The American Medical Directors Association, referred to as AMDA—Dedicated to Long-Term Care Medicine, changed its name in 2014 to AMDA—the Society for Post-Acute and Long-Term Care Medicine. With the growing recognition that post-acute care medicine requires a dedicated clinical skill set and research effort into healthcare outcomes, it may be appropriate for JAMDA to reflect these differences as well.

About 20% of hospitalized Medicare Beneficiaries were discharged to subacute units and skilled nursing facilities (referred to collectively as SNFs) for post-acute care (PAC) in 2011 because of either complicated nursing needs or functional decline during hospitalization. This percentage may have been driven by implementation of the hospital inpatient prospective payment system, reducing the length of hospital stay and exponentially increasing the use of post-acute care facilities. Medicare SNF costs in 2000 were $12 billion, and by 2011 had risen to $31.3 billion. Despite the burgeoning number of older adults receiving PAC in SNFs, these settings have not received the attention to their healthcare outcomes that hospitals have received in the past decade or more.

Patients discharged from the hospital to SNFs have a higher mortality rate than those discharged to home. For example, when discharged to SNFs with a diagnosis of heart failure, patients had a 53.5% 1-year mortality rate compared with 29.1% for patients discharged to home (P < .0001). Although a portion of the adverse outcome is driven by the advanced average age of patients and the burden of comorbidity, there is likely substantial opportunity to improve facility care. In 2014, the Office of Inspector General (OIG) reported that 33% of Medicare beneficiaries in SNFs experienced adverse events, and physician reviewers determined that 59% of these events were clearly or likely preventable. These findings are comparable to (and perhaps slightly worse than) hospital adverse event rates. In 2010, the OIG found that 27% of hospitalized Medicare beneficiaries experienced adverse and temporary harm events, with nearly one-half of the events being preventable. The OIG reported that about one-third of identified events in SNFs were medication related, often causing delirium. Infections including catheter-associated urinary tract infection, *Clostridium difficile*, aspiration pneumonia, and surgical wound infections constituted about a quarter of events. The remainder of identified issues involved falls, electrolyte disturbances resulting in acute kidney injury, pulmonary embolus, and other care incidents.

Addressing the adverse events and poor outcomes of SNF post-acute care requires attention to many factors, including regulatory issues, quality measures, practitioner staffing models, and best clinical practices.

**Regulatory**

PAC in a SNF is currently regulated as nursing home care. This care model requires, for example, the facility to conduct a comprehensive evaluation of the “resident,” including assessment for delirium, within 14 days. The attending physician must perform an initial comprehensive examination within 30 days of admission, then perform an established patient visit at least every 30 days afterwards for the first 90 days. States may allow some of these visits to be delegated to a nonphysician provider. A pharmacist must review the patient’s drugs within 30 days then at least monthly. These evaluations can certainly be performed earlier and more often if medically indicated. The optimal intervals for assessment have not been determined. However, patients often leave the hospital with delirium, polypharmacy, intravenous medications, and metabolic derangements, suggesting that closer follow-up is needed for the PAC patient recently discharged from the hospital than for the resident recently admitted from the community for long-term care. The last major change in legislation and regulation of nursing home care occurred in 1987 (the Nursing Home Reform Act). Legislation and regulation within the 2010 Affordable Care Act have glossed over PAC despite its major role in outcomes. The time for new nursing home legislative reform is overdue.

**Quality Measures**

The quality measures utilized in the nursing home, such as urinary incontinence and pressure ulcers, are certainly valid in PAC. Currently, there are some differences in quality measures between short-stay and long-stay patients. However, there are no dedicated PAC quality measures for aspects of patient care such as average length of stay (excluding readmissions), hospital readmission rates, rate of discharge to the community, rate of transition to long-term care, etc. Standardized functional outcome measures throughout the acute and post-acute care spectrum could drive additional quality measures to
compare function at admission and discharge. Frequency of goals of care discussion and recognition of those whose care may be better served as palliative rather than skilled or curative could be measured as well. A Center for Medicaid and Medicare Services 5-star rating dedicated to PAC (rather than combining short- and long-stay patients together in a facility rating) could be a useful summary rating to both payers and patients.

It would be an added value if quality assessment could account for the medical acuity within the facility. For example, a facility with a hemodialysis unit whose newly admitted patients have highly variable weight, blood pressures, and metabolic abnormalities during the first 1–2 weeks may require more (and expensive) medications, and much more nursing and practitioner (physician plus nonphysician provider) attention to attain a good outcome compared with a facility whose typical admissions are postsurgical orthopedic patients. Other patients with higher costs and higher nursing and physician needs are post-transplant patients, patients with infections requiring expensive intravenous or oral medications because of resistance patterns, and patients with cancer on oral antineoplastic medications. The current measure of acuity is the resource utilization groups, which drives reimbursement via therapy minutes. Lack of a practical measure of acuity limits the ability of facilities to be reimbursed at a higher rate for justified nursing and medical expenses, as well as limits the ability to compare facilities.

Practitioner Staffing Models

The optimal physician staffing model for PAC is not known. The limited research to date on staffing models has looked at nursing home care, in which post-acute care data and long-term care data were combined. The traditional nursing home practice model is the community physician with both an office and hospital-based practice. These physicians, compared with those who do not care for nursing home patients, are more likely to have a facility practice (60% vs 39.5%), see more patients each week (105 vs 78), and work more hours each week (57 vs 49). Another study found that community physicians cared for 70% of residents, and 60% of facilities had no daily physician presence. There is a concern that this model is not designed to provide care for patients recently discharged from the hospital with substantial nursing and medical needs.

An alternative model is the closed staff model. In this model, a very few number of physicians care for all the patients in the facility, resulting in greater physician visibility. These physicians may or may not receive a salary from the facility. Another model is the physician-nurse practitioner (or physician assistant) model, where the nonphysician provider has a consistent and visible presence in the facility. Selected outcomes (eg, response to emergencies, hospitalization rates, satisfaction) may be superior in midlevel provider and closed models compared with the traditional nursing home physician model. Physicians who specialize in nursing home care rather than seeing patients in multiple settings may be more visible at the nursing home, have lower hospitalization rates, and reduced use of medications. However, a comparative effectiveness trial of a designated PAC physician (assigned to most residents in the nursing home and with set hours in the facility each week) compared with a historical traditional nursing home physician practice model had disappointing results after 6 months. Laboratory test costs (borne by the PAC facility in a Medicare Part A covered stay) were 54% higher in the PAC physician model. Important outcomes such as falls, fallers, unplanned discharges, medication errors and pharmacy costs were not statistically different in the designated PAC physician model.

It is possible that a model, which combines hospital discharge planning with a designated post-acute care, salaried physician may be more effective than a designated PAC physician model alone. The Cleveland Clinic demonstrated a reduction in the 30-day hospital readmission rate with such a model. A different model developed by the University of Michigan employed its physicians and nurse practitioners in designated community PAC facilities. Each facility had a University of Michigan medical director who guided the facility regarding specialized testing and medications needed for patients with high medical needs, such as post-transplant patients. They demonstrated a reduction in length of stay without increase in readmission rate.

Another challenge to care is Health Information Exchange. The Affordable Care Act incentivized hospitals and physicians to develop electronic health records (EHRs), but post-acute and long-term care facilities were inadvertently omitted. Nevertheless, EHR systems have proliferated in all settings, including hospitals, physician offices, and post-acute care facilities. Unfortunately, the EHR is usually different in each setting, impairing Health Information Exchange (HIE) and making it challenging for practitioners to attain familiarity with the PAC EHR. In addition, nursing facility EHRs are designed to maximize reimbursement by optimizing resource utilization group scores, rather than maximize use of best practices in important conditions such as diabetes and heart failure. There is also a lack of electronic, real-time HIE between hospitals, emergency department, post-acute and long-term care facilities, pharmacies, dialysis centers, hospice, and physician offices. Medication lists, functional status, advance directives, test results, and other important data are updated by hand when the patient visits each site of care, resulting in delayed and often erroneous information.

Best Practices

An example of a clinical problem in need of research and for which a best practice is needed is delirium. Approximately 23% of post-acute admissions have delirium. Mortality rate in the 6 months after PAC admission is 5.7% in those without delirium, 18.3% in those with subsyndromal delirium, and 25% in those with delirium. Those patients with delirium are more likely to have a longer length of stay, be rehospitalized, and be less likely to return to the community. In those whom the admission delirium resolves within 2 weeks, the ability to perform activities of daily living is more likely to return to the preadmission level. If delirium is prolonged, the likelihood of regaining premorbid perform activity of daily living level is low. The PAC facility must identify delirium early and address the underlying medical cause in order to reduce severity and duration, as well as reduce the incidence of delirium for those patients arriving without delirium. The Delirium Abatement Program was a multifacility, multicomponent comprehensive, intensive, and expensive program that demonstrated an improvement in the documentation of delirium but no difference in duration of delirium, mortality, or functional ability. Although there is ongoing delirium research in the hospital setting and some delirium research in the long-term care setting, there is a still minimal attention to delirium in PAC.

A second example of a clinical problem in need of attention in PAC is heart failure, both acute and chronic, and specifically attention to heart failure with preserved ejection fraction (HFpEF). Nearly 25% of Medicare beneficiaries hospitalized with heart failure are discharged to a SNF. Their 30-day mortality rate is 14.4%, 30-day rehospitalization rate is 27%, and 1-year mortality rate is 54%. The majority of older adults with HF have HFpEF, rather than heart failure with reduced ejection fraction (HFrEF). There are no clinical care recommendations for HFpEF. There are no clinical care recommendations for HFrEF. The only class I recommendations for HFrEF are to control the blood pressure and to use diuretics for symptom control. These recommendations have levels of evidence “B” and “C,” respectively, since evidence to support the
recommendations is very limited. Also, the guideline does not specify the optimum BP medication or BP target. Also, it is not known how to manage HF in the SNF to minimize adverse outcomes. Several programs, including the randomized controlled trial “SNF-connect” are ongoing.

Other clinical problems in need of best practices include PAC management of malnutrition, acute kidney injury, and polypharmacy.

Summary

Care transition research currently focuses on hospital to home. There needs to be more attention paid to the transition from hospital to SNF, and from SNF to home, and for the care in between. Legislative and regulatory changes as well as financial incentives may be needed to help facilities and practitioners realign care processes to optimize patient outcomes. JAMDA can help by encouraging submissions on regulatory issues; quality measures; practitioner staffing models; and, best clinical practices dedicated to post-acute care.

References