

hospitalization rates were more significant in rural agencies than urban agencies (urban: $\beta = 0.10$, $p = 0.000$). Our findings indicate urban (vs. rural) disparities in HHC quality and the trends of quality improvement.

HELPING FILL THAT GAP: AGING IN PLACE AFTER DISASTER THROUGH THE LENS OF HOME-BASED CARE

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During a disaster, home-based care is intended to continue to function using existing care delivery models. Home-based care providers (HBCP) are often the closest contact with their clients—even during a disaster, seeing them in non-traditional care settings including shelters and hotels. This closeness and commitment to clients, gives HBCP unique insights into strategies to promote aging in place. The purpose of this study was to identify the individual and community-level support needs of older adults after a disaster through the lens of home-based care. Five focus groups were conducted with HBCP ($n = 27$) in two disaster-affected settings: 2017's Hurricane Irma in Florida and Hurricane Harvey in Texas. Participants were identified by contacting home health agencies listed in an open-source database of agencies receiving Centers for Medicare and Medicaid Services funding. Data was manually coded using an inductive approach and themes were iteratively identified. Forty-nine codes were identified in the preliminary analysis, which were distilled into ten themes describing factors that influence care provision during and after disasters: patient autonomy/dependence, disaster-induced trauma, reluctance to evacuate, chronic disease exacerbation, unpreparedness, systemic inequality, provider preparedness actions, strong sense of community, mistrust of governmental authority, and the uniqueness of the patient and home-based care provider relationship. The perspective offered by HBCP illustrates the complexities of community-level preparedness and informal community support for chronically ill older adults surrounding disasters. Diverse groups involved in aging and disaster response can learn from strategies employed by HBCP during disasters to improve aging in place.

RELATIONSHIPS OF SEVERE PAIN AND COGNITIVE IMPAIRMENT WITH ACUTE CARE USE IN HOME HEALTH PATIENTS

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Pain assessment is challenging in patients with cognitive impairment that can lead to inappropriate pain management and unfavorable health outcomes. Using a 10% random sample of Medicare home health (HH) patients ≥ 65 years old from the 2017 Outcome and Assessment Information Set (OASIS) national dataset ($N = 646,109$), we tested the

relationships of cognitive impairment and constant, severe pain that interfered with daily living activities with acute care utilization (i.e., hospitalization and emergency department [ED] admission without hospitalization). Patients who had constant, severe, interfering pain (32.57%, $N = 210,444$) were younger, more likely to be female, white, Medicare-Medicaid dually eligible, living alone, and having functional limitations and depressive symptoms, but less likely to have moderate-to-severe cognitive impairment (25.0% versus 31.5%, $p < 0.001$) than others. In multivariable logistic regression models adjusting for the above covariates, when compared with patients with neither cognitive impairment nor severe, constant, interfering pain, those with both conditions were 17% more likely to have hospitalization (Odds Ratio [OR] = 1.17, $p < 0.001$) and 13% more likely to have an ED admission without hospitalization (OR = 1.13, $p < 0.001$). This was the first study that examined co-occurring pain and cognitive impairment in HH recipients using national OASIS data. Findings suggest that: 1) older HH patients with moderate-to-severe cognitive impairment have lower rates of reported pain that suggests under-recognition; and 2) having severe, interfering pain among cognitively impaired patients significantly increased their risk of acute care utilization. Therefore, systematic protocols and guidelines should be in place to facilitate pain assessment for improved outcomes among HH patients with cognitive impairment.

SKILLED HOME HEALTH CARE AGENCY PERSPECTIVES ON COMMUNICATION WITH PHYSICIANS: A NATIONAL SURVEY

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BACKGROUND: Communication is important in the care of older adults receiving skilled home health care (SHHC). In a prior national survey, physicians viewed communication and care coordination with SHHC agencies as dismal. The views of SHHC personnel (Registered Nurses, Licensed Practical Nurses, Physical Therapists, Occupational Therapists, and Speech-Language Pathologists) on this issue have not been well studied. **OBJECTIVE:** To determine the effectiveness of communication between SHHC personnel and physicians who order SHHC services. **METHODS:** A nationally representative mailed survey of personnel from SHHC agencies identified through the 2016 Home Health Compare data set from the Centers of Medicare and Medicaid Services. **RESULTS:** 263 of 2000 surveys returned (13.2% response rate). Responding agencies were mainly proprietary (75.3%) and urban-based (83.7%). Most agencies were in the South (38.8%); 28.3% Midwest, 22.9% West, 12.1% Northeast. Only 62.2% of SHHC personnel completing start of care visits ($n = 202$) reported being able to contact a physician when needed. The most common strategies used to contact physicians are phone (76.0%) and fax (11.2%). The greatest barriers to communication are having to communicate

through a third party (64.9%) and a perception by SHHC personnel that “Physicians [are] not interested in communicating with SHHC Personnel” (45.1%). Failed communication resulted in delayed orders (70.8%) and sending a patient to the emergency room (37.1%). IMPLICATIONS: SHHC agency personnel experience significant barriers in communicating with physicians. Modes of communication remain rudimentary, and there are serious consequences of failed communication.

SESSION 2912 (PAPER)

BIOLOGY OF AGING I

A VIRTUAL HEALTH LIBRARY FOR DEMENTIA PATIENTS AND CAREGIVERS TO IMPROVE QUALITY OF INFORMATION AND COMMUNICATION

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Access to accurate health information is critical for patient decision making and health communication. Unfortunately, there is limited quality health information for dementia patients and their caregivers. A Virtual Health Library (VHL) provided access to credible health information through the electronic medical record (EMR) to reach the dementia patients and their caregivers. A VHL was created and brought together clinicians, caregivers, technology support personnel, public health professionals, and the health sciences library. The team identified areas of interest and met monthly to create VHL materials. Materials included voice-over slides and 1-page educational content that was uploaded to the EMR for patient and caregiver access. A baseline and final questionnaire assessed demographics, empowerment, and shared decision making for both the patient and the caregivers and a pre/post was created for each module to assess knowledge and stratification. Initially, 1331 patients with dementia were recruited for the project from a university geriatrics department. The population had a 28.3% enrollment in the EMR and only 3.8% used the EMR in the past six months. Of this pool, during the initial launch 32 patients and or caregivers completed the baseline within the first week. 98% of respondents were caregivers with an average age of 58.7. With the youngest caregiver 42 and the oldest 88. Of the caregiver's relationships to the patients is 43.3% their child, 40% their spouse, 10% other family, and 6.7% friends. During the project, participants improved access to health information and became empowered to engage with their healthcare provider.

APOLIPOPROTEIN E GENOTYPE AND THE RELATIONSHIP BETWEEN CHITINASE 3-LIKE PROTEIN 1 AND POSTOPERATIVE DELIRIUM

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Apolipoprotein E (APOE) $\epsilon 4$ does not confer increased risk of delirium in older surgical patients; however, $\epsilon 4$ status modifies the relationship of C-reactive protein (CRP) with delirium: increased risk for delirium in $\epsilon 4$ carriers with high CRP. We examine whether APOE genotype modifies the established association between inflammatory marker chitinase-3-like protein-1 (CHI3LI/YKL-40) and delirium in patients without dementia age ≥ 70 undergoing major non-cardiac surgery. We performed APOE genotyping using PCR, considering APOE $\epsilon 4$ vs. non- $\epsilon 4$ carriers. Plasma YKL-40, measured on postoperative day 2 by ELISA, was examined using sample-based quartiles (Q1-Q4). Delirium status was determined with daily interviews rating the Confusion Assessment Method, augmented by a validated chart review. We used generalized linear models adjusted for age, sex, surgery type, and stratified by APOE $\epsilon 4$ status. Among the 557 patients, 19% were APOE $\epsilon 4$ carriers, and 24% developed postoperative delirium. The YKL-40-delirium relationship differed by APOE status. Among APOE non- $\epsilon 4$ carriers, we found a significant relationship between YKL-40 and delirium (relative risk [RR](95% confidence interval [CI] for YKL-40 Q4 vs. Q1: 2.6(1.4-4.9) and Q3 vs. Q1: 2.3(1.2-4.5); p-trend $<.01$). Among APOE $\epsilon 4$ carriers, YKL-40 was not significantly associated with delirium (RR(95% CI) for YKL-40 Q4 vs. Q1: 2.0(0.6-6.6) and Q3 vs. Q1: 1.1(0.3-3.5); p-trend=0.37). APOE non- $\epsilon 4$ carriers may have increased risk of delirium conferred by post-surgical inflammation specific to the type 2 immune response (high YKL-40). These results differ from prior results with CRP, and raise the possibility that APOE genotype may interact at different points in the inflammatory pathway leading to delirium.

CIRCULATING PROCOLLAGEN TYPE III N-TERMINAL PEPTIDE AND PHYSICAL FUNCTION IN THE LONG LIFE FAMILY STUDY

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Circulating levels of procollagen type III N-terminal peptide (P3NP) may reflect increased fibrosis of skeletal muscle and other tissues with aging. In the current study, we tested if P3NP levels were associated with baseline and 7-year change in physical function among adults aged 39-104. Participants (n=400) were from the Long Life Family Study, a study of exceptional familial longevity. Plasma P3NP concentration was measured using a sandwich enzyme-linked immunosorbent assay (inter-assay