families of patients in the ICU experience both acute and long term psychological problems and decreased quality of life as a component of post-intensive care syndrome (PICS-F). Salivary cortisol is a measure of acute and chronic stress and has been associated with anxiety in other populations. The aim of this study was to determine if salivary cortisol is associated with anxiety in family members of ICU patients 3 months after ICU admission. Five consecutive saliva samples were collected by family members (n=92) at specific times the day following study enrollment. At the 3 month follow-up, 29 participants (32%) had probable anxiety as measured by the Hospital Anxiety and Depression Scale (HADS) in a telephone interview. Cortisol level was not associated significantly with anxiety at 3 months following their family member's ICU admission ( $p=0.70$ ). Cortisol awakening response is a measure of the increase in cortisol level from the awakening sample to the following sample 30 minutes later. Cortisol awakening response was associated with anxiety ( $p=0.02$ ). These results support findings from previous studies that describe significant and persistent psychological problems for family members of ICU patients. Using cortisol awakening response may identify individuals at risk for developing Post-ICU anxiety. Interventions may be targeted to reduce stress in those family members during the acute phase of their family member's critical illness.

### Comments

1. Families of ICU patients are at high risk for developing persistent psychological problems and decreased quality of life components of Post-Intensive Care Syndrome.
2. Acute stress can be measured by salivary cortisol.
3. The aim of this study was to determine the association between salivary cortisol level and anxiety in families of ICU patients 3 months post-ICU discharge.
4. Twenty nine participants (32%) reported symptoms of anxiety at the 3-month follow-up.
5. Although salivary cortisol levels were not associated with anxiety at 3 months; cortisol awakening response was significantly associated with anxiety at 3 months.

## ICU SURVIVORSHIP

Wang S, Lasiter S, Zarzaur B, Campbell T, Boustani M, Khan B. **Critical Care Recovery Center: Can a Geriatric Model of Care Guide Recovery of ICU Survivors?** *Best Practices in Mental Health*, November 2017 13(2), 50-60.

### Summary

With improved care, many older adults survive a critical illness but are left with long-term declines in physical psychological and cognitive function known as Post-Intensive Care Syndrome (PICS). Few post-ICU care models have been developed to manage the profound effects of PICS. A unique approach is one modeled after the Health Aging Brain Center because dementia and PICS have overlapping care needs. The Critical Care Recovery Center was developed to address the complex needs of ICU survivors at high risk for developing PICS. Clinicians utilized structured clinical protocols based on the Consortium to Establish a Registry for Alzheimer's Disease recommendations to evaluate neurologic, physical and neuropsychiatric function of patients in the CCRC. Families were also included as active members of the team and also monitored for distress. Fifty-one patients who had participated in a delirium reduction program during their stay in the ICU. Most patients had high levels of pre-illness physical function; over half had pre-illness cognitive impairment. More than half received mechanical ventilation and the average length of stay was 17.6 days. Mild cognitive impairment was present in 88.2% of patients and depression was present in 58.8% of patients at follow-up. Future directions will include gold standard assessment of psychiatric symptoms.

### Comments

1. The number of older adults who survive critical illness will continue to grow due to the increases in the older adult population and advances in ICU care.
2. Older adults are at risk of developing Post-ICU Syndrome (PICS) characterized by persistent cognitive, physical and psychological impairments which lead to decreased quality of life.
3. Similar patterns of symptom presentation and care needs are present in PICS and dementia.
4. A Critical Care Recovery Clinic (CCRC) has been developed based on geriatric models of care to meet the complex needs of ICU survivors with PICS.
5. Participants who had received delirium reduction strategies while in the ICU were seen in the CCRC.
6. Mild cognitive impairment and depression were present in over half of the patients seen in follow-up.

## OTHER ARTICLE OF INTEREST

Morandi A, Davis D, Bellelli G, Arora RC, Caplan GA, Kamholz B, et al. **The diagnosis of delirium superimposed on dementia: an emerging challenge.** *Journal of the American Medical Directors Association*, January 2017 18(1), 12-18.

## PULMONARY REHABILITATION IN THE OLDER ADULT

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### PATIENT SELECTION

Vitacca M, Comini L, Barbisoni M, Francolini G, Paneroni M, Ramponi JP. **A pulmonary rehabilitation decisional score to define priority access for COPD patients.** *Rehabilitation Research and Practice* 2017, Art ID 5710676. <https://doi.org/10.1155/2017/5710676>

#### Summary

This study describes the evaluation of an ad hoc 17-item tool, the Pulmonary Rehabilitation Decisional Score. This tool was developed to provide a priority score for PR access. This tool can help identify which patients should start PR within 30 days, 30-60 days or > 60 days.

#### Comments

1. This tool attempts to address the under- and over-prescription of PR.
2. Age is one item included in the tool. An age > 75 years is allocated the highest priority score
3. The tool evaluates: lung function, clinical parameters, disability, frailty and participation in ADLs
4. The clinical parameters evaluated include: age, BMI, dyspnea (MRC score), 6 MW distance, comorbidities and other components including quality of life and psychological symptoms.

### INTEGRATED PROGRAMS

Desveaux L, Harrison S, Lee A, Mathur S, Goldstein R, Brooks D. **"We are all there for the same purpose": Support for an integrated community exercise program for older adults with HF and COPD.** *Heart & Lung* 2017; 46: 308-12

#### Summary

This qualitative study, using semi-structured interviews, explores the attitudes of older adults with heart failure (HF) and COPD who have completed rehabilitation. Motivational program leadership and appropriate facilities were noted to support adherence to prescribed activity. In community exercise programs, combining HF and COPD patients, based on symptoms and functional status versus primary diagnosis was effective.

#### Comments

1. Transition from formal rehabilitation to community, maintenance exercise can present challenges.
2. The lack of structure in maintenance exercise has been identified as a significant issue.

3. Maintenance exercise that is tailored to functional ability promotes adherence to attendance.
4. Recognition of the supportive group dynamic is an important finding.

### PSYCHOSOCIAL OUTCOME IN OLDER ADULTS

Alsaraireh FA, Aloush SM. **Does pulmonary rehabilitation alleviate depression in older patients with chronic obstructive pulmonary disease.** *Saudi Medical Journal* 2017; 38 (5): 491-6.

#### Summary

While PR has been shown to positively impact psychosocial outcomes such as depression or anxiety across attendees, specific impact of PR on depression on older adults (> 70 years) has not been as clearly described. This retrospective study evaluated depressive symptom outcomes at baseline and at the end of a formal PR program. Statistically significant decline in Beck Depression Inventory scores from baseline to PR program completion was noted. Clinically significant alleviation of depression was seen in 73% of COPD participants who were > 70 years of age.

#### Comments

1. A statically significant reduction was noted in Beck Depression Inventory scores (baseline mean=17, SD=7.8 vs. post-PR mean 9, SD=4.3).
2. While 73% of older patients revealed clinically significant improvement in Beck Depression Inventory score, 19% did not have a clinically significant improvement. The final 8% reported worse depressive scores at completion of PR.
3. In participants with higher baseline depression scores, they were 1.3 times more likely to achieve clinically significant improvement in depression (OR 1.3, p=0.00).

### INTENSIVE PR IN LUNG CANCER

Lai Y, Huang J, Yang M, Su J, Liu J, Che G. **Seven-day intensive preoperative rehabilitation for elderly patients with lung cancer: a randomized controlled trial.** *Journal of Surgical Research* 2017; 209: 30-6.

#### Summary

This randomized controlled trial evaluated one week of intensive in-patient PR prior to lung cancer lobectomy compared to a control group who received conventional

pre-operative respiratory management in persons at least 70 years of age. The PR group had a significantly shorter length of stay ( $p=0.01$ ). The use of an intensive in-patient PR prior to lung cancer surgery may be a feasible strategy.

### Comments

1. The intensive in-patient PR program included inspiratory muscle training and aerobic endurance training using a NuStep with progressive increase in resistance.
2. Significant difference were seen in 6 minute walk distance ( $p=0.029$ ) and peak expiratory flow ( $p<0.01$ ) at post-intervention.
3. No significant differences were seen between the groups for post-operative complications or mortality.

## EMPOWERMENT OF THE ELDERLY PATIENT

Fotokian Z, Shahbouloughi FM, Fallahi-Khoshknab M, Pourhabib A. **The empowerment of elderly patients with chronic obstructive pulmonary disease: Managing life with the disease.** *PLoS ONE* 2017; 12 (4): e0174028. <https://doi.org/10.1371/journal.pone.0174028>

### Summary

The literature reveals that COPD negatively impacts the ability of older adults to maintain agency over their lives and disease. In response, empowerment programs have been shown to be beneficial. Empowerment is based on individual self-determination using a procedural process where the patient gains power over their condition and its management. Empowerment programming includes focus to promote self-efficacy, well-being and quality of life. This exploratory study was conducted using semi-structured interviews.

### Comments

1. Themes around “managing life with COPD” include: help to stabilize the elder’s life; preparing for battle with disease; and striving to keep abreast of life.
2. The theme “encountering the complexity of the disease” notes the role of the elderly COPD patient, the family caregivers and the healthcare providers.
3. Patients describe “knowledge acquisition” as essential for their empowerment.
4. As COPD patients and their healthcare providers are partners, it is imperative that providers understand and participate in empowering activities with their patients.

## PHYSICAL FRAILTY AND PR

Maddocks M, Kon SS, Canavan JL, Jones SE, Nolan CM, Labey A, Polkey MI, Man W D. **Physical frailty and pulmonary rehabilitation in COPD: a prospective cohort study.** *Thorax* 2016; 71: 988-95

### Summary

This prospective cohort study was conducted to describe the prevalence of frailty in patients with stable COPD. The investigators also ask how frailty affects the completion and outcomes of pulmonary rehabilitation. The study included 816 patients with COPD. Of these, 209 were defined as frail. Frailty was noted to increase with age, GOLD stage, MCR score and age-adjusted comorbidity burden (all with  $p < 0.01$ ). Frail patients were noted to have an odds ratio of 2.20,  $p=0.001$  for PR program non-completion. However, this study noted that 71/115 (61.3%) of pre-PR frail patients who completed PR no longer met case criteria for frailty.

### Comments

1. Frailty affects one in 4 COPD patients entering PR.
2. Frailty is a strong risk factor for PR program non-completion.
3. Favorable outcomes are seen for the frail COPD patient who completes PR.
4. Alternative modalities are noted by the investigators to support the frail patient in PR including the addition of novel strategies like neuromuscular stimulation to supervised exercise.

## OTHER ARTICLES OF INTEREST

Bennett D, Bowen B, McCrty P, Subramaniam A, O’Connor M, Henry MT. **Outcomes of pulmonary rehabilitation for COPD in older patients: a comparative study.** *COPD* 2017; 14 (2): 170-5.

Bone AE, Heggul N, Kon S, Maddocks M. **Sarcopenia and frailty in chronic respiratory disease: lessons from gerontology.** *Chronic Respiratory Disease* 2017; 14 (1): 85-99.

Yoshimura K, Sato S, Muro S, Yamada , Hasegawa K, Kiyokawa H, Misima M, Aoyama T. **Interdependence of physical activity, loss of muscle mass and low dietary intake: extrapulmonary manifestations in older chronic obstructive pulmonary disease patients.** *Geriatrics Gerontology International* 2017; 18: 88-94.

van de Bool C, Rutten EPA, van Helvoort A, Franssen FME, Wouters EFM, Schols AMWJ. **A randomized clinical trial investigating the efficacy of targeted nutrition as adjunct to exercise training in COPD.** *Journal of Cachexia, Sarcopenia and Muscle* 2017; 8: 748-58.

## SLEEP DISORDERED BREATHING IN OLDER ADULTS

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## THE IMPACT OF SLEEP DISORDERED BREATHING ON COGNITIVE FUNCTION

Leng Y, McEvoy CT, Allen IE, Yaffe K. **Association of sleep-disordered breathing with cognitive function and risk of cognitive impairment: A systematic review and meta-analysis.** *JAMA Neurol.* 2017; 74(10):1237-1245

## Summary

Fourteen population-based studies (4,288,419 total enrolled men and women) were critically evaluated to examine the effects of Sleep Disordered Breathing (SDB) determined by the apnea-hypopnea index (AHI) or clinical diagnosis on both the risk of cognitive impairment (based on standard tests or clinical diagnosis) and on the domains of cognitive function (global function, delayed memory, and executive function). Six studies were prospective and 8 were cross-sectional. Three studies used clinically diagnosed SDB, while the others (n = 11) reported results as AHI cutoffs or continuous scores. Definitions of SDB within the studies included AHI4% (n=4), AHI3% (n=3), or did not specify (n=1). Of the prospective studies evaluated, pooled risk ratios suggested that participants with SDB were 26% more likely to develop cognitive impairment. Pooled standard mean difference of 8 cross-sectional studies suggested that SDB was associated with a modest impairment in executive function (SMD -.05) but not with global cognition or memory. The authors concluded that SDB is associated with an increased risk of cognitive impairment and associated with decreased executive function. Additional studies are needed to determine the underlying mechanisms within this relationship.

## Comments

1. The findings from this systematic review support a link between SDB and cognitive impairment in older adults and provide justification for future research to identify the mechanism(s) that mediate this relationship as well as to explore the role of SDB as a modifiable risk factor to potentially mitigate the risk of accelerated cognitive impairment.
2. Evaluation of between-study heterogeneity was evaluated, identifying significant variation in measurements for SDB and cognitive function.
3. Given the high prevalence of cognitive impairment and SDB in older adults, these results could have significant clinical implications supporting the notion that early identification of SDB in older adults may help reduce a person's risk of cognitive impairment.

## SLEEP DISORDERED BREATHING AND THE GENETIC SUSCEPTIBILITY TO ALZHEIMER DISEASE

Johnson DA, Lane J, Wang R, Reid M, Djonlagic I, Fitzpatrick AL, Rapp SR, Charles LE, O'Hara R, Saxena R, Redline S. **Greater cognitive deficits with sleep-disordered breathing among individuals with genetic susceptibility to Alzheimer disease: The Multi-Ethnic Study of Atherosclerosis.** *Ann Am Thorac Soc* 2017; 14 (11): 1697-1705

## Summary

This cross-sectional study evaluated the association between SDB and cognitive function in the Multi-Ethnic Study of Atherosclerosis (MESA) and assessed whether the association was modified by the apolipoprotein ε-4 (APOE-ε4) allele in individuals with a genetic predisposition to developing Alzheimer's disease (AD). Participants (N= 1,752) completed a type 2 in-home sleep study, genetic testing for APOE-ε4, and a neuropsychological test battery. Sleep variables included: hypoxemia (percentage sleep time less than 90% oxyhemoglobin saturation), the apnea-hypopnea index (AHI), daytime sleepiness assessed by the Epworth Sleepiness Scale score (ESS), and sleep apnea syndrome (SAS; AHI>5 and ESS > 10). The participants were 45.4% men, age 68.1 ± 9.1 years, with a median AHI of 9.0 and mean ESS of 6.0. Approximately 9.7% had the sleep apnea syndrome (SAS), and 26.8% had at least one copy of the APOE-ε4 allele. In adjusted analyses, overnight hypoxemia and increasing sleepiness were associated with poorer attention and memory. SAS and higher ESS scores were associated with poorer attention and processing speed. Associations were strongest in APOE-ε4 risk allele carriers.

## Comments

1. This study supports SDB as a modifiable risk factor for mild cognitive impairment and dementia especially in those individuals with a genetic susceptibility to AD and supports SDB screening and treatment as an approach to reduce dementia risk.
2. Although effect estimates were small, hypoxemia as a result of SDB was associated with impaired cognition and supports future clinical studies that focus on treatment of SDB to consider expanding treatment goals beyond the AHI to include hypoxemia - potentially impacting the current standard of care for SDB.
3. The strengths of the study included a sample that was well distributed by race/ethnicity, use of in home polysomnography,

and use of a comprehensive neuropsychological test battery to detect cognitive deficits; causality cannot be inferred between SDB and cognitive impairment due to the cross-sectional study design.

4. Future research should focus on understanding the molecular mechanisms of AD and on potential neuroimaging biomarkers of cognitive decline in SDB to help further define the relationship between cognitive impairment and SDB.

## THE EFFECT OF OBSTRUCTIVE SLEEP APNEA ON AMYLOID BURDEN

Sharma RA, Varga AW, Bubu OM, Pirraglia E, Kam K, Parekh A, Wohlleber M, Miller MD, Andrade A, Lewis C, Tweardy S, Buj M, Yau PL, Sadda R, Mosconi L, Li Y, Butler T, Glodzik L, Fieremans E, Babb JS, Blennow K, Zetterberg H, Lu SE, Badia SG, Romero S, Rosenzweig I, Gosselin N, Jean-Louis G, Rapoport DM, de Leon MJ, Ayappa I, Osorio RS. **Obstructive sleep apnea severity affects amyloid burden in cognitively normal elderly: A longitudinal study.** *Am J Respir Crit Care Med* 2017 Nov. Available from, DOI: 10.1164/rccm.201704-0704OC

### Summary

This 2-year prospective study investigated cross-sectional and longitudinal associations between obstructive sleep apnea (OSA) and increased risk for Alzheimer's (AD) pathology [via amyloid beta (Ab)] in older cognitively normal adults. Subjects were community-dwelling healthy non-depressed volunteers between the ages of 55 and 90. Lumbar punctures (LPs) were performed to obtain participants' cerebrospinal fluid (CSF) soluble Ab levels as well as positron emission tomography (PET) scans to measure Ab deposits directly in the brain at baseline and follow-up. All participants completed a baseline home sleep study. OSA severity variables included the apnea/hypopnea index with 4% desaturation (AHI4%) and the AHI4% plus arousals (AHIall). Among the 208 participants at baseline, 97 were free of OSA (AHI < 5; healthy controls), 76 had mild OSA (AHI 5-15), and 35 had moderate to severe OSA (AHI > 15). No significant correlation between CSF Amyloid beta levels and OSA severity was identified on cross-sectional analysis. However, among the participants who remained in the longitudinal study (n = 104), baseline OSA severity was significantly associated with 2-year longitudinal decreases in CSF Ab concentrations and a trend toward an increase in cortical Ab deposits. AHIall was a better predictor of longitudinal increases in amyloid burden than AHI4%.

### Comments

1. OSA is a common comorbidity in cognitively normal community-dwelling older adults.
2. This study offers further evidence that OSA may be a risk factor for the development of Alzheimer's disease, suggesting a potential opportunity to slow AD pathology with treatment of OSA.
3. The results of this study suggest that the combination of sleep fragmentation and hypoxia may have a greater impact on AD risk than hypoxia alone; further testing of this hypothesis is needed.
4. The low number of participants with longitudinal follow-up was a limitation warranting a larger trial to further delineate the effect of OSA on the development of both mild cognitive impairment and AD.
5. Further research is needed to examine the correlation between decreases in CSF amyloid beta and increases in brain uptake.

## USABILITY OF CPAP IN OLDER ADULTS

Fung CH, Martin JL, Hays RD, Patterson ES, Aysola R, Col N, Mitchell MN, Truong C, Dzierzewski JM, Jouldjian S, Song Y, Rodriguez JC, Josephson K, Alessi C. **Patient-reported usability of positive airway pressure equipment is associated with adherence in older adults.** *Sleep* 2017; 40 (3)

### Summary

This study examined the relationship between the usability and adherence of positive airway pressure (PAP) devices among older adults with sleep-disordered breathing (SDB). Questionnaires were mailed to sleep clinic patients from a Department of Veterans Affairs (VA) sleep center and two university affiliated sleep clinics. Eligible participants were aged  $\geq 65$  years and were prescribed PAP therapy within the previous 36 months. Survey participants completed the 18-item Usability of Sleep Apnea Equipment-Positive Airway Pressure (USE-PAP) questionnaire which assessed usability of their PAP device [scores ranged from 0 (best) to 100 (worst)]. Adherence and interface type (nasal pillows, nasal mask, and full-face mask) data were only available from the VA site and abstracted from electronic health records. 564 patients completed surveys (33% response rate). The mean USE-PAP score was 20. Ability and ease to connect tubing received the most favorable usability rating while the inability to adjust device controls and mask received the lowest scores. Mean PAP use among VA respondents (n = 189) was  $5.2 \pm 2.0$  hours. A 10-point increase in USE-PAP score corresponded to a 24.6 minute reduction in use and explained an additional 12% of the variance in nightly PAP use after controlling for covariates.

**Comments**

1. This trial offers further evidence that older adults with SDB have unique barriers to PAP therapy, highlighting that factors involved with the usability of a PAP device have a role in adherence.
2. Factors associated with the lowest usability ratings involved the ability to adjust mask/headgear and device controls, elements involved with the troubleshooting process, indicating that education to promote improved troubleshooting capability is a

potential target for future interventions aimed at improving PAP adherence in older adults.

3. The strengths of this study included the availability of objective PAP adherence and the report of interface type data; data on adherence and interface type was restricted to the VA site limiting generalizability of the findings to women and non-veterans.
4. These results highlight the clinical significance of usability when prescribing and fitting devices for older adults.

# PALLIATIVE CARE



## HEALTH POLICY AND THE OLDER ADULT

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## PALLIATIVE CARE

Reinke L, Meier D. **Research priorities in subspecialty palliative care: Policy initiatives.** *Journal of Palliative Medicine*, 2017 20(8): 813-820.

## Summary

This article presents research needed to support policies associated with palliative care access and quality. The authors provided a summary of the current evidence, research gaps, propose a research agenda, and align the agenda with payment systems and policies. Recommendations were also made for integrating more palliative care and research for individuals with critical illnesses, pulmonary diseases, heart failure, chronic kidney disease and surgery. Palliative care research priorities addressed in the article were delivery models for subspecialty services, effective and cost-effective interventions, development and validation of patient and family-centered outcomes, and determination of caregiver needs. The authors challenged researchers to consider aligning research priorities with current or proposed payment models. There was also emphasis on the need to incorporate or broaden available palliative care into a variety of settings. Those settings include hospitals, hospice, home health, community-based programs, office practices, outpatient clinics, and nursing homes. This paper serves as a valuable guide for building improved models of care delivery through research, increased funding, payment models, and health policies.

## Comments

1. This paper highlights the importance of palliative care for individuals with critical illnesses and pulmonary diseases, patient populations that are also among American Thoracic Society's target populations.
2. The article makes the important connection of conducting the research needed to inform evidence based policy decisions.
3. Increasing nursing presence is needed in policy development and evaluation related to palliative care.

## PATIENT SUPPLEMENTAL OXYGEN SURVEY

Jacobs S, Lindell K, Collins E, Garvey C, Hernandez C, McLaughlin S, Schneidman A, Meek P. **Patient Perceptions of the Adequacy of Supplemental Oxygen Therapy: Results of the American Thoracic Society Nursing Assembly Oxygen Working Group Survey.** *Annals American Thoracic Society*, 2017 15(1): 24-32.

## Summary

There is limited evidence to describe the equipment services, reimbursement and portable systems problems of patients requiring supplemental oxygen. This paper highlights the leadership of the ATS Nursing Assembly's Oxygen Working Group in collaboration with a multi-disciplinary committee to develop and administer the Patient Supplemental Oxygen Survey. Patients (n=1926) responded to the survey with the most common diagnoses being COPD (39%) and interstitial lung disease (27%). The survey revealed the complexities encountered by respondents: 1) oxygen saturation was not checked when equipment was delivered to 65% of patients, 2) instructions in use of equipment were given by delivery persons (64%), clinicians (8%) and none provided (10%), and 3) feeling very or somewhat unprepared to operate equipment was reported by one-third of respondents. Although 80% of the respondents used a portable system outside of their home, systems only lasted 1 hour for 11%, 2 hours for 38%, up to 4 hours for 32% and 4-6 hours for 15% thus impeding a mobile lifestyle for the majority of respondents. Other concerns identified in the survey were equipment malfunctions, travel oxygen and delivery problems, and lack of high flow portable systems. Financial responsibility for co-pays and out of pocket for equipment was another major theme among respondents. A variety of complex issues were identified in this survey of patients requiring supplemental oxygen. The authors reinforced future actions for professional and patient organizations in addressing the concerns described by this large cohort of patients

## Comments

1. This is the first large cohort study to elicit patient-reported experiences of supplemental oxygen users.
2. The study is an important exemplar of the need to link patient/clinical issues to research and health policy.
3. This paper underscores the benefit of convening a multidisciplinary forum for development and administration of the survey as well as support for future research and policy initiatives. ATS representation included Nursing, Pulmonary Rehabilitation, Health Policy, Government Relations and the Public Advisory Roundtable. See the online supplement citation for full representation of the multidisciplinary group.

## MEDICARE DATABASES FOR EPIDEMIOLOGIC AND HEALTH SERVICES RESEARCH

Mues K, Liede A, Liu J, Wetmore J, Zaha R, Bradbury B, Collins A, Gilbertson D. **Use of the Medicare database in epidemiologic and health services research: A valuable source of real-world evidence on the older and disabled populations in the US.** *Clinical Epidemiology*, 2017 9: 267-277.

### Summary

This review article summarizes Medicare claims data available for epidemiologic and health services research. These data are particularly appropriate for researchers with interests in populations > 65 years old, individuals < 65 with disabilities, end stage renal disease, as well as Medicare Parts A, B, C, and D coverage. The authors present strengths of Medicare data including the large cohort databases, longitudinal Medicare enrollment, health care services across varied settings, coverage of medical supplies or durable equipment, and opportunities to conduct health care related studies. However, there are also limitations to using Medicare data and those considerations are reported. For example, misclassifications of diagnostic codes or reimbursement claims can limit the availability of data. This review also identifies factors for researchers' consideration when designing and implementing studies as well as interpreting results. Additionally, the article provides a historical perspective of relevant Centers for Medicare and Medicaid Services (CMS) policy changes and how they impacted Medicare data.

### Comments

1. This paper discusses the availability of Medicare databases to researchers including data relevant to critical care, pulmonary, and sleep specialties.
2. The article emphasizes that researchers using Medicare databases should be aware of CMS policy decisions that may influence the data.

## GERIATRICS POLICY PRIORITIES

Lundebjerg N, Hollmann P, Malone M on behalf of the AGS Board of Directors and Public Policy Committee. **American Geriatrics Society policy priorities for new administration and 115th congress.** *Journal of American Geriatrics Society* 2017 65(3): 466-469.

### Summary

This paper summarizes the American Geriatrics Society's (AGS) core policy priorities and their positions on federal programs and policies that impact older Americans. The following federal and state policies are prioritized in the article: 1) expanding health care services, Medicare, and other benefits to support the ability of older adults to live as independently as possible, 2) considering the unique

needs of older adults in quality initiatives and value-based purchasing, 3) enhancing primary and preventive services and care coordination offered to older populations, 4) utilizing training programs to increase the number of geriatric health care providers, and 5) conducting more research that addresses age related illnesses, cost-effective models of care, and inclusion of older adults in clinical trials. The authors provide in-depth discussions on the American Geriatrics Society's positions on health reform, Medicare, Medicaid, Medicare and Medicaid delivery system reform, veterans' health, and healthcare workforce. Included in those topic discussions are examples of key health care services, innovative care models, federal funding recommendations, and geriatric health professionals programs.

### Comments

1. Information relevant for clinicians, researchers, educators, and policy leaders is presented.
2. The article is pertinent for ATS subspecialties that address illnesses affecting elderly and frail adults.
3. The AGS identifies federal and state policies for consideration as nurses and other health care professionals advocate for improved health care and coverage for older adults.

## OTHER ARTICLES OF INTEREST

Allen K, Ouslander J. **Age-friendly health systems: Their time has come.** 2017 *Journal of American Geriatrics Society* 66: 19-21.

Jacobs S, Lindell K, Collins E, Garvey C, Hernandez C, McLaughlin S, Schneidman A, Meek P. **Patient Perceptions of the Adequacy of Supplemental Oxygen Therapy: Results of the American Thoracic Society Nursing Assembly Oxygen Working Group Survey.** *Annals American Thoracic Society Online Supplement*. Retrieved from [www.atsjournals.org/doi/suppl/10.1513/AnnalsATS.201703-209OC/suppl\\_file/jacobs\\_data\\_supplement.pdf](http://www.atsjournals.org/doi/suppl/10.1513/AnnalsATS.201703-209OC/suppl_file/jacobs_data_supplement.pdf)

Osborn R, Doty MM, Moulds D, Sarnak DO, Shas A. **Older Americans were sicker and faced more financial barriers to health care than counterparts in other countries.** 2017 *Health Affairs* 12: 2123-2132.

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