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Research

Development of Minimum Data Set-based Individualized Care Pathways for Chronic Obstructive Pulmonary Disease Treatment in Nursing Home Residents



Presenting Author: Charlene Niu, PhD, Sunovion Pharmaceuticals
Author(s): B. Blaylock, PhD, C. Niu, PhD, H.E. Davidson, PharmD, MPH, R. DePue, PharmD, G.R. Williams, PhD; and K. Steinberg, MD

Introduction/Objective: Assessment of chronic obstructive pulmonary disease (COPD) severity in nursing home (NH) residents is limited by data requirements and lack of specialty staff, equipment, or resident ability. The Minimum Data Set (MDS) is a clinical assessment of functional capabilities and health needs completed for all NH residents in Medicare and/or Medicaid-certified long-term care homes. The objective of this study was to develop a map from the MDS to the Global Initiative for Chronic Obstructive Lung Disease (GOLD) A-D staging of COPD severity to aid the selection of COPD treatment for NH residents.

Design/Methodology: This study used longitudinal data for NH residents at baseline and 6 months collected between December 4, 2017 and February 27, 2019. Inclusion criteria included aged ≥ 60 years, COPD diagnosis, and ≥ 6 months NH residence at enrollment. Exclusion criteria included hospice eligibility, severe cognitive impairment, a “Do Not Hospitalize” order, or no medication therapy for COPD 30 days prior to enrollment. Spirometry was conducted at enrollment. Relevant data were extracted from medical records. GOLD A-D stage assignment used the COPD Assessment Test (CAT) confirmed by a care provider and 12- or 6-month COPD exacerbation history. Multivariate multinomial logit models mapped the MDS to GOLD A-D stages with stepwise selection of variables. Internal validation used leave-one-out cross-validation (CV). Sensitivity analyses were conducted for GOLD A-D stage assignment.

Results: NH residents (N=175) were 64% female and on average 78 years old. Among residents, GOLD B was most common (A=13.1%; B=44.0%; C=5.7%; D=37.1%). After stepwise selection, the multivariate multinomial logit model included demographics (age, sex, body mass index), any long-acting bronchodilator (LABD) use, and MDS variables including dyspnea, mood score, activity of daily living (ADL) score, help bathing, mobility aides, balance while toileting, and selected comorbidities (anemia, coronary artery disease, heart failure, hypertension, diabetes, anxiety, depression). Any LABD use, any dyspnea, not using a wheelchair, and depression were significant predictors of GOLD A-D stage in at least one category. The predicted distribution (MDS-GOLD A=6.9%; B=52.6%; C=4.6%; D=36.0%) was well-correlated with the GOLD A-D stage (Cramer's V=0.44) and had good model fit (correctly predicted=61%). Internal CV (N=173) showed adequate fit (correctly predicted=41%). Based on resident COPD treatment history at baseline, NH residents may underuse stage-recommended LABD treatment for COPD (no LABD: B=53%; C=80%; D=40%).

Conclusion/Discussion: GOLD staging is challenging in NH residents due to lack of systematic assessment of symptoms and incomplete history of exacerbations. The MDS, completed for virtually all US NH residents, can

be used to estimate COPD severity. Predicted MDS-based COPD severity can provide a map to evidence-based treatment guidelines and could help address the underuse of appropriate medication for the management of COPD in NH residents.

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Effect of COVID-19 Pandemic on Depression and Medications Use on Nursing Home Residents



Presenting Author: Lubaba Dahab, MBBS, MSHS, Michigan State University
Author(s): L. Dahab, MD, K. Abdelgadir, MBBS, T. Obeid, MBBS, S. Dey, MD, M. Ahmed, W. Al-Safi, A. Mohamed, R. Lungba, A. Abu Bakr; and N. Abdelrahman, MD

Introduction/Objective: Background: The emergence of the new coronavirus (SARS-CoV-2) in 2019 caused a worldwide COVID-19 pandemic, raising many questions for the scientific community and researchers. The infection ranges from asymptomatic to fatal clinical course mainly affecting the lungs, in the form of an acute respiratory syndrome. However, the COVID-19 pandemic impacted human health in multiple areas. A recent study has shown that the prevalence of depression symptoms in the adult population in the US tripled after COVID-19 compared to before the pandemic. Lower social resources are one of the reasons the authors explained. More studies from different regions have revealed that the pandemic caused moderate to severe depression (16.5%) in people with chronic medical illnesses in Spain and 32.4% of moderate to severe depression in Italy. The geriatric population is more prone to depression as they usually have chronic medical illnesses in addition to limited socialization and social resources that have been severely impacted by the pandemic.

Objective: We plan to study the effect of the COVID-19 pandemic on depression and the use of medications compared to the period before COVID-19. The data set will be obtained from 3 nursing homes using CASPER report variables.

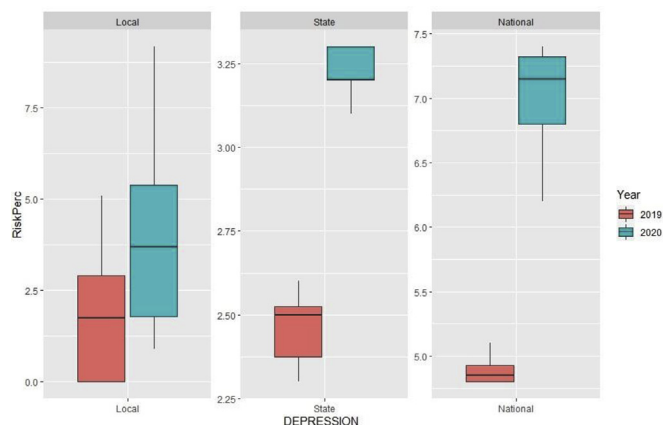
Design/Methodology: A retrospective study was conducted on CMS data collected from CASPER reports. Data collection: We obtained data from 3 different Nursing Home Facilities in Lansing Area, Michigan. CMS data for each facility, from March to October 2019 compared to data from March to October 2020.

Variables compared: Depression, Anxiety, and Use of antipsychotics. We compared variable percentages at the local/facilities, state, and national levels.

Results: Data analysis showed a significant increase in nursing home residents diagnosed with depression in 2020. This increase is more prominent at the state and national levels. The risk percentage of depression increased from 2.6 % in 2019 to 3.3% in 2020 at Michigan State, while nationally, it jumped from 5.1 % in 2019 to 7.4% in 2020. The data

didn't reveal a significant change in the use of medications (antipsychotics) or anxiety.

Depression Inference (t-test Results)						
Location	T-stat	D.f	MeanDiff	LCL	UCL	p-value
Local	2.8339	15	2.0925	0.5187	3.6663	0.0126
State	14.3211	7	0.7625	0.6366	0.8884	<0.0001
National	16.2299	7	2.1125	1.8047	2.4203	<0.0001



Conclusion/Discussion: Although the sample size we studied is small—3 nursing homes—our findings suggested a possible impact of the COVID-19 pandemic on the increased percentage of depression among the geriatric population in Michigan State and the US. We think the limited socialization, activities, and the change in nursing home visitation policies have an undeniable role in decreasing the threshold for depression in this vulnerable age group. These results align with other studies from different parts of the world that provided evidence of the COVID-19 pandemic causing depression in adults. More studies are needed, with more inclusive samples from different states and a more in-depth dive into the use of antipsychotic medications and anxiety, which usually coincide.

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Goals of Care During the COVID-19 Pandemic: Implementing DNI, DNR, and DNH Orders in a Skilled Nursing Facility



Presenting Author: Benjamin Canter, The New Jewish Home Research Institute on Aging

Author(s): O. Burack, MA, J. Reinhardt, PhD, W. Mak, PhD, H. Weerahandi, MD, MPH, B. Canter; and K. Boockvar, MD

Introduction/Objective: Knowledge of patient treatment preferences concerning resuscitation, intubation, and hospitalization are critical as hospitals and skilled nursing facilities (SNFs) admit older COVID-19 patients facing uncertain disease trajectories that could turn fatal within days. The present study examined the number of Do Not Intubate (DNI), Do Not Resuscitate (DNR), and Do Not Hospitalize (DNH) orders before and after patients were diagnosed with COVID-19 in a New York City SNF, as well as demographic variables related to order implementation.

Design/Methodology: Subjects were 150 SNF patients who tested positive for COVID-19 between March and May 2020. All data, including demographic information, medical orders, and goals of care (GOC) discussions were obtained from the SNF's electronic medical records. Bivariate correlations and Chi-square analyses were conducted.

Results: Patient ages ranged from 42 to 103 years (Mean=79.82, SD=11.78). Ninety-six (64%) patients were female and 48 (32%) were

White, 46 (31%) Black, 22 (15%) Hispanic, 2 (1%) Asian, and 32 (21%) unknown. Most (118, 79%) reported English as their primary language. SNF length of stay (LOS) ranged from 6 days to 11 years (Mean=842.67 days, SD=931.18). One hundred and eleven (74%) patients were long-term care (LTC) and 39 (26%) were post-acute (LOS <100 days). Fifty three (35%) patients were enrolled in Optum, a service providing added specialized care by nurse practitioners (NPs). Optum NPs initiate GOC discussions routinely and when life-threatening changes in condition occur.

Pre-COVID-19, 79 (53%) patients had DNR orders, 76 (51%) DNI, and 24 (16%) DNH. Overall, 69 (46%) patients did not have any DNI, DNR, or DNH orders. After COVID-19 onset, 99 (66%) of the 150 patients/families had GOC and treatment option discussions with their clinicians. Following these conversations, 96 additional orders (22 DNIs, 22 DNRs, and 52 DNHs) were placed for 57 (58%) patients. Relatedly, the number of patients lacking any medical orders decreased to 47 (31%).

Older age ($r = .227, p < .01$), LTC ($X^2=7.1, p < .05$), and Optum enrollment ($X^2=15.07, p < .01$) were associated with additional medical orders after a COVID-19 diagnosis. No relationship with changes in medical orders were found for gender, race, and primary language.

Conclusion/Discussion: After COVID-19 diagnoses, GOC conversations resulted in a substantial increase in DNR, DNI, and DNH orders. Unsurprisingly, older LTC residents were more likely to implement new DNR, DNI, and DNH orders. As Optum NPs routinely discuss GOC with patients/families, decision-making during critical times may be facilitated.

Over half of patients/families chose to implement DNHs, preferring to continue their care in the SNF even if illness worsened. While this likely lessened the burden on hospitals overwhelmed with community COVID-19 cases, GOC conversations also ensured that patient wishes were known and respected. These findings emphasize the critical role SNFs play in establishing medical orders for residents.

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Hospital to Nursing Home Transitions of Care for Older Adults With Opioid Use Disorders: A Needs Assessment



Presenting Author: Meredith Yang, BA, University of Chicago Pritzker School of Medicine

Author(s): M. Yang, BA, K. Beiting, MD; and S. Levine, MD

Introduction/Objective: Opioid related inpatient stays increased 54.4% and the number of opioid-related ED visits doubled among patients aged 65 and older from 2010 to 2015. 29-49% of residents in skilled nursing facilities (SNFs) have a lifetime diagnosis of substance use disorder. As care transitions are a vulnerable time with high risk for error, assessment of care transitions for patients with opioid use disorder (OUD) may improve patient safety, decrease hospital readmission rates, and ensure equitable care for patients with OUD. Despite this, few studies have evaluated the transition of older adults with opioid use disorders from hospital to SNFs. This study was designed to identify barriers to successful transitions of care to SNFs for patients with OUD.

Design/Methodology: A needs assessment was conducted to identify barriers to effective care transitions for patients with OUD from a large academic medical center in Chicago to partnered skilled nursing facilities (SNFs). On the hospital side, informal interviews were conducted with 4 inpatient social workers, 2 physicians, and 2 quality and safety personnel. In addition, 24 semi-structured interviews were conducted with nursing home staff including directors of nursing, administrators, nurses, and physicians. All nursing home interviews were transcribed and coded using ATLAS.ti 8 (ATLAS.ti Scientific Software Development GmbH, Berlin) using a constant comparative method. Quality analysis tools, including a fishbone diagram and a process map, were utilized to identify barriers in transitions of care from hospital to SNF. The hospital assessment portion of this project was determined to be quality improvement and therefore exempt from IRB review; project design for the formal interviews with SNFs was approved by the associated IRB.

Results: These interviews show that hospitals routinely struggle to place patients with OUD into nursing homes. Many local SNF protocols do not