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Delirium is a common, morbid, and costly geriatric syndrome, yet its pathophysiology remains poorly understood. In a nested matched case-control study within the Successful Aging after Elective Surgery (SAGES) study, a cohort of adults age ≥70 without dementia undergoing major non-cardiac surgery, we previously identified inflammatory proteins to be associated with delirium. Using the entire SAGES cohort, the current study examines the independent associations of these inflammatory proteins with postoperative delirium. Plasma was collected preoperatively (PREOP) and on postoperative day 2 (POD2). Neuroinflammatory marker chitinase-3-like protein [CHI3l1 or YKL-40]; PREOP and POD2) and systemic inflammatory markers interleukin [IL]-6 (POD2 only) and C-reactive protein (CRP; PREOP and POD2) were measured using enzyme-linked immunosorbent assays. Generalized linear models were used to determine the independent (multivariable) associations between the inflammatory markers, measured in sample-based quartiles (Q). All models adjusted for age, sex, baseline cognition, surgery type, Charlson comorbidity index, and medical complications. Among the 555 patients (mean age 77 years, standard deviation, SD 5.2), 58% were female and 86% underwent orthopedic surgeries. Postoperative delirium occurred in 24%. High YKL-40 PREOP and IL-6 at POD2 (Q4 vs. Q1) were significantly associated with an increased risk of delirium: relative risk (RR) [95% confidence interval (CI)] 2.2[1.1-4.4] and 2.7[1.3-5.7], respectively. CRP (PREOP and POD2) was not significantly associated with delirium (p=0.37 and p=0.73, respectively). This work underscores the importance of inflammation (YKL-40 and IL-6) in the pathophysiology of postoperative delirium.

FACTORS ASSOCIATED WITH MORTALITY AMONG LONG-TERM CARE RESIDENTS TRANSITIONING TO AND FROM EMERGENCY DEPARTMENTS

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Studies examining risk of death during acute care transitions have highlighted potential predictors of death during transition. However, they have not closely examined the relationships and directional effects of organizational context, care processes, resident demographics and health conditions on death during transition. By employing structural equation modeling, we aimed to 1) identify predictive factors for residents who died during transitions from long term care (LTC) to emergency departments (EDs) and back; 2) examine relationships between identified organizational, process and resident factors with resident death during these transitions; and 3) identify areas for further investigation and improvement in practice. We tracked every resident transfer from 38 participating LTC facilities to two included EDs in two Western Canadian provinces from July 2011 to July 2012. Overall, 524 residents were involved in 637 transfers of whom 63 residents (12%) died during the transition. Sustained dyspnea (in both LTC and the ED), sustained change in level of consciousness (LOC) and severity measured by triage score were direct and significant predictors of resident death during transition. The model fit the data, (x2 = 83.77, df = 64, p = 0.049) and explained 15% variance in resident death. Dyspnea and change in LOC in both LTC and ED needs to be recognized regardless of primary reason for transfer. More research is needed to determine the specific influences of LTC ownership models, family involvement in decision-making, LTC staff decision-making on resident death during transition, and interventions to prevent pre-death transfers.

LONG-TERM CARE FACILITY VARIATION IN THE INCIDENCE OF PNEUMONIA AND INFLUENZA HOSPITALIZATIONS

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Pneumonia and influenza (P&I) increase morbidity and mortality among older adults, especially those residing in long-term care facilities (LTCFs). Facility-level characteristics may affect P&I risk beyond resident-level determinants. However, the relationship between facility characteristics and P&I is poorly understood. We therefore identified potentially modifiable facility-level characteristics that might influence the incidence of P&I across LTCFs. We conducted a retrospective cohort study using 100% of 2013-2015 Medicare claims linked to Minimum Data Set 3.0 and LTCF-level data. Short-stay (<100 days) and long-stay (≥100 days) LTCF residents aged ≥65 were followed for the first occurrence of hospitalization, LTCF discharge, Medicare disenrollment, or death. We calculated LTCF risk-standardized incidence rates (RSIRs) per 100 person-years for P&I hospitalizations by adjusting for over 30 resident-level demographic and clinical covariates using hierarchical logistic regression. The final study cohorts included 1,767,241 short-stay (13,683 LTCFs) and 922,863 long-stay residents (14,495 LTCFs). LTCFs with lower RSIRs had more Physician Extenders (Nurse Practitioners or Physician's Assistants) among short-stay (44.9% vs. 41.6%, p<0.001) and long-stay residents (47.4% vs. 37.9%, p<0.001), higher Registered Nurse hours/resident/day among short-stay and long-stay residents (Mean (SD): 0.5 (0.7) vs. 0.4 (0.4), p<0.001), and fewer residents prescribed antipsychotics among short-stay (21.4% (11.6) vs. 23.6% (13.2), p<0.001) and long-stay residents (22.2% (14.3) vs. 25.5% (15.0), p<0.001). LTCF characteristics may play an important role in preventing P&I hospitalizations. Hiring more Registered Nurses and Physician Extenders, increasing staffing hours, and reducing antipsychotic use

may be modifiable means of reducing P&I in LTCFs. Funding provided by Sanofi Pasteur.

READMISSION FOR HEALTHCARE-ACQUIRED INFECTIONS: DOES PATIENT DISPOSITION MATTER?

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Both common and preventable, healthcare-acquired infections (HAI) are nevertheless associated with high risk for hospital readmission. However, whether these infection-related readmissions are more common among older adults discharged from the hospital to a nursing facility as opposed to home is unknown. We used 2013-14 HCUP data and multivariable logistic regression models to retrospectively examine the relationship of patient disposition (home, nursing facility, home health care) with an unplanned readmission for the same HAI observed at the index admission, among older Medicare beneficiaries, controlling for patient sociodemographics, comorbidity score, and length of stay during index hospitalization. Of 8.4 million index admissions, 323,332 (3.9%) involved an index HAI, of which 15,870 (4.9%) resulted in a linked HAI readmission. HAI readmissions were more common for Clostridium difficile infections (4.0%) and urinary tract infections (UTI, 2.3%) than for ventilator-acquired pneumonia (1.4%) or surgical site infections (1.1%) (p<0.001). Being discharged home or to home health care, compared to a post-acute care setting, was associated with increased odds (OR: 1.63 and 1.62, p<0.001) of HAI readmission, particularly for patients with higher comorbidity scores. For home discharges, HAI readmission risk was doubled for patients with the most compared to fewest comorbidities while nursing facility discharges were equally protective across comorbidity levels. We conclude that Clostridium difficile and UTIs result in higher risk for readmission than other HAIs. Patients discharged to nursing facilities are protected from readmission. Further research into identifying modifiable mechanisms for HAI readmission, in order to improve post-hospital care of infection at home, is needed.

RESILIENCY PHENOTYPES FOLLOWING HIP FRACTURE IN OLDER ADULTS

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Defining common patterns of recovery after an acute health stressor (resiliency phenotypes) has clinical and research implications. We examined groups of patients with similar recovery patterns across 10 outcomes following hip fracture to determine the most important predictors of resiliency group membership. This study is a secondary analysis of three prospective cohort studies. Participants, community-dwelling adults aged >65 with recent surgical repair of a hip fracture (n=541), were recruited from eight hospitals near Baltimore and followed for up to one year. Self-reported function and activity measures were collected using validated scales at baseline, 2, 6, and 12 months. Physical performance tests were administered at all follow-up visits. Stressor characteristics, co-morbidities, psychosocial and environmental factors were collected at baseline, and latent class profile analysis was used to identify resiliency phenotypes and logistic regression models to identify associated factors. Three resiliency phenotypes had similar patterns across the 10 outcome measures and were defined as "high resilience" (n=163, 30.1%), "medium resilience" (n=242, 44.7%), and "low resilience" (n=136, 25.2%). Recovery trajectories for outcome measures were plotted for each resiliency group. Self-reported pre-fracture function was by far the strongest predictor of resilience group membership (AUC 0.84). Demographic factors, co-morbidities, stressor characteristics, environmental factors, and psychosocial characteristics were less predictive, but several factors remained significant in a fully adjusted model (AUC 0.88). These three resiliency phenotypes have immediate utility for clinical decision-making. They can be measured in future studies with a more parsimonious set of variables, and may prove useful for understanding mediators of physical resilience.

SESSION 4135 (PAPER)

ISSUES IN HOME CARE AND CAREGIVING

ARE MEDICAL FOSTER HOMES SERVING VETERANS WHO HAVE SIMILAR FUNCTIONAL IMPAIRMENT AS TYPICAL NURSING HOME RESIDENTS?

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The Veterans Health Administration's (VHA's) Medical Foster Home (MFH) program was developed as a community-based alternative to institutional care. This study compares the clinical and functional characteristics of Veterans in the VHA MFH program to residents in nursing homes to understand whether MFHs substitute for nursing home care or serve a population with different care needs. All data were derived from Minimum Data Set (MDS) 3.0 assessments. Nurses collected MDS assessments from Veterans (n=92) in 4 MFHs between April 2014-December 2015. Data for nursing home residents were from a national nursing home dataset of residents with an annual MDS assessment in 2014 (n=818,287). We found that MFH Veterans were more likely to be male, have higher functional status, and perform more activities of daily living (ADLs) independently relative to nursing home residents (p<0.01 for all comparisons). Yet, a similar proportion of MFH Veterans and nursing home residents required total assistance in 9 of the 11 measured ADLs. Cognitive impairment, neurological comorbidity,