Ready, Risk, Reward: Improving Care for Patients with Chronic Conditions

Keys to implementing a patient-centric, physician-aligned care management model.

In an effort to overcome the fragmentation and perverse incentives that discourage coordinated, cost-effective care delivery, healthcare provider members of Premier® are designing and implementing clinically-integrated, high-value networks. To further identify improvement opportunities, Premier analyzed nearly 24 million emergency department visits across 750 hospitals and found that approximately 4.3 million visits associated with patients who have at least one of the common six chronic conditions were potentially preventable. Best practices from Premier and its members suggests that a patient-centric, physician-aligned care management model can be effective in reducing preventable emergency department visits, with a savings potential of up to $8.3 billion annually.

Introduction

As the U.S. population ages, the prevalence of chronic and behavioral health conditions is rising, and people often have more than one. Half of adult Americans have at least one chronic condition and more than two thirds of Medicare patients have two or more[1,2]. People with chronic and behavioral health conditions contribute to higher healthcare costs and account for more than 90 percent of the nation's $3.3 trillion in healthcare spending[3].

In addition to high-volume clinical conditions (i.e., stroke, cancer, Alzheimer's disease, lower back pain), six prevalent chronic conditions contribute to the majority of U.S. healthcare spending. These include asthma, chronic obstructive pulmonary disease (COPD), diabetes, heart failure, hypertension and behavioral health conditions, such as mental health and substance abuse issues (Table 1).

TABLE 1: *Chronic Conditions and Healthcare Spending Snapshot*

Condition	Estimated Annual Condition-Related Costs Per Medicaid Beneficiary[4]	Estimated Total Annual Costs Per Medicaid Patient with Condition[5]	Estimated Number of People with Condition in U.S.
Asthma	$989 - $3,069	$5,724–$9,127	25.7 million[6]
Bipolar Disorder (i.e., Behavioral Health disorders)	$4,811	$16,038	5.7 million[7]
COPD	$3,968 - $6,491	$10,114 - $31,753	11 million[8]
Diabetes	$3,219 - $4,674	$17,515 - $27,888	30.3 million[9]
Heart Failure	$7,031	$29,271 - $51,937	5.7 million[10]
Hypertension	$689	$5,458 - 19,821	75 million[11]

Hospitals, health systems and other healthcare providers are increasingly facing financial pressures, including decreased fee-for-service reimbursements and increased operating costs at a time when payers are driving them to take on more risk. To be successful in today's value-based payment environment, managing the cost of care for patients with chronic and behavioral health conditions is a critical area of focus for healthcare providers.

Value-based payment models, such as shared savings, bundles and other alternative payment models (APMs), require healthcare providers to decrease costs while improving the quality of care for the populations they serve. Costs associated with chronic conditions are of particular concern for healthcare providers participating in two-sided risk payment arrangements with commercial and public payers. High-value networks, such as accountable care organizations (ACOs) and clinically integrated networks (CINs), for instance, must be able to provide high-quality care while efficiently managing the healthcare expenditures of these populations.

Because of this, healthcare providers must consistently deliver evidence-based, high-quality care to patients with chronic conditions to improve overall health outcomes and prevent avoidable emergency department (ED) visits. Preventable ED visits can lead to unnecessary hospitalizations and other high-cost services that erode savings opportunities and result in financial losses. Estimates suggest that up to 27 percent of ED visits in the U.S. could be managed in physician offices, clinics and urgent care centers[12]. Research also suggests that people with chronic conditions need more preventative and proactive care to avert disease progression and the escalation of care, including reliable access to their primary care provider (PCP) for urgent issues rather than presenting to an ED.

Although the value of high-quality primary care services is well known, access to and the use of these services varies dramatically across the US. In its work with more than 120 ACOs, Premier also observed that approximately 30 percent of ED visits occurred for issues that could have been treated in primary or other ambulatory care settings. To delve deeper, Premier leveraged data in the Premier Healthcare Database to examine the financial impact of ED visits associated with the six chronic conditions discussed above at approximately 750 hospitals across the U.S. The findings confirmed variation in the range of ED visits associated with each condition across these hospitals, particularly for behavioral health issues, diabetes and hypertension. The analysis also looked at the lowest quartile (25 percent) of ED visit rates associated with each condition by hospital and identified approximately 4.3 million unique visits outside of the lowest quartile (Table 2). With the average cost for an ED visit set at $1,917 as estimated by the Health Care Cost Institute, if all visits outside of the top performing quartile were preventable healthcare spending could be reduced by $8.3 billion annually[13]. However, even if only 30 percent of these visits were

TABLE 2: *Premier Analysis of Variation in Emergency Department Visits Associated with Chronic Conditions (2017 discharge data from approximately 750 hospitals)*

Chronic Condition	Total Number of ED Visits by Chronic Condition	% Range of ED Visits Associated with Chronic Condition by Hospital	Lowest Quartile % of ED Visits Associated with Chronic Condition	Potential ED Visits Avoided if All Hospitals Achieved Lowest Quartile
Asthma	1,441,083	0.3% - 18.8%	<2.6%	877,097
Behavioral Health Issues	5,700,937	0.8% - 64.4%	<15.2%	2,402,684
COPD	691,650	0.1% - 12.2%	<1.7%	339,906
Diabetes	2,107,417	0.1% - 22.2%	<6.9%	617,746
Heart Failure	70,092	0.03% - 3.9%	<.06%	57,534
Hypertension	4,105,027	0.1% - 48.6%	<13.5%	1,213,543
Total ED Visits Overall	**23,982,070**			

*Note: ED = Emergency Department; * = conditions include principal and secondary diagnoses (International Classification of Diseases, 10th Revision) and thus patients may be counted more than once. When adjusting for patients with multiple conditions, 21.4% of visits were for overlapping conditions, resulting in 4,327,662 unique potentially avoidable visits.*

preventable or could be managed in lower cost settings as Premier observations and the published literature suggests, approximately $2.5 billion could be saved.

The value-based payment movement has ignited efforts to fund new care models that reduce costs while improving health outcomes. For ACOs and CINs, preventing ED visits and improving health outcomes for patients with chronic conditions can mean the difference between significant cost savings or financial losses. Additionally, hospitals and health systems receiving traditional fee-for-service reimbursement are at risk for these patient populations under the Centers for Medicare & Medicaid Services (CMS) Hospital Value-Based Purchasing and Readmissions Reduction Programs, as well as the Merit-based Incentive Payment System.

The U.S. healthcare industry is in transition and there are varying levels of readiness among health systems, ACOs and CINs to comprehensively manage their patient populations. However, Medicare ACOs participating in Premier's Population Health Management Collaborative have outperformed their peers in achieving shared savings[14]. Data and lessons learned from Premier members and other industry experts have demonstrated that implementing a patient-centric, physician-aligned care management model is a critical success factor to improve outcomes and control total healthcare expenditures for patients with chronic conditions.

Hospitals, health systems, ACOs and CINs that develop a standardized, cross-continuum care management model in partnership with PCPs could avoid preventable ED visits and unnecessary hospital admissions, achieve healthier patient populations and receive a higher return on investment (ROI).

A 2016 study by The Robert Wood Johnson Foundation and Premier examined how 19 ACOs managed health outcomes. One of the most important elements in creating a successful ACO was management of the social determinants of health using care management strategies that provide high-touch care to high-cost patients[15].

Financial Impact Of Chronic Conditions

There is a significant opportunity to reduce healthcare spending by proactively managing chronic conditions in the primary care setting. These opportunities exist for both primary and secondary prevention, which can mitigate the development of disease and disease progression. Improving care for patients with chronic conditions in the ambulatory setting could allow healthcare organizations to reduce unnecessary ED visits, hospital admissions and readmissions, as well as achieve cost savings, earn financial rewards and ultimately reduce total healthcare expenditures.

Financial Impact of Chronic Conditions

+ Mental illness treatment costs **$89B** in total health spending.
+ Hypertension-related hospitalizations total **~$113B** each year.
+ Costs for diabetic patients are **2.3X** higher than those without.

Behavioral Health:
~2.4 Billion ED Visits = ~$4.6 Billion Opportunity*

Approximately 18.5 percent of U.S. adults have a mental, behavioral or emotional health disorder, and patients who present with mental health issues account for between 7-10 percent of all ED visits across the country[16]. Mental illness treatment accounts for $89 billion of national healthcare spending[17]. The average patient with psychiatric service needs directly costs an ED $1,198-$2,264 per visit, with many patients presenting dozens of times over a year[18].

Hypertension:
~1.2 Billion ED Visits = $2.3 Billion Opportunity*

Expenses for hypertension-related hospitalizations total about $113 billion each year, and patients with high blood pressure contribute to 2.5 times more in healthcare spending that those without[19,20]. On average, hospitalization costs for patients with a primary diagnosis of ischemic heart disease are estimated at $31,106, as well as $17,298 for those with cerebrovascular disease, and $18,693 for those with neither disease. Hypertension-associated costs for these patients amount to $3,540, $1,133 and $2,254, respectively, when compared to patients without hypertension as a secondary diagnosis[21].

Diabetes:
~618,000 ED Visits = $1.2 Billion Opportunity*

Healthcare costs for Americans with diabetes are 2.3 times greater than those without diabetes. The total costs of diagnosed diabetes have risen to $327 billion in 2017 from $245 billion in 2012[22]. Additionally, hospital stays for patients with diabetes are longer, and more likely to originate in the ED than for patients without diabetes[23]. Moreover, uninsured people with diabetes have 168 percent more ED visits than people who have insurance[24].

** If all hospitals in Premier's analysis had the same rate of ED visits associated with a chronic condition as hospitals in the lowest quartile.*

Causes And Levers To Reduce Preventable Admissions

Not every ED visit or hospitalization is avoidable. There are times when hospital care is warranted and should absolutely be pursued. However, patients with chronic conditions often visit the ED due to preventable exacerbations. Many ED visits and hospitalizations could be prevented with a cross-continuum care management strategy that is focused not only on clinical management but also on social determinants and behavioral health needs.

Causes and Levers to Reduce Preventable Admissions

- Lack of knowledge on how to manage their disease
- Improper use of medications
- Inability to engage in effective self-care
- Low adherence rates
- Lack of access

Behavioral Health: ~24% of all ED visits in Premier's analysis

One of the primary reasons for ED visits associated with mental health conditions is lack of access. Nearly 40 percent of adults with severe mental illness — such as schizophrenia or bipolar disorder — received no psychiatric treatment in the previous year, according to the 2012 National Survey on Drug Use and Health. Among adults with any mental illness, 60 percent were untreated. National shortages of mental health professionals and affordable psychiatric care means that in many communities the ED is where patients seek care. Mental illness sends nearly 5.5 million people to emergency rooms each year, accounting for 4 percent of all visits[25].

Hypertension: ~17% of all ED visits in Premier's analysis

Lifestyle modifications have been found to be effective in managing hypertension, yet only about 35 percent of patients with hypertension receive counseling for diet and 26 percent for exercise, and only 10 percent continue to follow advice concerning lifestyle modifications. Non-adherence and persistence with prescribed antihypertensive medications is also a problem that contributes to suboptimal rates of blood pressure control. It is estimated that half of patients discontinue drug treatment after one year. This problem can be addressed in part by increased attention from providers in identifying barriers to medication adherence and engaging patients in treatment decisions. One study investigating how providers assess antihypertensive medication adherence revealed that patients were not asked if they were taking their medication in 39 percent of encounters[26].

Diabetes: ~9% of all ED visits in Premier's analysis

Research has shown that hospital admissions due to poor glycemic control are often preventable, and due to factors such as a patient's inability to fill an insulin prescription (12.5 percent of admissions), not taking insulin correctly as prescribed (14 percent), lifestyle choices including diet and exercise (26.5 percent), and lack of knowledge about diabetes self-care (15 percent)[27].

The Institute of Medicine defines Patient-Centered Care as: "Providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensures that patient values guide all clinical decisions."

Keys To A Successful Patient-Centric, Physician-Aligned Care Management Model

Given many health systems still receive a large percentage of their revenue from fee-for-service payments, it is not uncommon to experience challenges in facilitating smooth patient transitions to ambulatory care or community settings. However, today's value-based payment environment represents a significant opportunity for organizations to enhance and integrate inpatient and ambulatory care management efforts, such that patients, and especially those with chronic conditions, experience improved outcomes.

Patients with multiple chronic conditions are generally under the care of multiple physicians. The goal is to align and coordinate care plan strategies with PCPs, including facilitating optimal patient engagement and education, avoiding unintended duplication of services or testing, and ultimately ensuring patients receive the right care, at the right time and in the right place.

There is no one-size-fits-all approach to clinical integration efforts that address patient needs for a given population. However, informed by its work with hundreds of health systems to develop and implement successful high-value networks, Premier has identified several keys to building a unified care management model that is aligned with PCPs, and effectively coordinates care across the continuum.

Healthcare providers must reach consensus on a shared vision, strategy and infrastructure for supporting patients with chronic conditions. Implementing a multidisciplinary team-based approach to care coordination and management will ensure efficient and effective use of resources. Other keys to success include an intense focus on engaging patients and meeting their needs through shared goals, aligned incentives, transparent care plans and integrated technology to support workflows across all sites of care, as well as a strategy to identify patients who would benefit the most using population segmentation/risk stratification algorithms.

Care Management Vision/Strategy/Infrastructure
(Provider engagement, payer contracts, leadership and governance)

Population Segmentation/Risk Stratification
(Ability to define, stratify and target at-risk populations)

Patient Engagement and Activation
(Care planning based on patient's needs and goals)

Multidisciplinary Care Coordination
(Cleary defined roles and responsibilities, care transitions)

Technology and Analytics
(Access to information across the continuum)

Multiple clinicians are involved in care plans, including but not limited to:

- Caregiver
- Case Coordinator
- Coach Navigator
- Complex Care Advisor
- Complex Care Coordinator
- Disease Management Nurse
- Health Coach
- Nurse Advisor
- Population Health Care Coordinator
- Population Health Advisor
- Primary Care Physician
- Transitions Care Coordinator
- Transition Coach
- Transitions Coordinator

Care Management Vision, Strategy and Infrastructure

Establishing a shared vision for care management includes having a true partnership with the provider community, particularly the PCP, enabling physicians to participate in leadership and governance over care management strategies, care model design and contracting decisions. Many organizations have found it beneficial to appoint a single executive leader fully accountable for care management efforts across the system. This role, functioning in a paired leadership partnership with a physician champion, sits alongside other C-suite leaders to ensure alignment with all system priorities.

This often involves moving to a team-based care model, which requires well-defined roles and responsibilities for all team members. Roles must be clearly understood and well-orchestrated to leverage different talents and effectively meet patient needs. Some ACOs have acute care managers shadow ambulatory care managers, and vice versa. It also helps to avoid a fractionated structure where multiple care managers report to different departments and share different nomenclature for titles, often with inconsistent roles and responsibilities.

Continuum-wide care management optimization should, over time, yield ROI. For example, using non-licensed personnel to support patients with chronic conditions and those who have social determinants affecting their health can be an effective strategy for rising risk patients. Organizations should also consider providing chronic care management services to qualifying Medicare patients as a source of additional revenue.

Leaders must understand and develop strategic plans to address both cost avoidance and revenue generation. Therefore, all leaders, including the care management lead and physician champion, should be present when commercial, government and employer contract discussions are taking place. It is essential that leaders assess existing contracts together to maximize care management resources, as well as to align current pay for performance metrics and inform future contract design for quality measures to optimize per patient per month payments and shared savings potential.

Population Segmentation/ Risk Stratification

A challenge for many organizations is the ability to focus efforts on specific high-risk, high-needs patient populations. In order to ensure care managers are not spending time searching for “appropriate” patients, care teams should reach consensus on standardized processes, including risk assessment tools and algorithms, to identify patients who will most benefit from care management services in order to improve health and prevent ED visits.

In addition to adjudicated clinical and claims data from electronic health records (EHRs), some organizations use screening tools to collect information directly from patients, such as social determinants of health (SDOH) or patient activation level. This information helps care teams provide

Valley Health System of Winchester, Virginia, a six-hospital system with 60 physician practices, reduced ED visits for Medicare patients with chronic conditions by 15% in six months.

Valley Health System worked to assess opportunity areas and develop a chronic care management program for Medicare patients who have at least two chronic conditions. Six months after joining the program, ED visits for these patients were reduced by 15 percent and hospitalizations were reduced by 14 percent. Keys to success included provider buy-in, a standardized patient enrollment process, integrated technology, assertive education, physician champions, operations support, nurse navigator participation, accurate documentation and patient empowerment.

targeted resources to support SDOH needs and identify patients most likely to engage in self-care by adhering to a care plan. Regardless of the tool used, results from risk stratification and population segmentation algorithms should be actionable and incorporated into workflows that support the goals of the care management strategy.

Historically, neither hospitals nor physician practices have had the technology or data to do this work. However, in recent years, there has been considerable acceleration in the development of data platforms to integrate disparate data sources and enable risk stratification capabilities. In addition, the recent emergence of predictive analytics and ongoing development work to create tools that identify rising risk populations have allowed providers to further focus on the patients who are likely to have adverse outcomes in the future.

Patient Engagement and Activation

Having access to a longitudinal, individualized care plan is another important area of focus to improve care for patients with chronic conditions. Patients with chronic conditions often need hands-on assistance, where care managers, PCPs and coaches empower them through a plan of care, education and access to community resources. Having a clear strategy to ensure patients have reliable access to the appropriate level of care can decrease unnecessary visits to the ED and subsequent hospitalizations. Expanding PCP access for example, is essential to include upstream, preventative support for patients.

Many ACOs have established themselves as the central hub to enable community organizations and PCPs to more effectively meet the needs of patients. This includes teaming with employers and local gyms to offer exercise and nutrition-based counseling[28]. Others have established free clinics, where food is available, to reduce ED visits for non-medical needs, as well as partnered with community paramedicine programs to build 911 services to support at-risk patients and facilitate home visits to reduce potentially preventable admissions. Creative economic incentives can also help to engage patients in chronic disease care. Several health systems are providing free generic drugs for the treatment of a chronic disease if a patient is engaged and active in their care management program

Southcoast Health Network, a four-hospital system that operates a Medicare Shared Savings Program ACO and a Medicaid ACO, reduced revisits to the ED by 14.1% and hospital readmissions by 25.5% for multi-visit patients.

Premier worked with leaders at Southcoast Health Network on a transformation initiative that focused on readying its acute care hospitals for ACO models, improving appropriate hospital use and enhancing behavioral health support. A bulk of its patients had 10 or more ED visits per year and more than 60 percent of patients had a behavioral health condition. After a thorough investigation into why these patients may be coming into the ED, Southcoast invested in the people, supplies, space and technology needed to revitalize and transform care for these patients. Two years after implementing the program, Southcoast lowered 30-day revisits to the ED by 14.1 percent and 30-day inpatient readmissions by 25.5 percent. Keys to implementation included consistent invitations to assist patients, including home visits and phone calls; consistent staff assignments; working with providers, family members and community partners on traditional care management efforts; open internal communications around education and successes; and daily interdisciplinary team huddles. Critical success factors included identifying social care needs and helping patients connect with community resources; addressing substance abuse treatment; standardizing care plans; expediting supportive care services; and connecting with patients in skilled nursing facilities, rehab and behavioral health settings, as well as resuming support in those settings upon discharge.

in coordination with their primary care provider. Additionally, some organizations use group appointments, mobile clinics and extended hours to ensure patients can access care when needed.

Multidisciplinary Care Coordination

Care coordination is one of the main goals of clinical integration. However, multiple people are often assigned to follow up with patients after admissions, which can be confusing for the patient, especially those with behavioral health conditions. Helping staff understand the roles and responsibilities of the care manager and articulating new roles that have been established to support care management across the continuum is essential. In essence, there must be a clear strategy to coordinate the coordinators.

It is important for leaders to cultivate positive physician partnerships by demonstrating value- and team-based care. A deliberate PCP and care manager engagement strategy should be employed, including routine meetings that foster information exchange and support patient transitions and determine who ultimately has responsibility for the patient.

The transition from the hospital to the next level of care or the home is a vulnerableand stressful time for patients, and can result in readmissions if not coordinated well. Transitioning a patient out of the hospital requires a structured and reliable, high-quality handover that is standardized to include consistent, timely and organized coordination of care among team members. It is critical to conduct a medication reconciliation, and ensure the patient knows who their PCP is as well as what to do for follow-up care. Securing a timely follow up appointment with the PCP within two days following hospitalization has proven to reduce the incidence of readmission[29].

Additionally, once goals are met, and a patient can care for themselves, it is important that the care team reaches consensus on graduation criteria to create capacity for other patients. This includes building a positive relationship with the patient and having confidence they know the best way to access services in the event they experience a problem or have a question or concern.

Technology and Analytics

Once a care management infrastructure and model is designed, successful health systems thoroughly assess their technology capabilities to support it, within the context of their broader population health management efforts. This helps leaders discern where there are gaps and where changes and investments are warranted.

Technology that can customize care management assessments helps to facilitate timely communication of critical information, avoid lengthy and cumbersome questions, and enable transparency of care to avoid the duplication of work. Synchronization of patient segmentation/risk stratification algorithms also provides more efficient workflows by automating worklists. ACOs, for instance, can enhance population segmentation efforts by linking patients to tailored interventions, as well

Henry Ford Allegiance Health, a 475-bed health system in Jackson, Michigan, saved $430K.

When Henry Ford Allegiance Health experienced an increase in multiple admissions to the ED for reasons related to behavioral health, the health system worked with Premier to address the needs of the community and the hospital. After assessing the current state of the behavioral health unit and creating measurable objectives, the health system developed a cross-continuum care management program to align its behavioral health services with a care coordination process that spanned the continuum of behavioral health services and community resources. Since embarking on its journey, Henry Ford has seen streamlined points of access across the care continuum, along with decreased wait times in the ED. They saw an uptick in contribution margin, reduced opioid overdoses and readmissions, and realized $430,000 in consolidated savings[30].

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as providing appropriate support and resources to help patients meet their goals.

Additionally, payer- and vendor-agnostic IT systems that integrate clinical and claims information can be used to measure and evaluate performance, pinpoint opportunities and enable continuous improvement. Successful organizations develop a robust care management scorecard that includes structural, process, outcomes and balancing measures.

Conclusion

At the end of the day, the care delivery system should be clinically integrated and centered on the patient. High-value networks, such as ACOs, fund this work through value-based payment models, which essentially form a new source of revenue for providers. Because healthy patient populations are now tied to financial rewards, healthcare providers are actively identifying new ways to offer preventative care services in outpatient settings. Premier's analysis reveals that ED visits for patients with chronic conditions vary greatly, representing a major opportunity for healthcare providers to come together and focus on the total medical, behavioral and social needs of these patient populations. Employing a comprehensive patient-centric, physician-aligned care management model is a key element of clinical integration that can reduce unnecessary ED visits and associated expenditures, as well as generate ROI for high-value networks. Therefore, successful care management models can achieve significant savings for the government, while ensuring the future, long-term sustainability of high-value networks and the value-based payment models that fund them.

REFERENCES

1 CMS.gov, Connected Care: *The Chronic Care Management Resource,* (2017), 2.

2 CMS.gov, *Chronic Conditions Among Medicare Beneficiaries,* (2012), 6.

3 CDC.gov, *Health and Economics Costs of Chronic Diseases,* (October 2018).

4 Chapel, John M., et al., *Prevalence and Medical Costs of Chronic Diseases Among Adult Medicaid Beneficiaries,* American Journal of Preventive Medicine, (December 2017).

5 Ibid.

6 CDC.gov, *Asthma Prevalence in the United States,* (June 2014).

7 Depression and Bipolar Support Alliance website, *Bipolar Disorder Statistics,* (January 2019).

8 American Lung Association, *https://www.lung.org/lung-health-and-diseases/lung-disease-lookup/copd/learn-about-copd/how-serious-is-copd.html,* (2015).

9 CDC.gov, *New CDC report: More than 100 Million Americans have Diabetes or Prediabetes,* (July 2017).

10 Mozzafarian D, et al., *Heart disease and stroke statistics—2016 update: a report from the American Heart Association,* (2016), 133:e38-e360.

11 Centers for Disease Control and Prevention, *High Blood Pressure Frequently Asked Questions,* (November 2016).

12 Weinick RM, Burns, et al., *How many emergency department visits could be managed at urgent care centers and retail clinics?,* Health Affairs, (2010).

13 Health Care Cost Institute, *2016 Health Care Cost and Utilization Report,* (2016), 9.

14 Premier, *Medicare ACOs in Premier Population Health Collaborative Outperform Peers by 57% in Achieving Shared Savings,* (November 2017).

15 The Robert Wood Johnson Foundation, *Performance Evaluation: What is Working in Accountable Care Organizations?,* (October 2016).

16 National Alliance on Mental Illness, *Mental Health by The Numbers,* (December 2019).

17 Peterson-Kaiser Health System Tracker, *Spending on mental illness treatment accounts for $89 billion of total health spending,* (2013).

18 Nicks, B.A., et al., *The Impact of Psychiatric Patient Boarding in Emergency Departments,* Emergency Medicine International, (June 2012).

19 Zhang, Donglan, PhD, et al., *Medical Expenditures Associated with Hypertension in the U.S., 2000-2013,* (2017).

20 American Heart Association, *Adults with High Blood Pressure Face Higher Healthcare Costs,* (May 2018).

21 CDC.gov, Hospitalization Costs Associated with Hypertension as a Secondary Diagnosis, Centers for Disease Control and Prevention, (2010).

22 American Diabetes Association, *The Cost of Diabetes,* (March 2018).

23 Healthcare Costs and Utilization Project, *Hospital Stays for Patients with Diabetes,* 2008, (August 2010).

24 American Diabetes Association, *The Cost of Diabetes,* (March 2018).

25 Szabo, Liz, *Cost of Not Caring: Nowhere to Go, USA Today,* (May 2014).

26 Institute of Medicine (US) Committee on Public Health Priorities to Reduce and Control Hypertension, *A Population-Based Policy and Systems Change Approach to Prevent and Control Hypertension,* Washington (DC): National Academies Press (US), (2010), 5.

27 Khan, Hamida, et al., *Exploring Reasons for Very Poor Glycemic Control in Patients with Type 2 Diabetes,* Primary Care Diabetes, (December 2011).

28 The Robert Wood Johnson Foundation, *Performance Evaluation: What is Working in Accountable Care Organizations?,* (October 2016).

29 Tong, Liping, et al., *The association between outpatient follow-up visits and all-cause non-elective 30-day readmissions: A retrospective observational cohort study,* PLOS one, (July 2017).

30 Success Stories, *Henry Ford Allegiance Health,* Premier Inc., December 2017.

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