

Post-Acute Care

Planning Ahead of the
Continuing Care Curve



POST-ACUTE CARE

PLANNING AHEAD OF THE CONTINUING CARE CURVE

The introduction of value-based care into the lexicon of health care executives and planners spearheaded decades-long conversations about how to lower costs without sacrificing quality. But post-acute care (PAC) was rarely mentioned in those discussions, despite accounting for more than 20% of Medicare's total fee-for-service (FFS) spending. Poised for double-digit growth over the next 10 years, PAC is now in the crosshairs of CMS-led cost-containment efforts.

Historically, FFS reimbursement models largely buffered health systems when it came to PAC targets. That buffer is now disappearing as new payment models force systems to work collaboratively with PAC providers.

Hospitals, for example, need to think more strategically about when and where patients are discharged after their acute care needs are met. On the other side, high-cost PAC providers will no longer be incented to compete for high-volume, low-acuity, short-stay cases as CMS inches closer to adopting a site-neutral payment construct. As a result, volumes will shift to lower-cost sites. And, finally, PAC and home health specifically will play a greater role in prehospital care.

It's expected that some markets will lack the capacity to accommodate this downshift. Some existing PAC providers will likely face a case mix that eclipses their expertise. Yet it will be incumbent on health systems to overcome these complications to ensure proper postdischarge placement for their patients.

That won't be easy. Aging baby boomers and the growing segment of patients aged 80 and over are leading to increased prevalence and severity of diseases that require PAC-level care. Despite surging volumes, the total number of providers nationwide has remained largely unchanged over the past 5 years, showing the potential constraints that could make appropriate patient placement increasingly difficult.

This report offers health systems guidance on developing a market-driven, customized response to these challenges. It contrasts utilization patterns in different markets and service lines. Finally, it offers 4 strategies to ensure teams are well equipped to devise a PAC approach that takes into account the impending value-based changes in this complex part of the care continuum.

This Sg2 report presents:

- Key drivers for PAC cost-containment efforts
- Market-specific examples
- PAC trends in:
 - Neurosciences
 - Cardiovascular
 - General medicine
- Four strategies to stay ahead of the curve:
 - Fill gaps with new levels of PAC.
 - Align with disease-specific skilled nursing facility (SNF) programs.
 - Enable more progressive placement decisions.
 - Optimize PAC networks with added competencies.

BOOMING DEMAND, COST NECESSITATE RESPONSE

Post-acute care remains health care's Wild West. This arena—traditionally composed of long-term acute care hospitals (LTACHs), inpatient rehabilitation facilities (IRFs), skilled nursing facilities, home health (HH) services and outpatient rehabilitation—has long seen unfettered spending and inexplicable variation.

Current Spending Is Unsustainable

From 2001 to 2015, Medicare PAC spending increased on average 5.4% per year. Without a dramatic change in course, spending in this component of the care continuum will become an even bigger budget buster. By 2028, in fact, total volumes are projected to surge nearly 29%.

\$60
billion

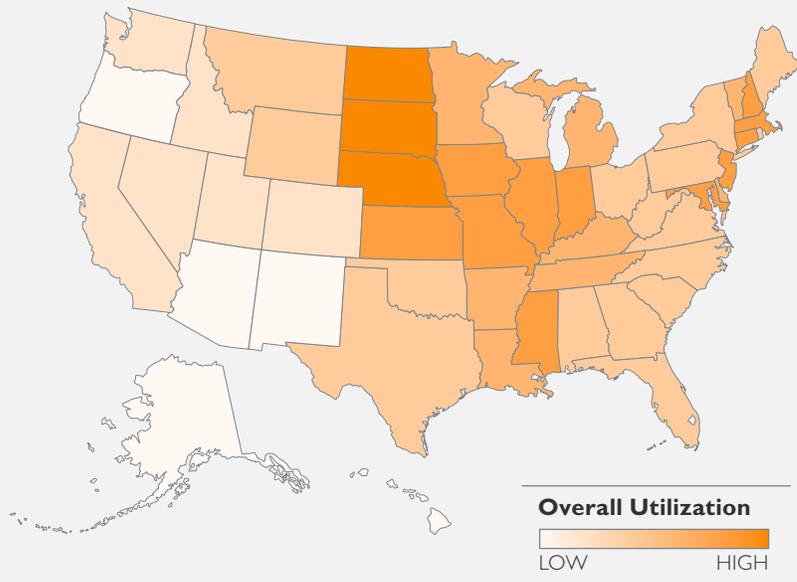
Total Medicare FFS spend
on PAC in 2016, **~16%** of total

Wide Variation Suggests Significant Room to Improve

Largely buffered from moves to value and independent from other sites along the care continuum, the basis of competition for PAC providers until just recently focused on driving volumes and maximizing per-stay payment. Provider systems had few incentives to manage patients' care postdischarge.

The variation observed across the nation does not correlate with risk stratification models, suggesting rampant inefficacy. With the right mix of assets, incentives and care protocols, PAC utilization can and should be more consistent and predictable across markets. The following map shows a wide variation in utilization rates at SNFs, a highly utilized PAC site across all service lines, illustrating opportunities for improvements across all PAC sites.

VARIATION IN SNF UTILIZATION



Note: Utilization based on average Medicare FFS SNF use per beneficiary in each state.

Sources: Medicare Payment Advisory Commission (MedPAC). *Medicare Payment Policy*. March 2018; American Health Insurance Plans (AHIP). *CareCentrix. Optimizing Post-Acute Care Strategy for Your Medicare Bid*. 2018; Impact of Change®, 2018; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

MEDICARE BENEFICIARIES AND SPEND BY PAC SITE, 2016

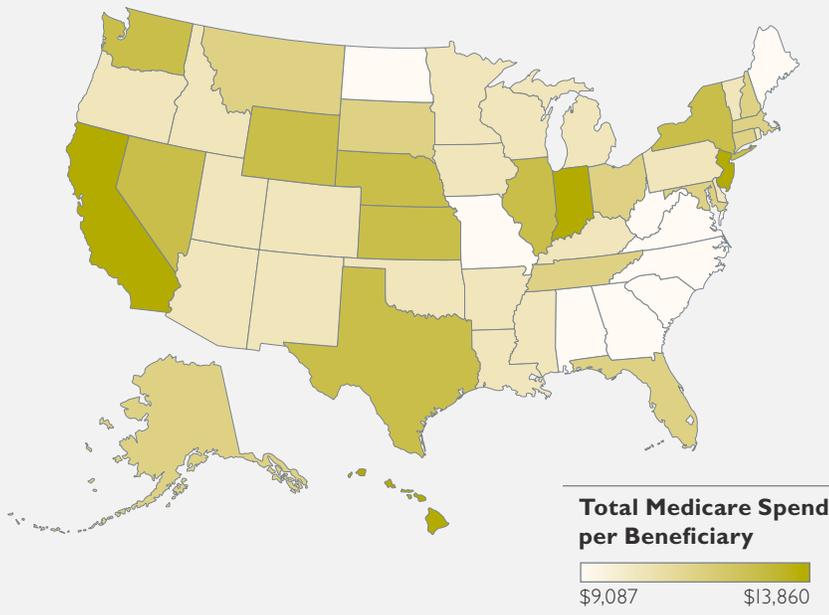
PAC Setting	Beneficiaries	Medicare Spend
HH	3.4 million	\$18.1 billion
SNF	1.6 million	\$29.1 billion
IRF	350,000	\$7.7 billion
LTACH	111,000	\$5.1 billion

Source: Medicare Payment Advisory Commission. *Medicare Payment Policy*. March 2018.



PAC accounts for
1 in 4 dollars
 spent by Medicare
 Advantage
 (MA) plans

VARIATION IN MEDICARE PAC SPEND PER BENEFICIARY



This dramatic regional variation in PAC utilization accounts for 73% of regional differences in total Medicare spend per beneficiary, as shown on the map above. (For an example of how this plays out in a market comparison, see page 8.)

Sources: CMS Standard Analytical File, 2015; Institute of Medicine of the National Academies. *Variation in Health Care Spending: Target Decision Making, Not Geography*. July 2013; Sg2 Analysis, 2018.

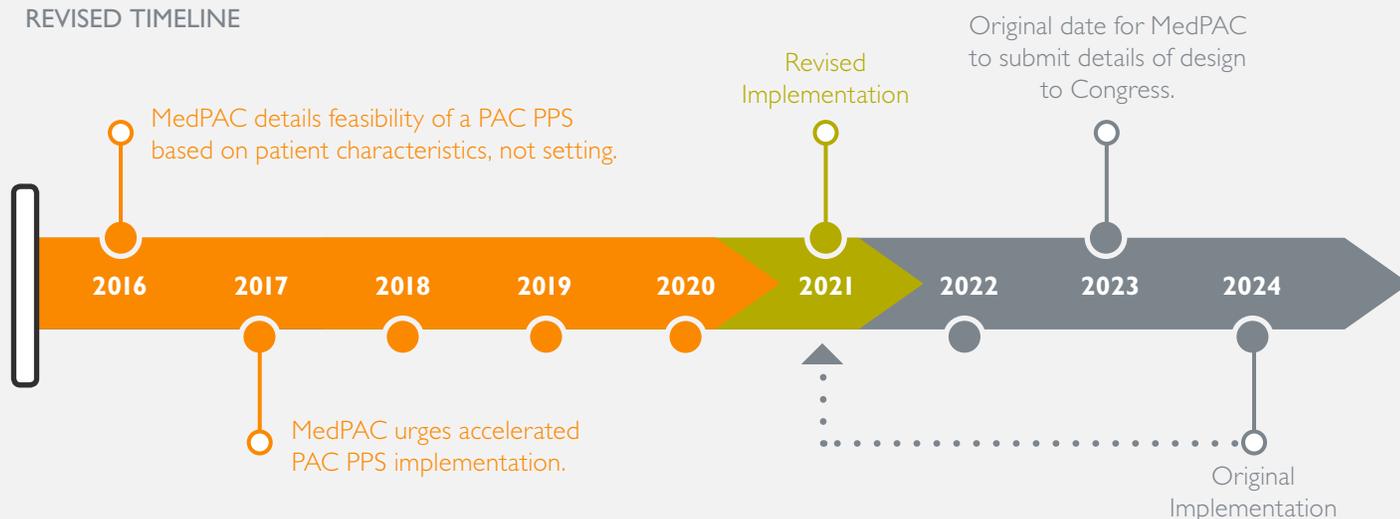
PAYERS MOVE TO REALIGN INCENTIVES

Although the demand for PAC services will remain high, care in this segment of the continuum increasingly is viewed as low-hanging fruit in value-based care. Emerging payment models gaining traction among public and private payers, such as Medicare Advantage and accountable care organizations (ACOs), combine to incent more appropriate patient placement and better alignment between acute and post-acute providers. The move toward value also includes the growth of bundled payments that span 30 to 120+ days beyond the acute episode.

Government Accelerates Plan for Site-Neutral Payment

Perhaps the biggest game changer, however, is Medicare's pending move away from site-based payments, which logically incented lengthy patient stays in high-acuity facilities. The move launched with the Bipartisan Budget Agreement of 2013, which set October 2017 as the deadline to phase out a higher payment rate to LTACHs vs acute care hospitals. The path toward equalizing PAC payments continued with the Improving Medicare Post-Acute Care Transformations (IMPACT) Act, passed in 2014, which first introduced the idea of site-neutral payment. A 2016 MedPAC report detailed the feasibility of moving to a payment system based on patient characteristics (eg, clinical acuity, functional status) rather than level-of-care differences by 2024. In 2017, the targeted implementation date was accelerated.

REVISED TIMELINE



Another proposal promoted by Medicare aimed at more predictable spending is the “convener model,” a bundled payment structure that assigns risk for appropriate PAC placement and progression to 1 party. Most organizations do not have the time or resources to make these decisions on their own and opt for third-party contracts.

As evidenced by the detailed proposals in play, CMS-led payment reform is no longer a question of *if* but *when*.

Note: Analysis excludes 0–17 age group. Rate increase reflective of sites that meet applicable participation criteria in quality reporting and EHR meaningful use programs. Does not account for 2% sequestration. PPS = prospective payment system. **Sources:** Medicare Payment Advisory Commission. *Medicare and the Health Care Delivery System*. June 2017; CMS. *Fed Regist.* 2016;81:52143, 51969, 52055, 56761, 76702, 79562, 80170; CMS. *Fed Regist.* 2016;80:46651; Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

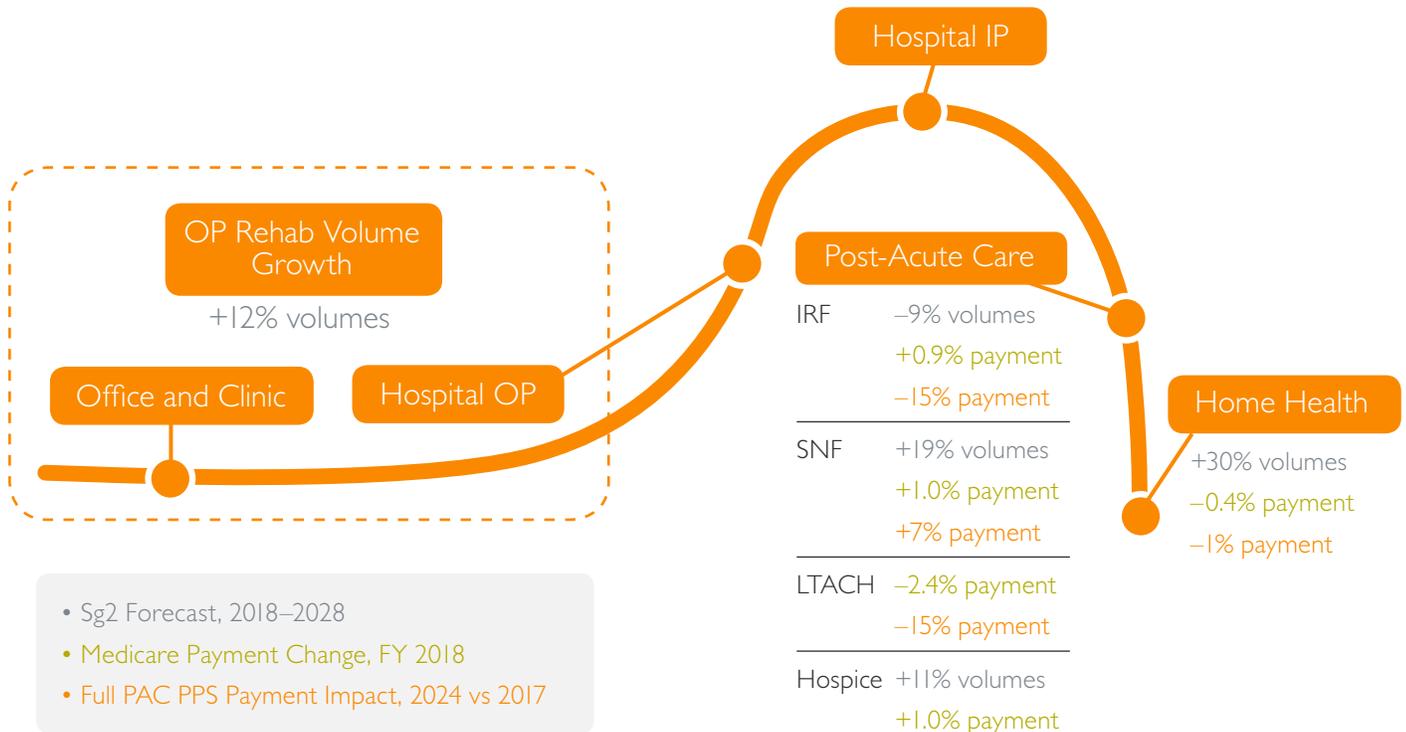
MA GROWTH POISED TO CHALLENGE STATUS QUO

A significant development in CMS's focus on cost containment is the migration of Medicare beneficiaries into MA plans. Since 2010, MA has grown 71%. By 2012 the effects of this growth began trickling down to PAC when expenditures began to slow. Market analyses have found a correlation between high MA enrollment, a shift toward lower PAC utilization and LOS, and higher utilization of lower-cost sites.

Site Downshift Anticipated as Result of Revised Payment, Policy

The sizable payment hit to the highest-acuity sites as well as further diffusion of risk-based payment models should curtail inefficient use not linked to better patient outcomes. Total PAC volumes and spending will be redistributed, and lower lengths of stay will be seen across all care settings.

PAC TRENDS BY SITE OF CARE



HOSPITALS MUST BRACE FOR MISMATCH OF ASSETS

With momentum building for value-based care, provider systems must think more strategically about PAC. Yet the looming downshift threatens to leave many systems ill-equipped to appropriately place patients if the capacity of lower-acuity options is insufficient or if they lack the needed competencies as patient complexities rise.

Total PAC Inventory Historically Not an Area of Focus

Many organizations have made headway in PAC planning, building networks of preferred providers and coordinating care teams. But a recent Sg2 survey illustrates that much of the heightened focus on this piece of the care continuum remains aligned with FFS incentives. Smoothing transitions to avoid readmissions or ED visits and enhanced throughput to reduce LOS remained top priorities.

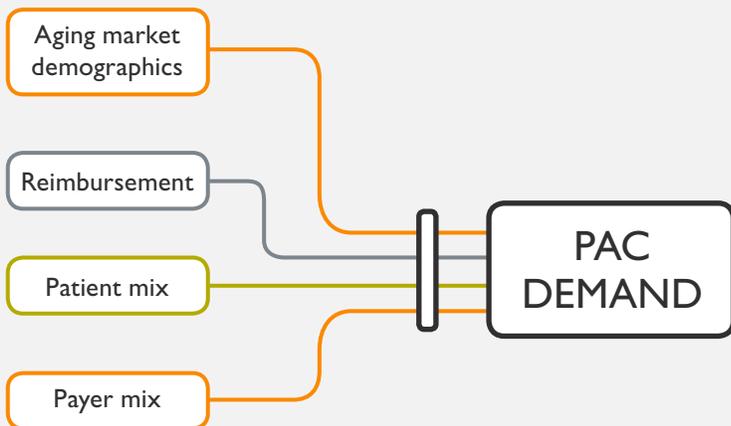
Less emphasis to date has been given to appropriate low-cost site placement and shared accountability. Changing PAC dynamics will begin to require more sophisticated bed need analyses than have ever existed beyond the IP setting.

Current Capacity, Future Need Driven by Highly Market-Specific Variables

Adequate SNF capacity could be especially problematic given the capital investment and regulatory hoops required to increase the number of beds. Bolstering home care capacity is a different challenge, largely contingent on workforce supply and technology optimization in the home.

Planners must begin to analyze today's local allocation (across IRFs, SNFs, HH, hospice, etc) against likely future demand.

DRIVERS OF PAC DEMAND



PAC demand will be driven by:

- Aging market demographics
- Reimbursement (decline in reimbursement and authorization denials can further destabilize providers in a market creating financial instability and fragmentation)
- Patient mix (acuity and types of services needed)
- Payer mix (FFS Medicare vs MA in particular) and the impact of managed care (will reduce both utilization and length of stay by level of care)



INTRICACIES OF DEMENTIA CARE UNDERSCORE COMPLEXITIES OF PAC PLANNING

As provider systems prepare for the evolving PAC needs of their patient populations, dementia serves as a sound example of the complexities involved in future planning.

As a primary diagnosis, dementia represents 3% of discharges to SNFs and 1% to home health nursing but is the eighth most common CARE Family discharged to SNFs. As a secondary diagnosis, its impact spans the health system. One in 9 Americans over the age of 65 and one-third of those over the age of 85 have Alzheimer disease. Most have comorbidities, and admissions for complications such as urinary tract infections, pneumonia, falls and even cardiovascular complications are common. Based on the average yearly spend of an Alzheimer patient, over one-third of the costs are associated with PAC services, including SNF, home health and hospice. These costs are a major component of the \$200+ billion spent annually in the management of Alzheimer disease.

As a patient's health status starts to deteriorate, rehab services (in both home health and SNF sites) can be valuable in maintaining some mobility and managing pain. As Alzheimer disease progresses, more intensive services will be required, including help with activities of daily living such as showering, eating and dressing. As a result, the resources needed to support Alzheimer patients in PAC settings are greater. More than 40% of Alzheimer patients are in the latter, severe stage of the disease when their ability to care for themselves is severely limited and chronic conditions such as heart disease, diabetes and hypertension often go unmanaged. The frequency of PAC services will increase, as well as the intensity of resources, especially in the last 12 to 18 months of life.

Managing Alzheimer patients in a PAC setting will require multidisciplinary teams to manage not only their Alzheimer disease but comorbid conditions and related medications.

US adults with Alzheimer disease

2015

5.1 million

2025

6.8 million

2030

8.2 million

Sources: Alzheimer's Association. *Changing the Trajectory of Alzheimer's Disease: How a Treatment by 2025 Saves Lives and Dollars*. 2015; Sg2 Analysis, 2018.

MARKET VARIATION FORESHADOWS EVOLUTION

Comparing PAC use and spend between markets showcases significant variation in both site mix and total spend across a wide range of clinical conditions. Market conditions to consider include physician alignment and employment models, rural vs urban settings and integrated delivery networks vs more independent operators. An Sg2 analysis comparing an FFS market with a highly managed one offers an illuminating preview of things to come with ongoing payment change. Houston and Minneapolis are competitive markets with a lot of providers seeking the advantage needed to secure long-term growth.

HOUSTON: High use of high-acuity settings persists

This traditional market lacks Certificate of Need (CON) or similar site restrictions. As of 2016, Medicare Advantage penetration was in line with the national average at 32%. It is home to a large, internationally known inpatient rehab center, which has created a highly competitive environment for those services and, subsequently, higher use and spend for some CARE Families. The rest of the market remains highly fragmented.

MINNEAPOLIS: Downshift already under way

This highly managed market already has a sizable Medicare Advantage population and percent of commercial insureds in capitated arrangements. Minnesota leads the country in Medicare Advantage penetration at 56%. Although it ended its CON requirements more than 3 decades ago, similar regulatory measures remain in place. Lower use of IP rehab and efficient SNF care reflect the market's focus on improved efficiency.

MARKET COMPARISON OF PAC SITE USE AND MEDICARE SPEND PER BENEFICIARY, 2015

Market	% of Total PAC Placement			PAC Reimbursement per Beneficiary by CARE Family				
	IP Rehab	SNF	Home Health	CHF	COPD	Stroke (Hemorrhagic and Ischemic)	Diabetes Mellitus	Dementia and Cognitive Disorders
HOUSTON	8%	28%	84%	\$4,813	\$4,125	\$12,417	\$4,207	\$9,816
MINNEAPOLIS	1%	55%	71%	\$4,480	\$4,032	\$9,219	\$3,877	\$4,995

Indicative of payer impact on placement patterns, 19% of Houston stroke patients are referred to IRFs vs only 3% in more managed Minneapolis.

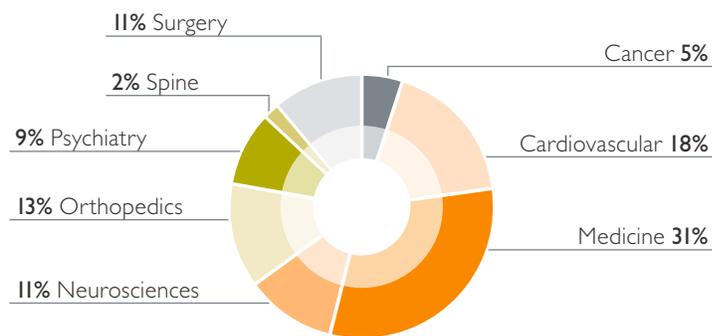
Total PAC spend per beneficiary is almost one-third higher in Houston than Minneapolis. In SNFs alone, Minneapolis spends 44% less per beneficiary, likely due to lower LOS and more appropriate placement.

CHF = congestive heart failure; COPD = chronic obstructive pulmonary disease.
Sources: CMS Standard Analytical File, 2015; Sg2 Analysis, 2018.

SERVICE LINE TRENDS ALSO PORTEND SHIFTS

In addition to policy and payment impacts on the future PAC landscape, epidemiological, clinical, technological and care delivery trends will also shape emerging demand across the PAC continuum. An aging population and rising incidence rates for a range of health conditions increase the complexity of patients receiving care in PAC. But, disease management programs and emerging clinical technologies will reduce the acuity of some patient populations. Finally, consumerism, including patient and family choice as well as out-of-pocket costs, will support a shift toward more local, less costly care locations as well as an overall reduction in the use rate of some services such as OP physical therapy.

TOTAL PAC USE BY SERVICE LINE, US MARKET, 2018



Note: PAC services defined as IP rehab, SNF and home health nursing episodes. Home nursing episodes assume 9.8 nursing visits per episode.
Sources: Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

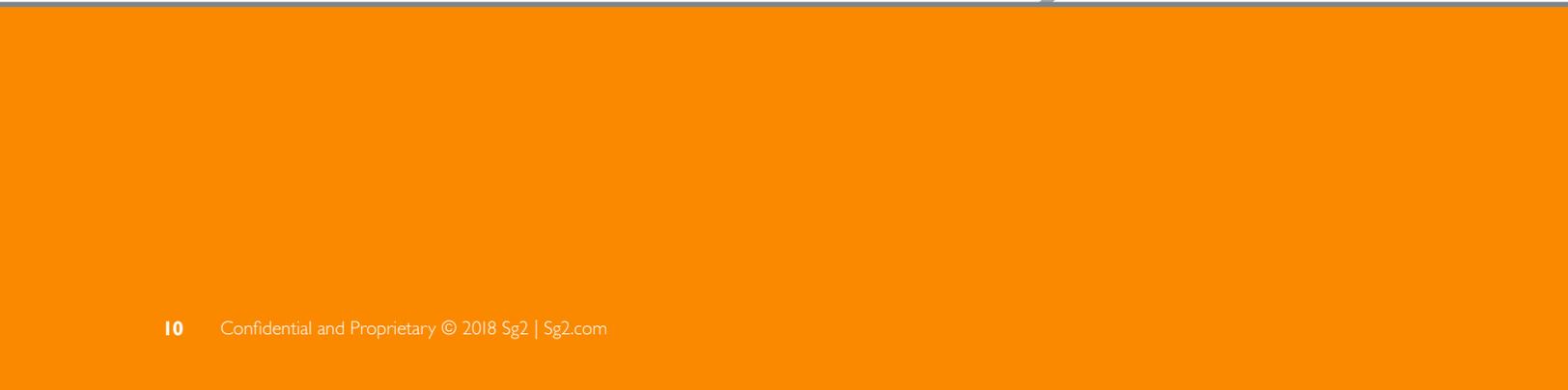
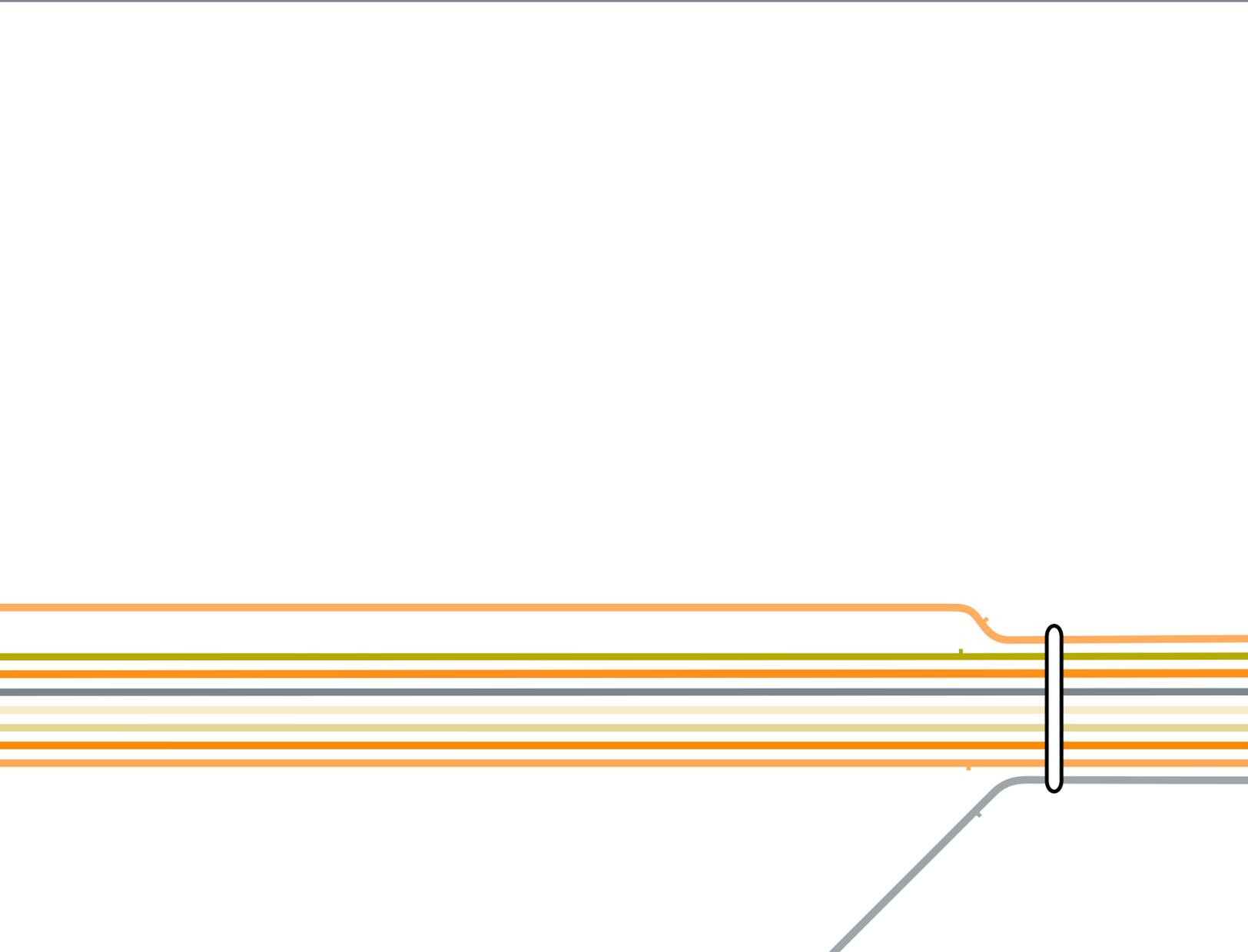
It's imperative that organizations understand their case mix, as each will dictate specific patient characteristics and needs that must be met by a market's PAC assets. As health systems analyze their service line forecasts and trends they must keep an eye toward:

- **Levels of acuity.** The needs and expectations of elective patients will differ significantly from those of complex critical patients.
- **Improved risk stratification.** Identify patients at discharge who can be appropriately supported in their homes.
- **Payment shifts.** As health systems assume more risk, the triple aim (right care, right place, right time) will no longer be a government-led carrot but a potentially devastating financial stick, especially if CMS adopts a site-neutral payment model. The impacts will vary according to service line. (See Appendix A.)
- **Technology adoption.** Innovations such as minimally invasive and robotic surgery, precision diagnostics, and virtual health will impact the mix and volume of PAC services needed.

General medicine, cardiovascular and neurosciences make up nearly

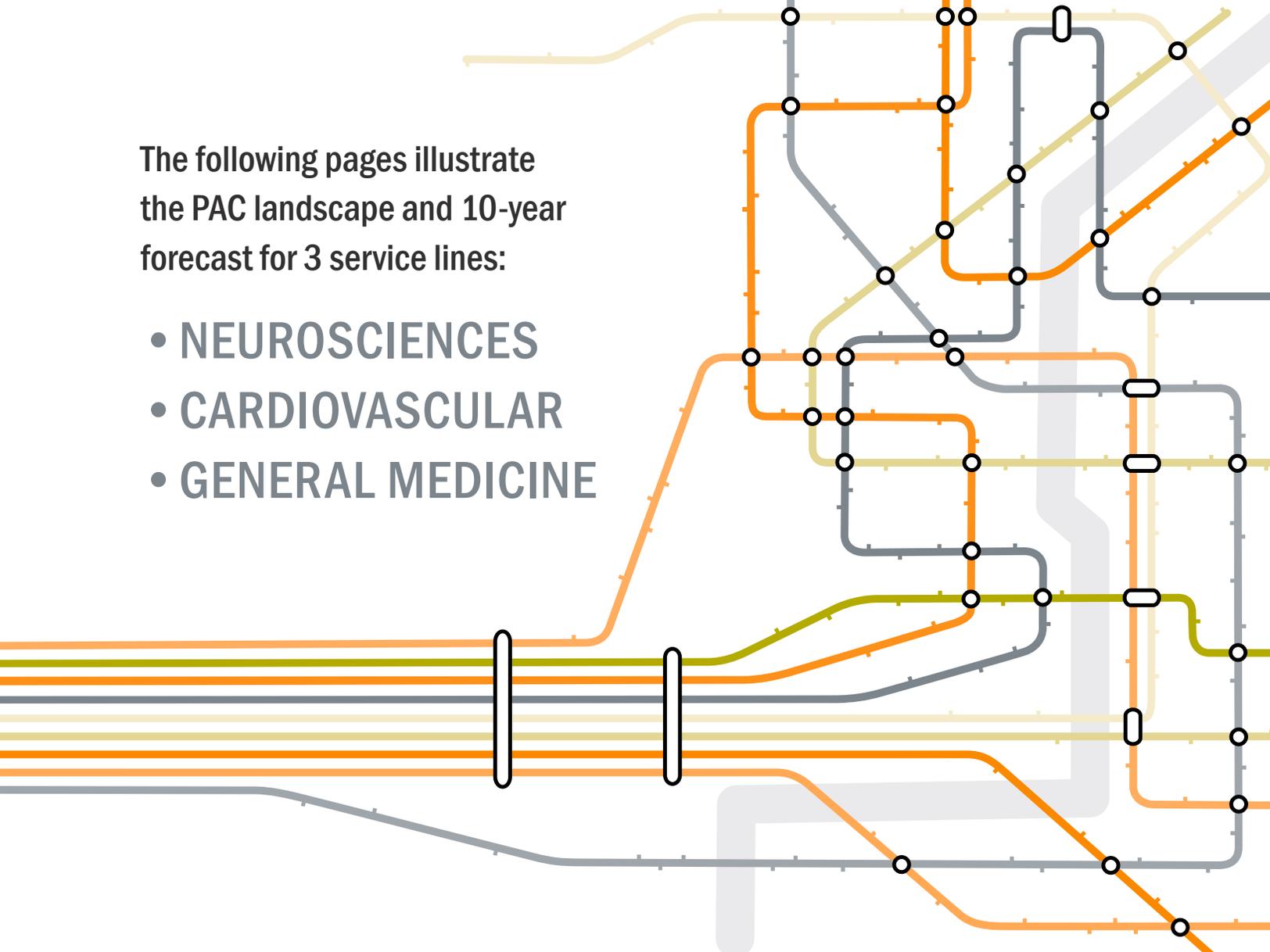
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of PAC service volumes



The following pages illustrate the PAC landscape and 10-year forecast for 3 service lines:

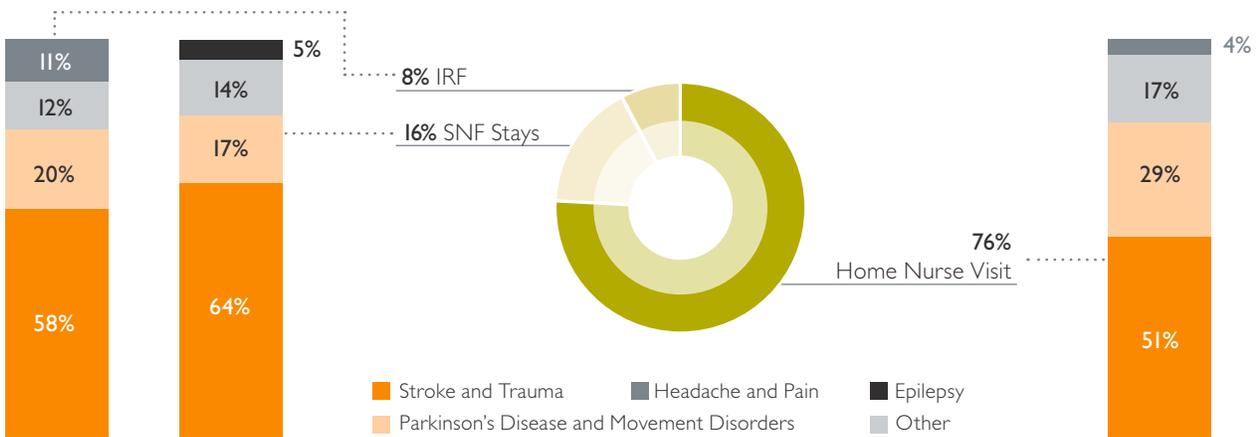
- NEUROSCIENCES
- CARDIOVASCULAR
- GENERAL MEDICINE



NEUROSCIENCES POST-ACUTE LANDSCAPE

Half of all acute neurosciences admissions are discharged to post-acute care. This service line also outpaces all others in percentage of total mix and growth of IP rehabilitation. Stroke and trauma patients with devastating neurological injury are the predominant drivers of this utilization. In fact, stroke and other neurological conditions accounted for almost a third of all IRF cases in 2015. And yet even the neurosciences will not be exempt from the anticipated downshift in PAC care settings. This will hold true not only for patients for whom long-term stroke impact can be minimized but also those with chronic and degenerative neurological conditions.

NEUROSCIENCES PAC MIX, US MARKET, 2018



Note: HH nursing is by episode, which assumes an average of 9.8 days or nursing encounters. Percentages may not total 100% due to rounding.

PAC Forecast

The aging population ensures increased demand in the neurosciences across all PAC sites. Even so, 10-year growth will be significantly tempered in IP rehab in contrast to soaring growth in demand for SNF and home health nursing. The mix at discrete sites will change for some but not all neurosciences conditions. The biggest shift will be seen among patients with Parkinson disease and movement disorders, epilepsy, and multiple sclerosis (MS).



Note: IP rehabilitation is a procedure within the IP Impact of Change forecast. SNF and home health nursing are procedures within the OP forecast. Data include the neurosciences service line and the Brain/Central Nervous System Cancer CARE Family. Sources: Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

Key Demand Drivers by PAC Site

IP Rehab

- ▲ This high-acuity setting will remain the most appropriate discharge destination for a large proportion of **stroke and trauma patients**. Overall pressure on IP rehab volumes and influence of patient choice will spark intense competition for these patients. Highly specialized services such as stroke, traumatic brain injury and spinal cord injury programs will be best positioned to sustain growth, at least over the next 5 years.
- ▼ Advances in minimally invasive surgery, including robot-assisted laser ablation to treat **brain cancer** and **epilepsy**, will dampen demand as these patients will not have the degree of functional deficits as those who undergo open surgical procedures.

SNF

- ▲ These sites will increasingly manage patients with **Parkinson disease and other movement disorders** including those with deep brain stimulation, **epilepsy and multiple sclerosis** who need more intensive rehabilitation and supportive care than can be provided with OP rehab.

HH Nursing and OP Rehab

- ▲ The emergence of mechanical thrombectomy as the standard of care will boost the percentage of ischemic **stroke** patients who can be discharged directly to home with some OP rehab to address any minor functional deficits. Patients in the early to middle stages of **Parkinson and MS** also will increasingly benefit from virtual rehab services.
- ▼ Innovative approaches to injury prevention, such as **concussion**-detecting helmets, will reduce repeat injury and the need for OP rehab.

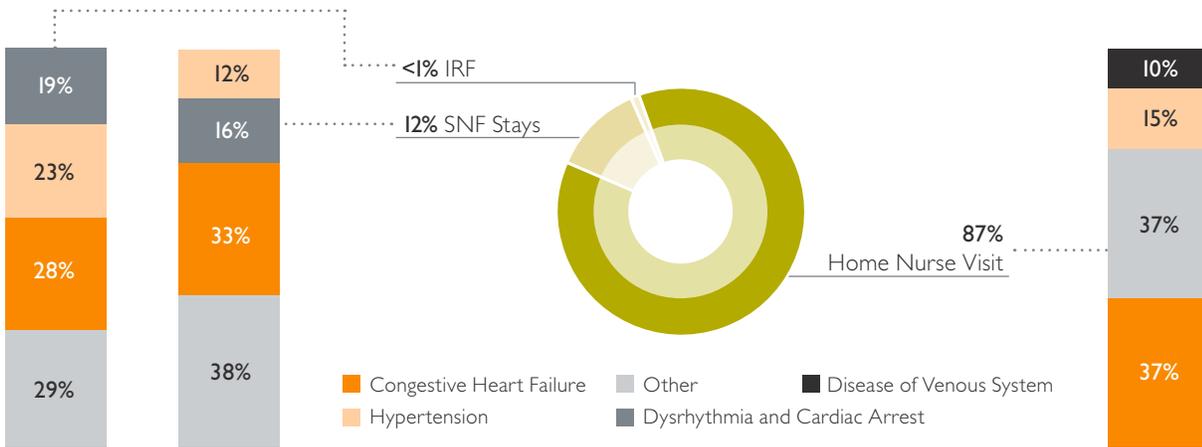
PREPARE FOR FUTURE NEEDS

- **Facility planning:** IP and OP rehab sites will need dedicated space to accommodate ongoing adoption of exoskeleton for gait training among patients with spinal cord and other neurological injuries. Space for virtual reality experiences that complement alternative therapy will also be increasingly incorporated for neurorehab.
- **Technology:** Regenerative medicine techniques including stem cell replacement therapy to support neuroregeneration will require coordination with rehabilitation protocols (both IP and OP). Technological facilities and expertise in cell-based therapies will need to be added to programs moving into this niche area of neurorehab.
- **Workforce:** The shift of patients with neurological injury to SNFs and home health will require stepped-up skill building in neurorehab and pain control. High rates of mental health comorbidities among patients with chronic neurological conditions will require training of staff to ensure early recognition.

CARDIOVASCULAR POST-ACUTE LANDSCAPE

The rising complexity of the cardiovascular patient population is evident not only in an increase in ALOS from 4.4 days in 2004 to 4.6 days in 2014 but also in the use of post-acute care services. Over that same period, the percentage of discharges to home dropped from 67% to 60%, with an increase in discharges to all types of PAC services (either rehab, nursing facility or home health). Notably, discharges to SNFs and home health increased from 13% to 17% and 10% to 15%, respectively. Drilling into PAC use by specific clinical conditions will provide important insights that will lead to program development, adequate capacity, technology adoption and partnership opportunities. In particular, patients with CHF represent the largest need for PAC services.

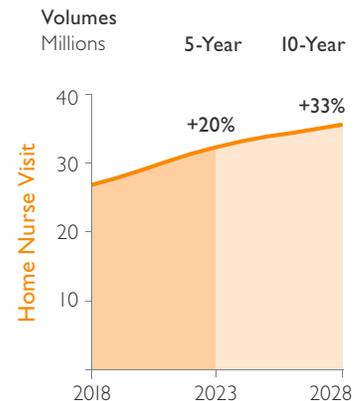
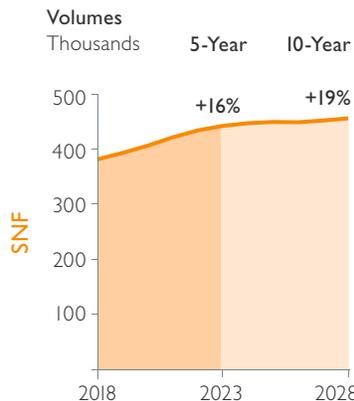
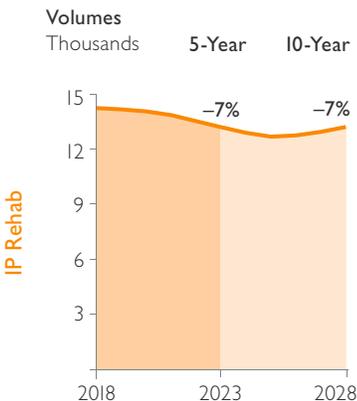
CARDIOVASCULAR PAC MIX, US MARKET, 2018



Note: HH nursing is by episode, which assumes an average of 9.8 days or nursing encounters. Percentages may not total 100% due to rounding.

PAC Forecast

The increasing prevalence and incidence of cardiovascular disease, along with the aging population, will result in growth of post-acute services over the next decade, but CV will not be immune to the downshift trend. The focus on chronic disease management and transitional care will generate additional support for cardiac rehab (CR) programs. Technology and care innovations will drive volumes to SNFs and enable more care to be delivered in the home.



Key Demand Drivers by PAC Site

Inpatient Rehab

- ▼ The need for IP rehab will be mitigated by care improvements at SNFs, remote monitoring for patients at home and cardiac rehab program utilization.
- ▲ The increasing prevalence and incidence of **cardiovascular disease**, aging of the population, and rising patient complexity with a growing number of comorbidities will drive up demand for IP rehab in a small subset of CV patients, such as those with **CHF**, **dysrhythmia** and **chronic heart disease**.

Skilled Nursing

- ▲ Improved minimally invasive procedures for treatment of **valve disease and dysrhythmia** (eg, TAVR, intracardiac catheter ablation) and medical therapies (eg, NOACs, LDL-lowering agents) that lead to fewer complications and simpler patient management will increase the number of cases that can be handled at the SNF level.

HH Nursing and Cardiac Rehab

- ▲ Technology will enable home health agencies to monitor increasingly complex patients. Waivers for physician oversight and technology-enabled home-based programs have the potential to greatly improve access.

Given recently expanded indications to include **CHF and peripheral vascular disease**, along with increases in payment, cardiac rehab now offers providers an additional channel to strengthen relationships with patients while improving outcomes.

PREPARE FOR FUTURE NEEDS

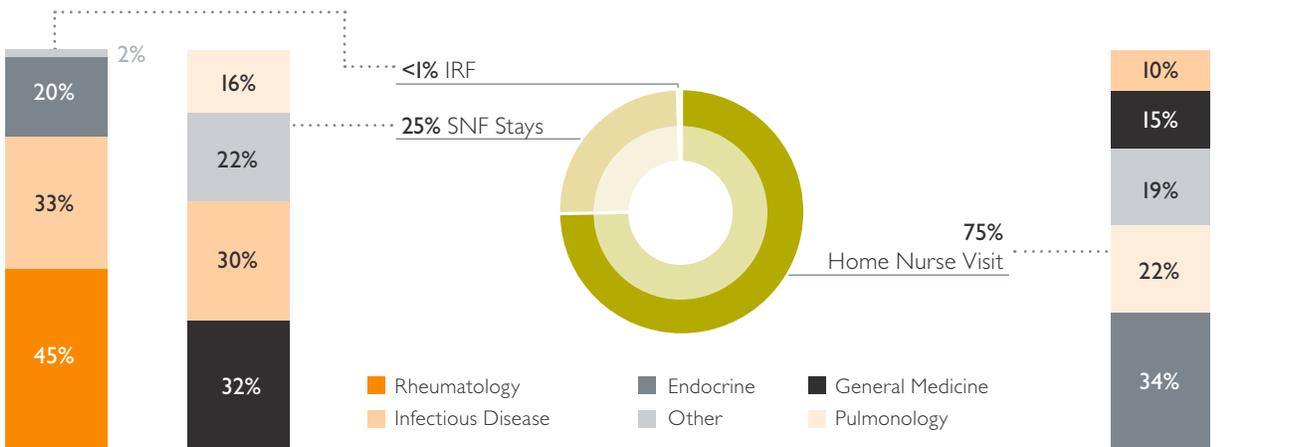
- **Facility planning:** Medical (CHF and multiple comorbidities) and surgical (CABG and valve) patients have very different needs postdischarge. Working with partners that have the staff, technology and protocols to manage each patient type will help improve patient outcomes.
- **Care protocols:** By reinventing cardiac rehab to be more than just an exercise program, organizations can better leverage CR services to improve value for all stakeholders. Integrating CR into treatment decisions and care pathways, increasing physician and patient expectations around participation, and thinking of each patient interaction as a transitional care program, progressive organizations can transform CR programs to improve value.
- **Technology:** While wearable devices have traditionally been thought of as a consumerism play, they may be equally as valuable in PAC settings, providing real-time data that allow for the early detection of symptoms or onset of arrhythmias (eg, atrial fibrillation, lung fluid, hypertension, peripheral edema). Use of these devices may reduce readmissions and create workforce efficiencies.

CABG = coronary artery bypass graft; LDL = low-density lipoprotein; NOAC = novel oral anticoagulant; TAVR = transcatheter aortic valve replacement. **Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier; Denominator; Home Health Agency; Hospice; Outpatient; Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

GENERAL MEDICINE POST-ACUTE LANDSCAPE

Forty-five percent of all general medicine discharges, including 49% of infectious disease and 47% of nephrology patients, go to a post-acute care setting. Increased emphasis on post-acute coordination was ignited by the addition of COPD to the diagnosis list of the Hospital Readmissions Reduction Program in 2015 by CMS. Currently, 40% of COPD acute care admissions are discharged to a PAC level of care. Growing acute care volumes for COPD, diabetes and pneumonia will spur additional PAC volumes, particularly in skilled nursing and home health. Most notably, as a disease that is not easily preventable and on the rise, sepsis will be a significant driver of PAC volumes in this service line. Sepsis accounted for the third highest number of LTACH discharges in 2015, after pulmonary edema/respiratory failure and respiratory conditions requiring 96+ hours of ventilator support. In communities that have seen LTACH bed closures as a result of the federal moratorium (now sunsetted), these patients will likely remain in acute care beds. Only skilled nursing facilities that have added capabilities for more respiratory life support services (adding significantly to the cost of care) would be able to care for these patients.

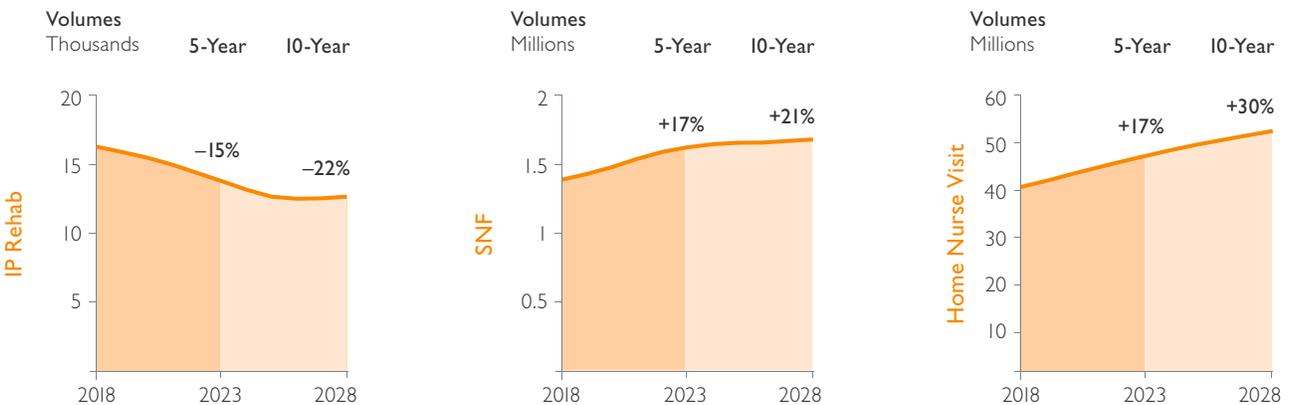
GENERAL MEDICINE PAC MIX, US MARKET, 2018



Note: HH nursing is by episode, which assumes an average of 9.8 days or nursing encounters. Percentages may not total 100% due to rounding.

PAC Forecast

Rising rates of under- or uninsured individuals will lead to delays in patients seeking care before complications arise, fueling a rise in PAC services overall. However, the focus on prevention, disease maintenance and avoidance of further exacerbations of disease will mean a shift of volume from SNFs to home health nursing. In the long-term, as remote monitoring and other virtual health technologies gain traction, home health will see even more gains.



Key Demand Drivers by PAC Site

Inpatient Rehab

- IP rehab utilization will see a decline in 2 distinct patient groups. Patients with **fluid/electrolyte disorders that include dehydration** will get better disease management support and use acute inpatient services less often, subsequently reducing the number of patients who need post-acute IP rehab. Patients with multiple chronic diseases, who are more complex and frailer, won't be able to withstand the intensity of IP rehab therapy.

Skilled Nursing

- Coincident with the rise in **diabetes** will be a rise in **chronic renal failure, end-stage renal disease, wounds, gangrene and amputations**, which will fuel SNF volumes.

The rise of comorbid chronic conditions will translate to rising volumes in the SNF setting as patients will require a higher level of care than can be received in a home health care environment.

Rising **septicemia** rates will drive up demand for skilled nursing care. Currently, just over 30% of septicemia patients go to skilled nursing. While improvements in early detection may allow some of these patients to shift to care under home health nursing, there will still be substantial growth in SNF demand for these patients.

HH Nursing

- Technology, such as the 2T magnetic resonance platform and additional molecular diagnostic tools, is speeding up diagnosis time and increasing the number of **septicemia** patients for whom home care is appropriate. As remote monitoring and other virtual health technologies gain traction, volumes will migrate away from SNF sites to home health.

Source: Impact of Change®, 2018; HCUP National Inpatient Sample (NIS), Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

PREPARE FOR FUTURE NEEDS

- Workforce:** Provide patient educators and RNs with training to effectively deliver customized self-management education. Specific areas of interest include telephonic coaching and use of home blood sugar monitors for diabetes patients and proper daily use of bronchodilators for COPD patients. Skilled providers will need to be trained to manage an increasingly complex patient population, potentially spending more time with each patient to ensure complications are reduced and education is provided about proper medication dosing.
- Technology:** Watch for new virtual health offerings including disease management tools, biometric monitoring (eg, heart rate, sleep cycle) and medication compliance (digital pills) that would increase the feasibility of home health care for a larger population, particularly for diabetes, pneumonia and COPD patients. On-demand virtual primary care visits will support earlier intervention, reducing IP admissions and readmissions.
- Care protocols:** Increasing chronic wound rates will require more standardized care protocols for surgical wound healing, prosthetic fitting, use training and adjustments, and ongoing secondary prevention.

IMPLEMENT MARKET-DRIVEN, STRATEGIC APPROACH

With a keen understanding of market-level payer mix and plan designs and how those trends will likely change and impact placement decisions, organizations can develop an informed strategic plan. Execution will require strong partnerships between acute and post-acute providers, 2 groups that have historically been siloed from each other. Even those strategies for which PAC providers are primarily accountable will require alignment with hospitals, and vice versa. The strategies detailed in this section are not stepwise and may be undertaken concurrently.

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- Align With Disease-Specific SNF Programs Page 23
- Enable More Progressive Placement Decisions Page 24
- Optimize PAC Networks With Added Competencies Page 26



KNOW YOUR MARKET

Imperatives to expand access to PAC services and elevate care planning and quality from PAC networks will span all markets. Thus, a deep understanding of individual market and organizational dynamics will be essential in setting strategic direction. The changing service mix will reflect the stage of market evolution to value-based care. Use of PAC services by level of care will need to evolve in step with the changing payment and policy landscape. For example:

- A health system located in an already highly managed market, like Minneapolis (featured on page 8), would benefit from strategies aimed at deriving higher value from lower-cost sites of care, such as creating disease-specific programs and added competencies. Research has found MA patients are more likely than FFS plan members to be discharged to a PAC facility rated lower on Medicare's star rating system. This will likely change once MA enrollment reaches a tipping point and higher-quality sites no longer rely on FFS patients to drive volume. Until that tipping point is reached, health systems must focus on increasing the quality of care across their preferred provider networks.
- Health systems in traditional FFS markets, like Houston, should focus on preparing for an eventual shift to value by optimizing PAC networks with added competencies and creating new levels of care in their network. They must also become more progressive in their placement decisions.

FILL GAPS WITH NEW LEVELS OF PAC

Not only will the anticipated site downshift put increased pressure on SNF and home care capacity, it will challenge organizations to devise a broader menu of options. Additional steps in the typical patient journey could significantly enhance quality of care and cost-effectiveness.

Optimize Use of Transitional Care

Progressive provider systems, in collaboration with their PAC partners, have deployed transitional care programs (sometimes called subacute programs) as an alternative path for patients who otherwise would have very extended acute-level lengths of stay or require discharge to an LTACH or IRF.

Success with this model requires organizations to reevaluate staffing ratios (particularly for RNs), provide 24/7 physician and nurse coverage, and add on-site care coordinators, all of which are likely to raise subacute unit labor costs. Focus will also include bolstering competencies in certain clinical areas. Following are services commonly found in a subacute program:

- Advanced intravenous therapy
- Enteral nutrition (feeding tube)
- Gurney or wheelchair mobility
- Head or spinal cord injury care
- Pain management
- Patient and family education
- Physical, occupational and/or speech therapy
- Respiratory care
- Social services and/or case management
- Tracheostomy care
- Ventilator care
- Wound management

Acquiring the needed staff and competencies may be challenging from a cost perspective. Under fee-for-service there is not a separate pay category for transitional care; it is paid at the SNF level. Some organizations offset the investment with money saved from reduced LOS and readmissions.

CASE STUDY

Christiana Care Health System Creates Seamless Discharge to Home

Readmission rates led this Delaware-based health system to recognize that a new approach to home health care would enable it to improve patient outcomes and maximize use of that low-acuity PAC site. Through more systematic development of continuing care plans, Christiana Care aims to increase the percentage of CHF patients discharged to home health from 40% to 70% while improving outcomes. Under its traditional approach, it was seeing 30-day readmission rates of 20% among these patients, compared to data showing 7% rates achieved for CHF patients discharged with a telemonitoring plan.

Christiana Care's team plans to embed decision support tools in its EHR to identify patients appropriate for discharge to home and to establish evaluation criteria including age, diagnosis, number of times previously readmitted, suitability of home environment and number of chronic conditions.

Source: Sg2 Interview With Christiana Care Health System, January 2018.

CASE STUDY

Allina Health Deploys Transitional Care Units

In 2009, this 13-hospital system in Minneapolis, MN, launched SeniorCare Transitions, a network of 19 well-resourced transitional care units. The network was designed to expand clinical coverage, capacity and staff competencies to enable high-quality care for higher-acuity patients. The network serves 10,000 patients annually with a daily census of 450; 70% are Allina patients. Most common discharges: orthopedics, spine, COPD, cardiology, med/surg and pneumonia. Features include:

Quality metrics and outcomes: Clinical scorecards enable ongoing quality measurement. Outcomes show LOS and readmission rates well below the national average.

Collaborative care team: Physicians (SNFists) and nurse practitioners practice collaboratively. Patients are seen within 72 hours of admission and receive 2 visits weekly. Providers participate at weekly interdisciplinary meetings for their SNFs.

Standardized care management: Care includes 24-hour nurse triage, management protocols, and clinical care pathways for COPD, CHF, joint replacements and pneumonia.

Communication: The EMR is integrated with SNF partners through a web-based service.

Source: Sg2 Interviews With Allina Health, October 2017.

RESULTS

LOS

National: **28 days**

Allina affiliated: **19 days**

Allina (partially) owned: **<16**

Readmissions (30-Day)

National: **24%**

Allina affiliated: **14%**

Allina (partially) owned: **13%**

Deemphasize Idea of Discharge With Home-Based Continuing Care

Effective care models expand when the often-blurry line between acute and post-acute care is essentially removed. This allows the home as a site of care to serve much broader needs. These options, however, require stepped-up investment in workforce and technology, and reimbursement can be a barrier, though CMS is loosening restrictions.

Examples include:

- Structured programs to bypass inpatient admissions:

Hospital at Home programs enable care that typically would require a hospital admission to be provided in patients' homes. Services include remote monitoring and daily (or even more frequent) visits by physicians and/or advanced practitioners and nurses. After an average of 3 days the patient is "discharged" from an acute status and, when necessary, transitions to a post-acute level of home health care.

- Home-based continuing care plans to limit discharge to high-level PAC site, reduce readmissions:

A growing number of health systems have begun replacing standard discharge instructions with

comprehensive continuing care plans. These plans establish milestones and goals to be managed by health system staff. Inclusion of remote monitoring and home visits when necessary, which are not reimbursed in many instances, also enable early detection of clinical deterioration, helping to forestall ED visits or avoidable readmissions.

Example: Medtronic's Beacon Heart Failure Management Service combines remote monitoring with data collections and analytics to risk stratify patients with ICDs and CRTs, develop personalized care plans and monitor their progress while they remain at home.

CASE STUDY

Presbyterian Healthcare Services Reroutes Care Path

In 2008, this large integrated delivery system in Albuquerque, NM, launched Hospital at Home. The program offers alternatives to admission for certain health plan members who present at the ED or require services beyond what they can receive in Presbyterian's Healthcare at Home service line. Prime diagnoses include pneumonia, COPD, CHF, deep vein thrombosis, pulmonary embolism, dehydration, nausea and vomiting, complicated urinary tract infection, and urosepsis. Features include:

Payment: Payment is determined via a contract with Presbyterian Health Plan for a modified DRG episodic payment, which more than covers the costs.

Care teams: Two clinical teams divide the program's service area (250 square miles around Albuquerque) and consist of a physician, 2 nurse practitioners, a social worker and 2 health service assistants (who function as receptionists, care coordinators and data managers). Patients are seen once or twice daily by a physician or an NP; a home health aide may also visit to provide personal care twice daily if needed.

Support: Four nurses provide flexible coverage for this program and others in the service line. A physician and nurse are available for Hospital at Home patients 24 hours a day, 7 days a week for any urgent needs. The physicians are employed by the health system

Sources: Hospital at Home website. Accessed September 2015; Cryer L et al. *Health Affairs*. 2012;31:1237-1243; Sg2 Interview With Presbyterian Healthcare Services, August 2015; Klein S et al. *Hospital at Home Model: Bringing Hospital-Level Care to the Patient*. Commonwealth Fund. August 22, 2016.

CRT = cardiac resynchronization therapy; ICD = implantable cardiac defibrillator; NP = nurse practitioner; TJR = total joint replacement.
Sources: Medtronic website. Accessed February 2018; Sg2 Interview With Highmark, December 2017.

ALIGN WITH DISEASE-SPECIFIC SNF PROGRAMS

Service line PAC forecasts could reveal opportunities for specialization among SNFs in a market. Cardiac care centers, wound care programs and stroke recovery centers are examples of a rising trend aimed at improving outcomes by building expertise, best practices and care protocols for specific conditions.

Specialized programs can reduce LOS (currently, ALOS in SNFs is 26.5 days), opening up capacity to care for more patients. This could help markets with capacity constraints accommodate the high growth expected in the SNF setting.

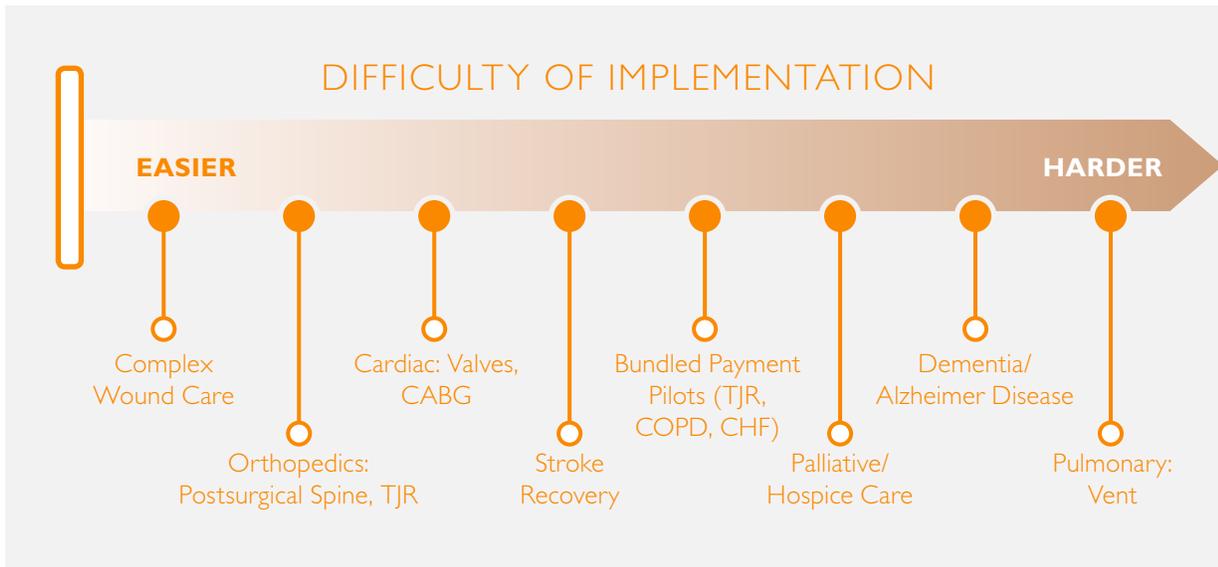
Successful programs are often built with shared resources from both acute and post-acute providers and cooperation from insurers through shared data. **Highmark Home & Community Services**, a subsidiary of the insurer and hospital network Highmark launched in 2017 to focus on PAC management, is one organization now building out condition-specific SNF networks.

SNF volumes are expected to grow

19%

over the next decade

The difficulty and cost of implementation are dependent on the condition the program aims to treat.



“Most PAC networks are being built by asking SNFs to be the jacks of all trades and the masters of none. For real clinical transformation, both PAC and provider networks need to work hand in hand and specialize in site of care.”

—Nick Stupakis, Vice President, Highmark Home & Community Services

TJR = total joint replacement
 Source: Sg2 Interview With Highmark, December 2017.

ENABLE MORE PROGRESSIVE PLACEMENT DECISIONS

A strong care management infrastructure ensures organizations can effectively match patients to the ideal care level. Rethinking the role of case managers, updated transition protocols and patient education are all key to navigating the changing PAC landscape.

Consider PAC Liaisons

Mirroring wider industry trends, 32% of surveyed Sg2 members said their top workforce challenge was lack of transitional care expertise to enhance care coordination. But progressive systems have begun to redefine the role of their traditional case managers to meet this need.

Traditional Case Manager	Post-Acute Care Liaison
Fragmented EMRs across care continuum	Accompanied by integrated and automated software
In-hospital discharge planning	Embedded case management in PCP office or PCMH
Basic educational material	Patient engagement, activation and assessment, self-care strategies
Limited data analysis and availability	Proactive risk stratification and identification
LOS management	PAC transition planning
Primary care	Multidisciplinary teams (eg, dietitian, behavioral health)

Streamline Transitions

Transition protocols can help standardize placement decisions, and support tools can augment the decision-making process. Two examples that show the potential impact of technology on transitions include:

- **Cleveland Clinic** developed an electronically administered questionnaire to assess a patient's mobility. Named for the total questions used in the evaluation, the "6 Clicks" program provides data to help occupational and physical therapists develop care plans to improve patient mobility and guide placement decisions, avoiding unnecessary SNF and inpatient rehab stays.
- **Partners HealthCare** is combating physicians' wariness about data generated by artificial intelligence with its "Explainable AI" program. The system, developed by Partners Connected Health and Hitachi, generates a score showing patients' likelihood of readmission but also provides actionable details on how that score was reached. A pilot among CHF patients in Partners Connected Cardiac Care Program confirmed high accuracy in its ability to predict readmission risk and guide appropriate action. The system hopes to expand use into PAC placement decisions.

Educate Patients

Part and parcel with value-based models is consumerism, which could create a potential imbalance of appropriate patient placement and outcomes. For example, CMS's removal of OP rehabilitation coverage caps will allow patients to receive more PT and OT, but many consumers will not complete the recommended sessions because of copays. Providers also must strike a balance between patient choice and appropriate guidance to optimal PAC placement. Some organizations combine technology and information sharing to augment the decision-making process.

- Ensocare, an embedded enterprise-wide software designed around EHR interoperability, automates referrals to help case managers and discharge planners identify the most appropriate PAC setting. A tablet brought to the patient's bedside reviews and orders provider choices. Patients then have access to images, videos, quality metrics and testimonials to help them choose among the options.
- Emmi Solutions launched a PAC suite of services in 2017 that includes automated modules patients can use to prepare for their PAC transition by learning what to expect and the role they will play in their own recovery.

OT = occupational therapy; PCMH = patient-centered medical home; PCP = primary care provider; PT = physical therapy.

Sources: Sg2 Interview With Partners HealthCare, February 2018; Frost FS and Passek SD. "6 Clicks AM-PAC Short Form" rationalizes rehab resource use in acute hospital setting. *Frontiers in Rehabilitation*. 2012–2013; Ensocare, OpenPlacement website. Accessed January 2018; Emmi Solutions. Emmi launches portfolio of customized patient engagement solutions for the post-acute market [press release]. September 12, 2017.

OPTIMIZE PAC NETWORKS WITH ADDED COMPETENCIES

Faced with potential capacity constraints, leadership teams may choose to reevaluate whether ownership or partnership is the best avenue through which to become more accountable for this component of the care continuum. While some evidence shows full hospital ownership of PAC facilities or financial joint ventures can boost patient outcomes, Sg2 recommends that health systems instead strengthen collaboration with existing PAC providers. Systems would find it difficult to achieve on their own the expertise and scale possible through a robust network of partners.

Ensure Strategic Alignment

Acute care providers with tiered PAC network approaches geared toward steering patients to higher-quality partners will need to expand those networks. Next-level providers willing to work on quality will need extra support from their acute partners to ensure an adequate high-quality network with enough capacity to meet future demand. Effective collaboration and shared vision for care protocols, performance metrics and cost management are essential.

- **Commitment.** A desire for continuous performance improvement and willingness to collect and share data.
- **Shared accountability.** Willingness to jointly assume clinical and financial risk. Health systems that have built bundled payment programs with SNFs have shared the financial upside to incent their partners to collaborate on cost control measures.
- **Interest in innovation.** Buy-in for adoption of such emerging technologies as virtual health to reduce costs and improve outcomes.
- **Workforce development.** Sharing of clinical workforce and expertise to develop care protocols and provide ongoing training for specific conditions. Some systems provide their own clinicians to round at their partner facilities.

Of Sg2 survey respondents:

34%

said **reducing readmissions** has been their biggest success as a result of building a preferred provider network

14%

identified **improving outcomes** as their biggest accomplishment

Establish Advanced Metrics

PAC partners must think beyond LOS and readmissions to track performance. Data should account for patient acuity across PAC site levels.

Tiered networks can include in their contracts appropriately benchmarked outcomes metrics, and bundled payment arrangements can establish specific metrics by diagnosis or procedure. Overarching performance and utilization metrics, such as SNF days per 1,000, are often used by ACOs.

METRICS TO CONSIDER

- Level of services (eg, rehab, skilled nursing, on-site dialysis)
- 7-day and 30-day risk-adjusted readmission rates
- Unscheduled returns to the ED
- Number of beds and average daily availability
- Acceptance rate and turnaround time
- Patient acuity
- Average length of stay
- Mix and staff-to-patient ratios for RNs, aides and others
- Discharges to home
- Rates and average levels of functional improvement
- Beneficiary appeal rates
- Specialty programs (eg, advanced care certifications, availability of dialysis or ventilator care)
- Relationship building

APPENDIX A

Although overall demand for PAC services will continue to grow with the aging population, the value proposition is changing.

PREPARE FOR NEW PAYMENT MODELS

MODEL	DEFINING CHARACTERISTICS	IMPACT
Medicare Advantage plans	Capitated arrangements for a clearly defined population that incentivize closely aligned payer/provider relationships	Far more narrow, managed PAC networks and significantly reduced utilization
Accountable care organizations	Focus on total cost of care increases accountability for patient outcomes across the continuum	Opportunities for PAC providers and health systems' ACOs to gainshare, incenting seamless transitions and codeveloped metrics
Site-neutral payment	Reimbursement based on patient characteristics rather than site of care	Anticipated reduced payments to IRFs and LTACHs vs higher payments to SNFs, challenging capacity in some markets and heightening need for progressive placement decisions
Bundled payments	Prospective or reconciled retrospective payment for an episode of care that extends 30 to 120+ days beyond the initial IP stay	Opportunities for PAC providers and hospitals to gainshare; proposed "convener" role would identify a single entity to assume financial risk for PAC services Gainsharing with physicians is a key benefit of bundles; this also applies to PAC partners

Sources: Bentley F and Breese E. Medicare Advantage patients less likely to use post-acute care. Avalere. May 9, 2017; Ackerly C. Post-acute care can help accountable care organizations save. RevCycleIntelligence. Accessed March 2018; Center for Medicare Advocacy. Bundling Payments for Post-Acute Care. May 2015; Sg2 Analysis, 2018.

APPENDIX B

Whether it's unified payment or some other model, it's very likely future PAC claims will be paid based on patient characteristics, not site of care. How these changes will impact individual markets will depend on the mix of stays by setting. The following are examples of how payments might shift in the future based on the proposed Medicare PAC prospective payment system.

REPORTING GROUP	CURRENT PAYMENT	PAYMENT UNDER PAC PPS	APPROXIMATE % CHANGE IN PAYMENTS FROM CURRENT TO PAC PPS
Cardiovascular, medical	\$4,588	\$4,611	0%
Cardiovascular, surgical	\$8,010	\$8,548	+7%
Severe wound	\$9,072	\$9,960	+10%
Stroke	\$15,238	\$14,921	-2%
Other neurology, medical	\$5,671	\$5,348	-6%
Orthopedic, medical	\$5,366	\$5,058	-6%
Orthopedic, surgical	\$9,862	\$9,557	-3%

Note: The PAC prospective payment system model is MedPAC's recommended site-neutral payment model. The current payment amounts are based on 2015 data. Sources: Medicare Payment Advisory Commission. *Developing a Unified Payment System for Post-Acute Care*. June 2016; Sg2 Analysis, 2018.

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