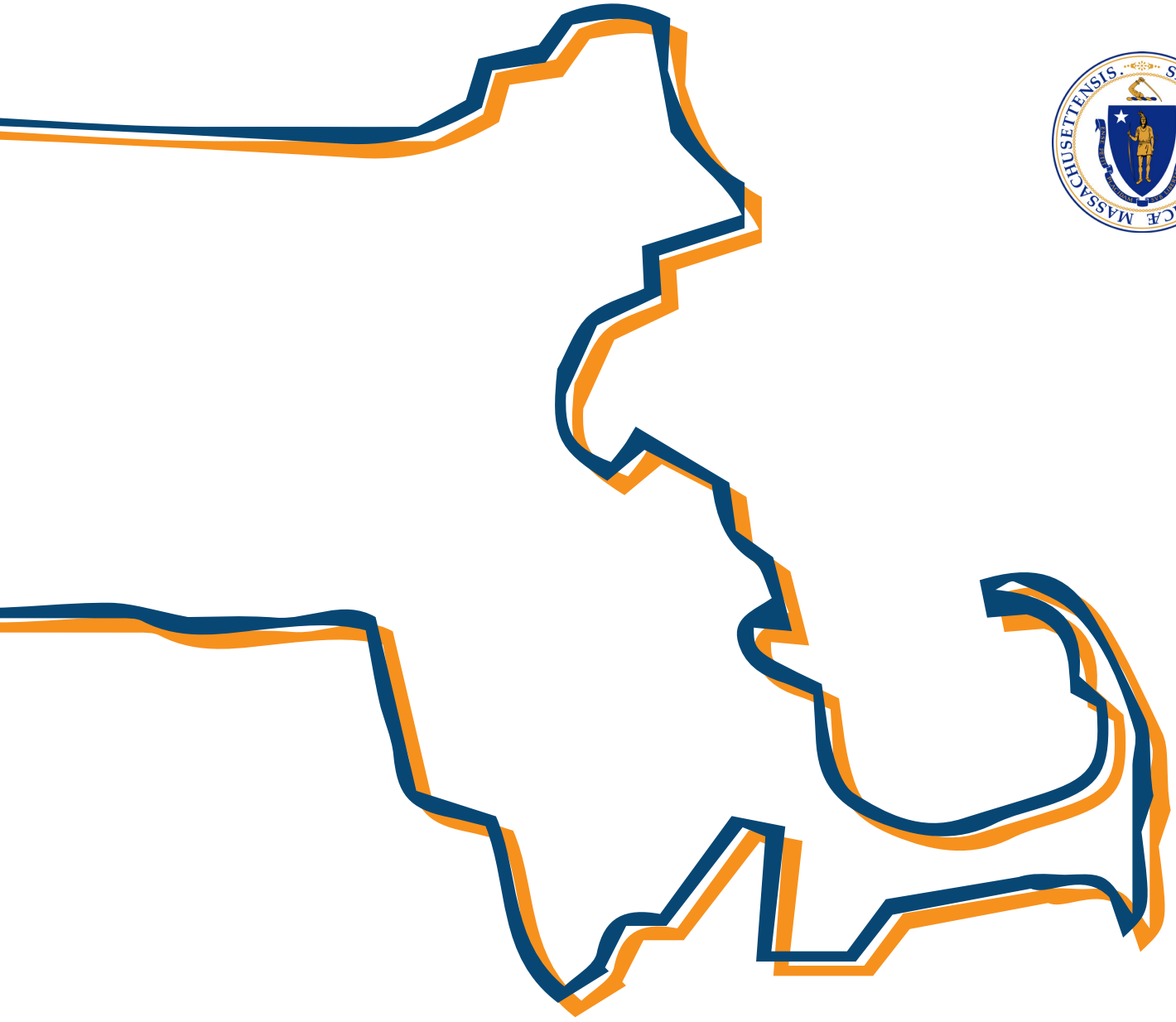
COMMONWEALTH OF MASSACHUSETTS
HEALTH POLICY COMMISSION

2015 COST TRENDS REPORT



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ACA	Affordable Care Act
ACO	Accountable Care Organization
ADL	Activities of Daily Living
AMC	Academic Medical Center
AM-PAC	Activity Measures of Post-Acute Care
APCD	All-Payer Claims Database
APM	Alternative Payment Method
APRN	Advanced Practice Registered Nurse
AQC	Alternative Quality Contract
ASC	Ambulatory Surgical Center
ASP	Average Sales Price
AWP	Average Wholesale Price
BCBS	Blue Cross Blue Shield of Massachusetts
BCPI	Bundled Payments for Care Improvement
CalPERS	California Public Employees' Retirement System
CAUTI	Catheter-associated Urinary Tract Infections
CCJR	Comprehensive Care for Joint Replacement
CHART	Community Hospital Acceleration, Revitalization, and Transformation
CHIA	Center for Health Information and Analysis
CMIR	Cost and Market Impact Review
CMS	Centers for Medicare & Medicaid Services
Connector	Massachusetts Health Connector
CPT	Current Procedural Terminology
C-sections	Caesarian Sections
DOJ	U.S. Department of Justice
DRG	Diagnosis-related Group
E&M	Evaluation and Management
ED	Emergency Department
EHR	Electronic Health Record
ENS	Event Notification Service
FDA	Food and Drug Administration
FFS	Fee-For-Service
FPL	Federal Poverty Level
FTC	Federal Trade Commission
GIC	Group Insurance Commission
GPO	Group Purchasing Organizations
H2H	Hospital to Home
Harbor	Harbor Medical Associates
HCBS	Home and Community-Based
HCCI	Health Care Cost Institute
HCV	Hepatitis C Virus
HDHP	High-Deductible Health Plan
HEN	Hospital Engagement Network
HHA	Home Health Agency

HIT	Health Information Technology
HMO	Health Maintenance Organization
HOPD	Hospital Outpatient Department
HPC	Health Policy Commission
HPHC	Harvard Pilgrim Health Care
HRA	Health Reimbursement Accounts
HSA	Health Savings Accounts
ICER	Institute for Clinical and Economic Research
IRBO	Integrated Risk-Bearing Organizations
IRF	Inpatient Rehabilitation Facility
LOS	Length of Stay
LTCH	Long-Term Care Hospital
LTSS	Long-Term Services and Supports
MCN	Material Change Notices
MCO	Managed Care Organization
MGH	Massachusetts General Hospital
MSPB	Medicare Spending per Beneficiaries
MSSP	Medicare Shared Savings Program
NCQA	National Committee for Quality Assurance
NP	Nurse Practitioner
NQF	National Quality Forum
NTSV	Nulliparous Term Singleton Vertex
OCHOPD	Off-campus Hospital Outpatient Department
PA	Physician Assistants
PAC	Post-Acute Care
Partners	Partners HealthCare
PBM	Pharmacy Benefit Managers
PCC	Primary Care Clinician
PCMH	Patient Centered Medical Home
PCP	Primary Care Provider or Primary Care Physician
PCPRI	Primary Care Payment Reform Initiative
PIP	Performance Improvement Plan
PMPM	Per Member Per Month
PPO	Preferred Provider Organization
QALY	Quality-adjusted Life Year
QHP	Qualified Health Plan
RN	Registered Nurse
RPO	Registration of Provider Organizations
SNF	Skilled Nursing Facility
SOP	Scope of Practice
SQAC	Statewide Quality Advisory Committee
SQMS	Statewide Quality Measure Set
STAAR	State Action on Avoidable Rehospitalizations
THCE	Total Health Care Expenditures
THR	Total Hip Replacement
TKR	Total Knee Replacement
TME	Total Medical Expense

Executive Summary

Consistent with the statutory mandate of the Health Policy Commission (HPC), this 2015 Cost Trends Report presents an overview of healthcare spending and delivery in Massachusetts, opportunities to improve quality and efficiency, progress in key areas, and recommendations for strategies to increase quality and efficiency in the Commonwealth.

Past HPC reports have identified four areas of opportunity: fostering a value-based market; promoting an efficient, high-quality healthcare delivery system; advancing alternative payment methods (APMs); and enhancing transparency and data availability. The HPC continues to emphasize these four areas in its analysis and recommendations.

This Executive Summary presents a concise overview of the findings and recommendations detailed in this report.

FINDINGS

TRENDS IN SPENDING AND CARE DELIVERY

Overview of trends in spending

- Between 2005 and 2014, increases in health insurance premiums have outpaced income gains, consuming more than 40 percent of family income growth over the past nine years.
- Massachusetts' 4.8 percent growth in health care spending in 2014 exceeded the 3.6 percent spending benchmark, largely because of growth in MassHealth spending (driven by enrollment growth) and spending on prescription drugs across all market sectors.
- Despite high growth in prescription drug spending, total per-capita spending growth was under the benchmark in all major market segments, including MassHealth.

Trends in commercial spending

- Continued low rates of growth in commercial spending have narrowed the family premium gap between Massachusetts and the U.S. This gap was $2,000 in 2011 and $1,000 in 2014.
- Hospital and physician commercial spending each grew roughly one percent per commercial enrollee between 2013 and 2014.
- Payers reported that price increases and shifts in the providers used, not changes in overall health care utilization, drove observed spending increases.

Trends in Medicare and MassHealth

- Among beneficiaries with Original Medicare (fee-for-service), Massachusetts spends more on hospital care but less on physician care than the U.S. overall.
- Baseline trends, the extension of MassHealth eligibility under the Affordable Care Act, and a temporary coverage program to address operational difficulties at the Massachusetts Health Connector all contributed to significant MassHealth enrollment growth between 2013 and 2014.
- MassHealth spending accounted for two-thirds (3.2 percentage points) of statewide spending growth between 2013 and 2014, or half of statewide spending growth (2.5 percentage points) if drugs are excluded. By the fall of 2015, the Connector website was functioning well, and MassHealth enrollment had stabilized at 1.85 million members, a 31 percent increase relative to the fall of 2013.

Trends in access, affordability, and quality

- Patient cost-sharing (co-payments and deductibles) increased 4.9 percent between 2013 and 2014. Including other out-of-pocket spending such as over-the-counter medications and uncovered services and providers, 38 percent of residents paid more than $1,000 and 19 percent paid more than $3,000 in cost-sharing in 2014. Patients with certain behavioral health conditions paid a higher percentage of their total health spending out-of-pocket than those with other medical conditions.

- Massachusetts continued to perform well relative to the rest of the U.S. on most measures of quality and access to care and had the highest rate in the nation of insurance coverage in 2014. However, on measures of appropriate hospital admissions and excess readmissions, Massachusetts performed worse than the U.S., and considerable opportunities remain to further improve quality and access as well as population health.

Trends in provider markets

- Massachusetts is characterized by a growing concentration of inpatient care in large systems. Increasingly, physicians are also consolidating into large systems, whether through clinical affiliations, contracting affiliations, or acquisitions. In 2010, 68 percent of primary care physicians were affiliated with large systems; in 2014, this percentage was 76 percent. The acquisition of physician practices by hospital systems may also result in the addition of outpatient facility fees, an important trend to monitor.

Prescription drug spending

- Prescription drugs were a major area of spending growth in 2014, after years of low growth, with a 13 percent per-capita spending increase in Massachusetts between 2013 and 2014, slightly higher than the U.S. growth rate. One-third of all spending growth in Massachusetts (1.6 percentage points) was attributable to prescription drugs. Growth was driven by the entry of new drugs, price increases, and a low rate of patent expirations.
- New, effective, but high-cost drugs for the Hepatitis C virus were a particular driver of drug spending growth in 2014.
- Spending on specialty drugs, which typically cost more than $6,000 a year, grew from 26 percent to 34 percent of Massachusetts' drug sales between 2010 and 2014.
- Many top drug classes have had double-digit spending increases each year. For oncology drugs, the therapy class with the highest spending in Massachusetts and the U.S., spending in Massachusetts grew to almost $700 million in 2014, an increase of 12.3 percent from 2013.
- Given the current national regulatory framework, many aspects of drug spending are outside the direct control of payers and providers in Massachusetts, and change would require federal action. However, levers for change are available at the state level, some requiring new legislation.

Hospital outpatient utilization and spending

- Relative to the national average, hospital outpatient visits are 50 percent more frequent in Massachusetts, and hospital outpatient spending has been growing rapidly, with an average annual per-capita growth rate of six percent in Medicare and three percent in commercial insurance between 2010 and 2014. Some services have shifted from inpatient to outpatient settings, while others have shifted from non-hospital to hospital outpatient settings.
- Outpatient surgery accounts for more than half of the growth in hospital outpatient spending. In a subset of five high-volume surgical procedures that could be performed in either the outpatient or inpatient setting, the share performed in the outpatient setting grew from 48 percent in 2011 to 70 percent in 2013. Spending for these procedures would have been about 15 percent higher without the shifts in setting.
- Payments for standard services and medical tests are substantially higher in the hospital outpatient department, compared to physician offices and other non-hospital settings. For example, the median price of a colonoscopy in a hospital outpatient department was 56 percent above the median price in a non-hospital setting.

OPPORTUNITIES TO INCREASE QUALITY AND EFFICIENCY

Variation among providers in prices and episode costs

- Prices vary significantly among providers, and such variation has not meaningfully decreased over time. A substantial amount of the variation in inpatient hospital prices is not related to measures of quality or other value-based factors. Rather, the higher prices some providers receive appear to reflect market leverage and negotiating power. This extensive price variation, combined with increasing concentration of volume in high-cost providers, leads to higher spending and persistent inequities in the distribution healthcare resources.
- Commercial spending for episodes of care can also vary extensively. For low-risk pregnancies, commercial spending for an episode of care varied from below $12,300 at several less expensive hospitals to $18,500

at the most expensive hospital. While variation in episode spending could result from price variation, practice variation, or a combination of the two, the HPC found that the variation was overwhelmingly driven by the price of the procedure.

- Unnecessary and avoidable utilization also drive high costs. In Massachusetts, the rate of Caesarian section for first-time mothers was 26.2 percent—above the target rate of 23.9 percent proposed as part of the federal government's Healthy People 2020 initiative. Unnecessary Caesarian sections increase spending and increase health risks for mother and baby.

Avoidable hospital use

- All-cause readmissions in Massachusetts have improved slightly, consistent with national trends. However, based on Medicare data, Massachusetts readmission rates remain worse than the national average, and between October 2015 and September 2016, 78 percent of Massachusetts hospitals were penalized by Medicare for readmission rates in excess of the national average.
- Rates of preventable inpatient hospital use improved slightly between 2013 and 2014, but rates of preventable hospitalizations in lower-income communities (median family income below $52,000) remained twice as high as rates in higher income communities (median family income > $87,000), a troubling indicator of disparities in care.
- While overall ED use declined slightly between 2010 and 2014, visits associated with a primary behavioral health diagnosis increased sharply (24 percent over four years). Certain regions of the Commonwealth had markedly high rates of behavioral-health related ED visits, as did certain demographic segments, and seven percent of ED visitors accounted for 33 percent of visits.
- Emerging technologies offer promise to support population health management and address hospital overutilization. Event notification services, other facets of health information exchange, and telemedicine in particular, have been effective in other states comparable to Massachusetts.

Access to primary care

- Despite the state's high numbers of physicians per capita, the number of primary care providers per capita varies 30-fold across the state and is lower in more rural areas; 500,000 residents live in federally-identified areas with a shortage of primary care providers (PCPs).
- Nurse practitioners (NPs) provide care at comparable quality and lower cost than physicians, and are more likely to practice in rural areas and to serve Medicaid patients. Relative to other states, Massachusetts requires high levels of physician oversight for NPs, which can limit access to care and add unnecessary costs.
- In Massachusetts, 25 percent of primary care providers practice in NCQA-recognized patient-centered medical homes, a rate considerably above the national average of 15 percent.

Maximizing value in post-acute care

- Massachusetts continued to use post-acute care at a higher rate than the national average. While post-acute patterns have changed little overall between 2010 and 2014, the use of institutional post-acute care after total joint replacement declined over these years in 49 of the 57 hospitals for which rates are available.

PROGRESS IN ALIGNING INCENTIVES

Alternative payment methods

- Alternative payment methods (APMs) offer incentives that support value and reward high-quality care. Statewide, the rate of APM coverage increased eight percentage points between 2012 and 2014, with differences among payers. In 2014, the three major commercial payers met the HPC's 2016 target of at least 60 percent of each payer's HMO lives covered by APMs.
- In 2014, rates of APM adoption within commercial preferred provider organizations (PPOs) remained low. However, at the HPC's 2015 Health Care Cost Trends Hearing, the state's largest commercial payer announced an agreement with four major providers whereby it would use APMs to pay for PPO members beginning in 2016. The change will affect one-third of that payer's total PPO population. More progress is needed to meet the Report's target of one-third of all PPO lives covered by APMs by 2017.
- Developing a comprehensive care delivery and payment reform model that promotes coordination of care, improves population health, integrates behavioral health and long-term supports and services, and enhances accountability for total cost of care is a top priority for the Executive Office of Health and Human Services. In developing this strategy, MassHealth has

initiated an intensive stakeholder engagement and policy development process with the goal of launching a range of ACO models at scale over the next one to two years.

- Sixty-two provider groups or organizations in Massachusetts participate in Medicare's Bundled Payments for Care Improvement Initiative, but bundled payments covering episodes of care have not yet taken hold among commercial payers in Massachusetts.

Demand-side incentives

- As required by Chapter 224, commercial payers launched transparency tools in 2014, offering consumers information on the costs and quality of care available from different providers. However, there has been limited utilization of these tools to date; major payers reported fewer than 50 inquiries per 1,000 members. Many tools do not yet include information on prices for behavioral health visits or measures of the quality of care.
- High-deductible health plans (HDHPs) surpassed tiered network plans in the share of market covered. HDHPs have lower premiums than tiered products, but often lead to indiscriminate reductions in utilization, especially among low-income members. Tiered network products could be strengthened by widening the cost-sharing differentials between tiers and using consistent quality metrics for tier placement.

RECOMMENDATIONS

In light of these findings, as well as the HPC's other analytic and policy work throughout the year, this Report makes the following recommendations and commitments to promote the goals of Chapter 224:

Recommendations to foster a value-based market

1. Payers and employers should continue to enhance strategies that enable consumers to make high-value choices, including increasing transparency of comparative prices and quality.
2. The Commonwealth should enhance transparency of drug prices and spending, and payers should consider opportunities to maximize value.
3. The Commonwealth should take action to implement safeguards for consumers and improve market function related to out-of-network billing practices.
4. The Commonwealth should take action to equalize payments for the same services between hospital outpatient departments and physician offices.
5. The Commonwealth should act to reduce unwarranted variation in provider prices. The HPC will undertake further research and analysis and will convene stakeholders to discuss specific policy options.

Recommendations to promote an efficient, high-quality care delivery system

6. The Commonwealth should continue to focus on enhancing community-based, integrated care and reducing the unnecessary utilization of costly acute settings.
7. The Legislature should act to remove scope of practice restrictions for Advanced Practice Registered Nurses (APRNs).
8. The Commonwealth should be a national leader in use of enabling technologies to advance care delivery transformation through expansion of health information exchange, telehealth, and other digital health innovations.

Recommendations to advance alternative payment methods

9. Payers and providers should continue to focus on increasing the adoption and effectiveness of APMs in promoting high quality, efficient care.
10. The Commonwealth should develop alternative payment models to catalyze delivery system reform in MassHealth. This is a top priority of the Executive Office of Health and Human Services and the HPC strongly supports this effort.
11. Payers and providers should seek to align technical aspects of their global budget contracts, including quality measures, risk adjustment methods, and reports to providers. The HPC will convene providers to continue this important work.

Recommendations to enhance transparency and data availability

12. The Commonwealth should develop a coordinated quality strategy that is aligned across public agencies and market participants.
13. CHIA should continue to improve and document its data resources and develop key spending measures.

SECTION I: INTRODUCTION

Introduction

1

Created by Chapter 224 of the Acts of 2012, the Health Policy Commission (HPC) is charged with monitoring healthcare spending growth in Massachusetts and providing data-driven policy recommendations (see **Sidebar: "What is the role of the Health Policy Commission?"**). In this third annual Cost Trends Report, the HPC outlines spending trends, opportunities, and foundations for improvement in the Commonwealth's second full year under the healthcare cost growth benchmark.

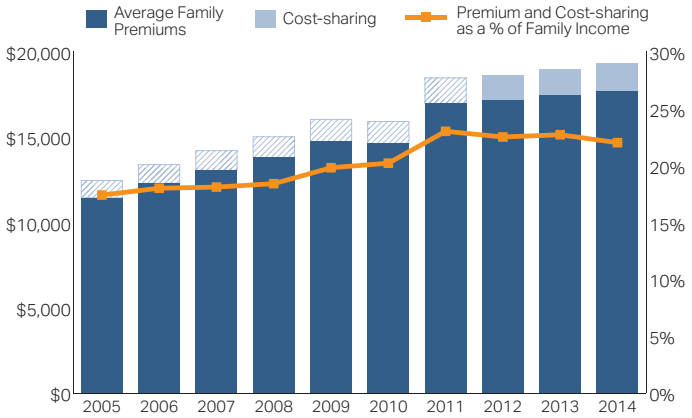
The HPC's work is driven by the following principles:

1. **Fostering a value-based market** in which payers and providers openly compete to provide services and in which consumers and employers have the appropriate information and incentives to make high-value choices for their care and coverage options;
2. **Promoting an efficient, high-quality, healthcare delivery system** in which providers efficiently deliver coordinated, patient-centered, high-quality health care that integrates behavioral and physical health and produces better outcomes and improved health status;
3. **Advancing alternative payment methods** (APMs) that support and equitably reward providers for delivering high-quality care while holding them accountable for slowing increases in future healthcare spending;
4. **Enhancing transparency and data availability** necessary for providers, payers, purchasers, and policymakers to successfully implement reforms and evaluate performance over time.

The rising cost of health care places increasing pressure on consumers, businesses, and governments. **Exhibit 1.1** shows average family premiums in Massachusetts combined with typical cost-sharing amounts, as a percentage of median family income in the state.

Exhibit 1.1: Family premiums, cost-sharing, and family income in Massachusetts, 2005 – 2014

Dollars are nominal in the year shown



Note: Cost-sharing amounts are approximate from 2005-2011.

Source: American Community Survey (income), Agency for Healthcare Research and Quality (premiums) and Center for Healthcare Information and Analysis (cost-sharing)

Average family premiums for employer-sponsored health insurance in Massachusetts rose from $11,400 in 2005 to near $17,000 in 2011. Including typical amounts paid out-of-pocket in cost-sharing, total family health care outlays rose from 17 percent to 23 percent of median family income over that period.[i] Since 2011, healthcare spending has grown relatively slowly and that percentage has declined slightly to 22 percent. Still, premiums and out-of-pocket spending for an average family in Massachusetts approached $20,000 in 2014, more than the annual income of a full-time minimum wage worker.[ii]

i These spending figures do not include additional spending on health care for services not covered by insurance such as over-the-counter medicines, spending on non-covered services, and dental and vision care.

ii Employer contributions to health insurance premiums (and in most cases, employee contributions as well) are excluded from taxation, so these amounts are effectively lower than the premium and cost-sharing amounts shown. However, lower income people face lower marginal tax rates so the exclusion from taxation can have little to no benefit for families who face the largest burden of high health care costs.

From 2005 to 2014, premiums and cost-sharing grew by roughly $6,800 per year while median family income grew by $16,300 per year. Roughly 40 percent of a typical family's income gain was consumed by higher healthcare spending.

Recognizing the impact of this crowd-out effect, Chapter 224 set a statewide benchmark for sustainable healthcare spending growth. From 2013 to 2014, the growth in total health care spending in Massachusetts was 4.8 percent, exceeding the state's benchmark (set at 3.6 percent) for the first time.

Through the analyses and research developed for this Report, the HPC sought to enhance its understanding of spending trends and market dynamics that impacted the Commonwealth's ability to meet the benchmark in 2014 and identify opportunities for improving the quality and efficiency of the Massachusetts health care system moving forward.

HOW THIS REPORT IS ORGANIZED

The HPC's 2015 Cost Trends Report is informed by annual reports of the Attorney General's Office (AGO) and the Center for Health Information and Analysis (CHIA), as well as by testimony submitted during the HPC's 2015 Health Care Cost Trends Hearing.

In this Report, **Section II (Chapters 2 through 6)** compares healthcare cost growth in 2014 against the Chapter 224 benchmark, offers an overview of trends in spending and provider markets, and closely examines two key trends: 1) spending on prescription drugs and utilization and 2) spending associated with hospital outpatient services. To conclude, the Report discusses the outlook for future success in meeting the benchmark.

Section III (Chapters 7 through 10) examines opportunities to improve quality and efficiency of care—including variation among providers in spending and practice patterns, with a focus on maternal care; avoidable hospital utilization; improving access to primary care; and maximizing value in post-acute care.

Section IV (Chapters 11 and 12) continues discussion from the 2014 Cost Trends Report on progress made in two key areas of focus: 1) to improve the incentives facing the providers of care via alternative payment models (APMs) and 2) to improve the opportunities for employers and consumers to save money by making high-value care choices via demand-side incentives.

Section V (Chapter 13) presents a dashboard of key metrics from the report and contains HPC's recommendations for accelerating efficiency in healthcare spending in Massachusetts and improving quality of care.

This Report builds on the HPC's previous work to promote public policies that work toward efficient patient-centered care, and strengthen and accelerate ongoing reform efforts.

What is the role of the Health Policy Commission?

The Health Policy Commission (HPC) is an independent state agency established through Chapter 224 of the Acts of 2012, the Commonwealth's landmark cost-containment law. The HPC, led by an 11-member board with diverse experience in health care, is charged with developing health policy to reduce overall cost growth while improving the quality of care, and monitoring the health care delivery and payment systems in Massachusetts. The HPC's mission is to advance a more transparent, accountable, and innovative health care system through independent policy leadership and investment programs. The HPC's goal is better health and better care at a lower cost across the Commonwealth.

The HPC's staff and various policy committees engage in healthcare market research through the publication of annual reports on cost trends; market monitoring through notices of material change and cost and market impact reviews; market regulation through the creation of criteria for accountable care organizations (ACOs) and the Registration of Provider Organizations (RPO) Program; and market investment through the $120 million Community Hospital Acceleration, Revitalization, and Transformation Investment Program (CHART). As part of Chapter 224, the HPC operates the Office of Patient Protection, which administers healthcare consumer protections and monitors access to care. Through these and other activities, the HPC strives to monitor and support progress towards meeting the healthcare cost growth benchmark, while improving quality and access in patient care.

SECTION II: TRENDS IN SPENDING AND CARE DELIVERY

Overview of Trends in Spending and Care Delivery

2

Chapter 224 of the Acts of 2012, the Massachusetts health care cost containment law, established a benchmark against which annual healthcare spending growth can be evaluated. As Massachusetts has among the highest per-capita health care spending in the nation, the Commonwealth recognized that keeping future spending growth under control was key to easing this burden on households, businesses, and the state economy. In keeping with that mandate, Chapter 224 directs the Health Policy Commission (HPC) and the Center for Health Information and Analysis (CHIA) to annually monitor healthcare spending growth relative to economic growth. The benchmark is tied to potential gross state product, with the intention of maintaining a roughly constant share of the state economy devoted to healthcare spending. The benchmark was set at 3.6 percent annually for the period from 2013 to 2017.

Each year, the benchmark is compared to the change in a measure of spending growth, Total Health Care Expenditures (THCE, as defined by CHIA). per state resident. THCE aims to capture the bulk of healthcare spending in the state in a manner that is comparable from year to year. It includes healthcare spending incurred by individuals, the state, and the federal government via Medicaid (MassHealth) and Medicare, as well as commercial spending, as reported by health insurers to CHIA.[i] This chapter discusses the state's performance relative to the benchmark in 2014 as well as other broad trends affecting healthcare spending and the overall health care system in Massachusetts.

i The commercial spending figures include roughly 3.4 million (or 80 percent) of the estimated 4.2 million commercially-insured residents in Massachusetts. Those not included are largely employees whose employers are headquartered out-of-state (including the Federal Government) and who do not submit detailed claims and spending information to CHIA. THCE also excludes health spending not covered by insurance such as over-the-counter medications and privately-paid dental and nursing-home expenses.

STATEWIDE SPENDING GROWTH, 2013-2014

CHIA reported initial[ii] per-capita growth in total spending (THCE) in Massachusetts from 2013 to 2014 to be 4.8 percent, exceeding the state's benchmark of 3.6 percent. Total spending increased from the revised, final figure of $51.3 billion in 2013 to a preliminary figure of $54.0 billion in 2014, while the state's population was estimated to grow from 6.709 million to 6.745 million residents, resulting in an increase in per-capita spending from $7,641 to $8,010. The increase in 2014 was driven by a 13 percent increase in MassHealth spending (including CommCare and accompanied by a 14 percent increase in combined enrollment) and a large increase in spending on prescription drugs for both public and private payers.[iii] Because of the large impact of these two factors, per-capita THCE would have grown only by 1.5 percent if MassHealth spending had grown at the 2012-2013 rate

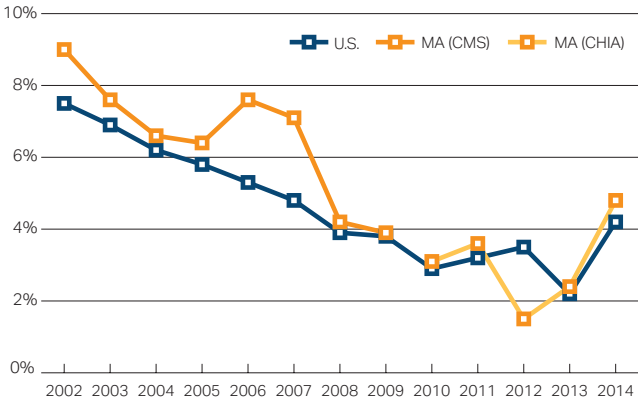
ii CHIA's assessment of 2013-2014 spending growth, published in September, 2015 is based on data submitted five months after the close of the 2015 calendar year, including payers' estimates for claims completion and quality and performance settlements. Final THCE is published a year later. There is considerable volatility between the two assessments. In September, 2015, CHIA updated the 2013 (and 2012) spending and population figures that had been initially reported in September 2014. At that time, CHIA had reported that per-capita THCE grew by 2.3 percent from 2012 to 2013, or from $7,376 to $7,550 (in total, from $49.0 billion to $50.5 billion). In CHIA's September 2015 report, the 2012 and 2013 finalized spending totals were roughly $620 million and $730 million higher, respectively, which, combined with population revisions (increases of 10,500 and 16,000, respectively) reported by the U.S. Bureau of the Census, resulted in revised THCE per capita of $7,459 in 2012 and $7,641 in 2013—a 2012-2013 increase of 2.4 percent rather than the 2.3 percent reported in 2014. Thus, while the 2012-2013 aggregate per-capita spending growth remained relatively unchanged, the volatility in the spending figures is noteworthy. For example, CHIA reported double-digit changes to 2012-2013 per-member spending growth for a number of commercial payers in their updated 2015 report. This volatility has implications for performance improvement plans (PIPs).

iii See "Growth in MassHealth enrollment and spending, 2013-2015," below for more details. Spending and enrollment measures from the Center for Health Information and Analysis total health care expenditure data.

and prescription drug spending had increased by 3.6 percent – this Report discusses each of these factors in detail.

This increase in spending per state resident is slightly above the Centers for Medicare and Medicaid Services' (CMS) estimate of 4.2 percent per-capita growth in personal healthcare spending in the U.S. for 2014 (see **Exhibit 2.1**).[iv]

Exhibit 2.1: Annual growth in per-capita healthcare spending, Massachusetts and the U.S., 2002 – 2014



Note: U.S. data uses personal health expenditures (Centers for Medicare & Medicaid Services) divided by the U.S. population. Massachusetts data uses personal health expenditures (Centers for Medicare & Medicaid Services) through 2009, changes in total medical expenditures per member per year from the Center for Health Information and Analysis for 2010 and 2011, and changes in total health care expenditures per capita from the Center for Health Information and Analysis from 2012-2014.

Source: Centers for Medicare and Medicaid Services; Center for Health Information and Analysis

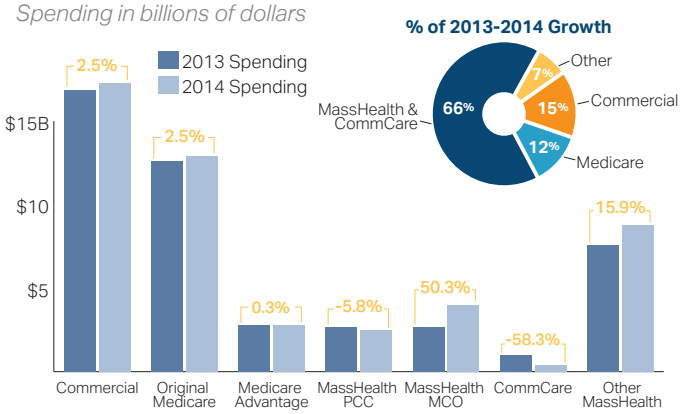
Spending growth accelerated in 2014 in the U.S. as well as Massachusetts, with analysts attributing the national growth to the Affordable Care Act (ACA) coverage expansion, increased prescription drug spending, and economic improvement.[1] The first two factors (and possibly the third) are responsible for some of Massachusetts' spending growth as well. Spending in each market segment in Massachusetts between 2013 and 2014 is shown in **Exhibit 2.2**.

The largest spending increases between 2013 and 2014 occurred within MassHealth. Commonwealth Care (CommCare) spending declined by more than $500 million as it was phased out in 2014; many of its members transitioned from CommCare to MassHealth managed care organizations (MCOs) in 2014. MassHealth is discussed in more detail later in this chapter.

Spending for a given category of coverage can grow due to growth in number of enrollees as well as growth in spending per enrollee. When the HPC considers per-enrollee spending growth in 2014 (in which case the agency limits MassHealth to the primary care clinician (PCC)/MCO programs which provide primary insurance and add in CommCare, which is not a MassHealth program, due to the transfer of most members to MassHealth in 2014), spending growth for each major category of spending was below the benchmark (see **Exhibit 2.3**).[v]

Exhibit 2.2: Massachusetts healthcare spending, by payer type, 2013 and 2014

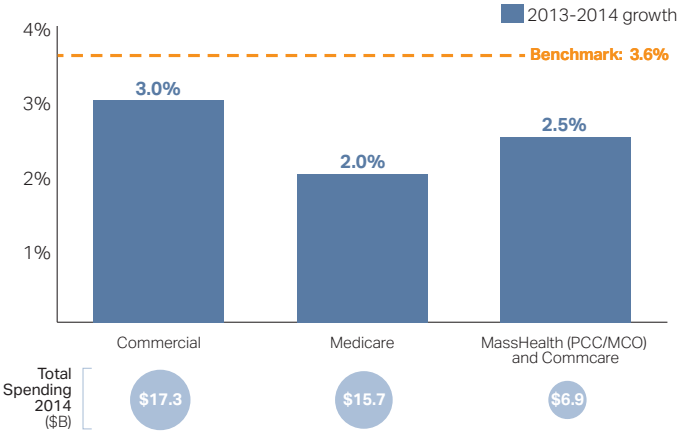
Spending in billions of dollars



Source: Center for Health Information and Analysis

Exhibit 2.3: Growth in per-capita spending, by broad payer type, 2013 – 2014

Percentage growth per member from previous year



Note: Commercial spending excludes actuarial completion of partial-claims.

Source: Center for Health Information and Analysis

Although performance of some individual payers and providers did exceed the benchmark (see **Sidebar: "Performance Improvement Plans"**), this low per-capita growth within each sector of the Massachusetts health system is particularly noteworthy given the large increase in prescription drug spending, discussed in more detail in **Chapter 4: "Prescription Drug Spending."**

iv The estimate of 4.2 percent is based on the subset of national health spending called 'personal health care expenditures,' which are most similar to THCE.

v MassHealth Fee-for-Service is not shown because unique enrollees cannot be determined for some spending in that category.

Performance Improvement Plans

Beginning in 2016, Performance Improvement Plans (PIPs) will provide a key mechanism under Chapter 224 for the HPC to identify, monitor, and assist payers and providers whose cost growth may threaten the ability of the state to meet the health care cost growth benchmark.

Annually, CHIA will provide the HPC a list of payers and providers whose cost growth, as measured by health status-adjusted Total Medical Expenses (TME), is considered excessive and threatens the benchmark. All identified payers and providers will receive notice from the HPC. Some of the identified payers or providers may be required to file a PIP where the HPC has confirmed concerns about the entity's cost growth and found that the PIP process could result in meaningful, cost reducing reforms. The HPC also has the option to conduct a cost and market impact review of any of the provider organizations identified by CHIA if the state's total healthcare expenditures exceed the cost growth benchmark.

If required to file a PIP, the payer or provider must develop a PIP and propose it to the HPC for approval. The PIP must identify and address the causes of the entity's cost growth and include action steps, measurable outcomes, and an implementation timetable of no more than 18 months. The PIP must be reasonably expected to succeed and to address the underlying causes of the entity's cost growth. Implementation of a PIP will involve regular reporting by the payer or provider as well as monitoring and assistance from the HPC.

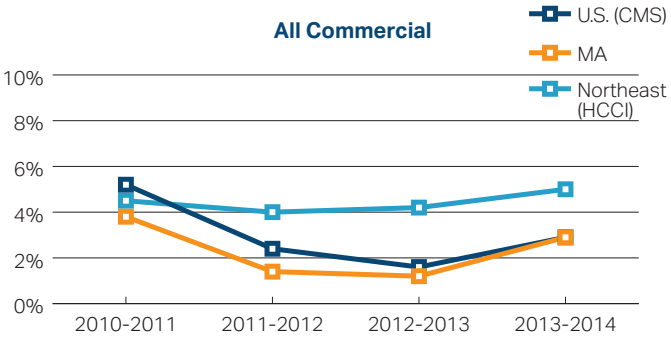
COMMERCIAL SPENDING GROWTH, 2010 – 2014

In 2012 and 2013, growth in commercial spending in Massachusetts was below U.S. commercial growth. In 2014, the 2.9 percent rate of per-enrollee growth in commercial spending in Massachusetts[vi] was in line with national rates as reported by CMS, though it remained significantly below a different, claims-based source which reported 3.4 percent growth nationally and 5 percent in the Northeast region in 2014 (see **Exhibit 2.4**).[vii]

vi Although the rate of commercial spending growth was reported as 3 percent in **Exhibit 2.3**, that figure includes "partial-claims" enrollees—those for whom CHIA does not receive full detailed spending for all claims. For the analyses in **Exhibits 2.4** and **2.6**, the HPC reports only full-claims members, for whom there is comprehensive information on spending.

vii The primary source of U.S. data used in this Report is the private health insurance subset of the Personal Health Expenditures data released on 12/2/15. The secondary source used is from the Health Care Cost Institute (HCCI). The HCCI's figures are based on a national sample contributed by large commercial insurers and representing some 27 percent of all commercial enrollees in employer-sponsored insurance in the U.S.

Exhibit 2.4: Annual growth in commercial spending per enrollee, 2010 – 2014



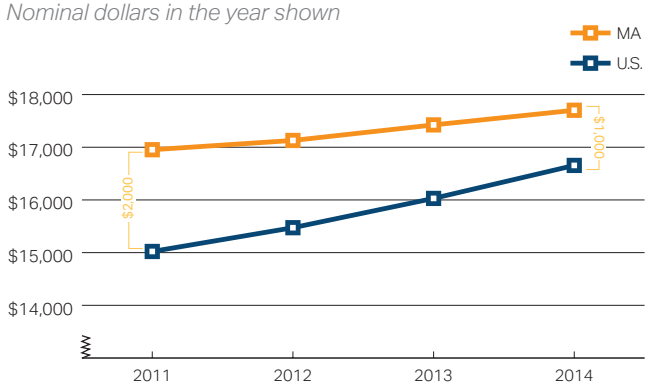
Source: Center for Health Information and Analysis (Massachusetts); Centers for Medicare and Medicaid Services (U.S.); and Health Care Cost Institute (Northeast)

Pre-filed testimony submitted by the three major commercial payers in Massachusetts as part of the HPC's 2014 Health Care Cost Trends Hearing assessed growth in commercial spending by prices, utilization, and service mix. All payers found prices to be the largest factor contributing to total spending growth, continuing patterns observed for a number of years and consistent with national trends.[2]

As a result of continued, slower growth in commercial spending in Massachusetts relative to the U.S. over the last several years, the gap in health insurance premiums (see **Exhibit 2.5**) has shrunk.

Exhibit 2.5: Family health insurance premiums, Massachusetts and the U.S., 2011 – 2014

Nominal dollars in the year shown



Note: Premiums for employer-sponsored health insurance. Cost-sharing is not included.

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey

In 2011, premiums for family coverage were nearly $2,000 per year higher in Massachusetts than the rest of the U.S. ($16,953 versus $15,022). Between 2011 and 2014, family premiums in Massachusetts grew a total of 4.4 percent compared to 10.9 percent in the rest of the U.S., cutting

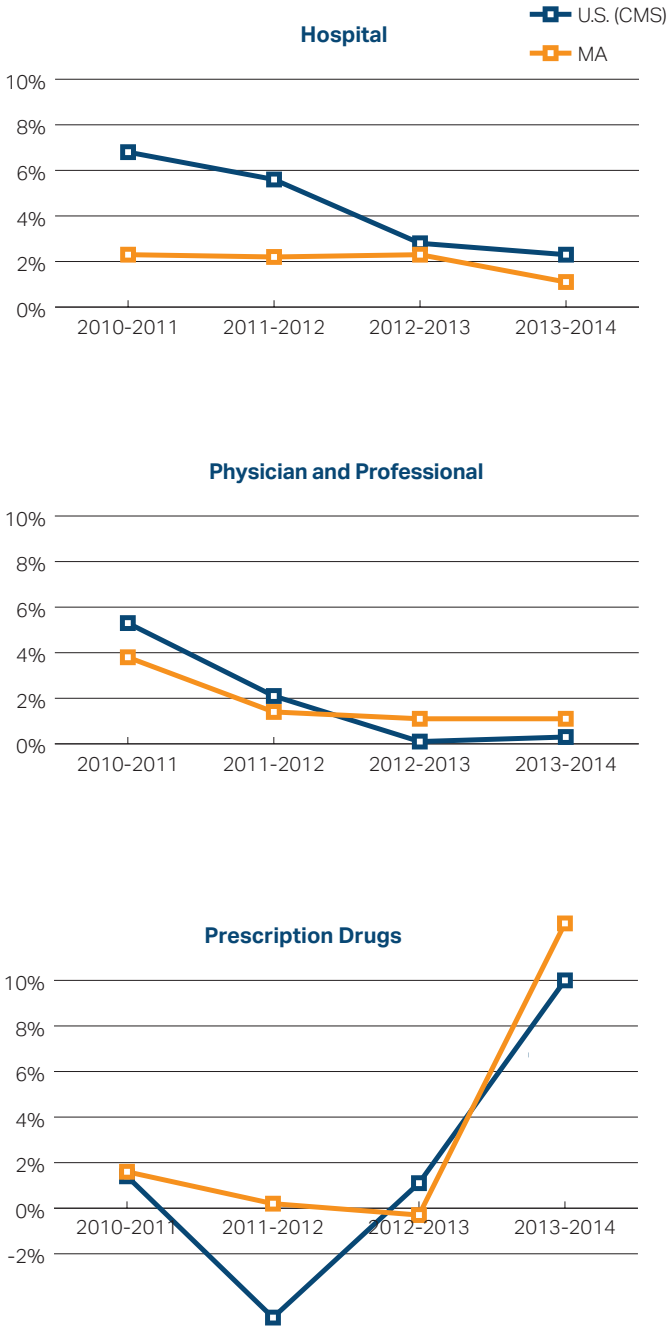
the 2011 premium gap nearly in half—to $1,050 ($17,702 versus $16,655). Premiums for single coverage also grew more slowly in Massachusetts over this period (9 percent versus 11.7 percent in the U.S.). Looking at commercial spending by category of service—hospital spending (including inpatient and outpatient), physician and other professional spending, and prescription drugs—offers further insight into the slower rate of growth of commercial spending in Massachusetts (see **Exhibit 2.6**).

Growth in hospital spending in Massachusetts from 2013 to 2014 per commercial enrollee continued at a slower pace than for the U.S. —at 1.1 percent versus 2.3 percent. Within the hospital sector, inpatient hospital spending growth was negative (-0.4 percent) while outpatient spending grew 2.2 percent, suggesting a possible shift from inpatient to outpatient settings (see **Chapter 5**: "**Hospital Outpatient Spending**"). Spending on physician and other professional services also grew slowly from 2013 to 2014 (1.1 percent), consistent with continued slow growth (0.3 percent) in the U.S.

Finally, growth in prescription drug spending per commercial enrollee skyrocketed in both Massachusetts and the U.S. in 2014 —12.5 percent in Massachusetts versus 10.0 percent in the U.S. Growth in prescription drug spending in Massachusetts accounted for almost two-thirds of the 2.9 percent growth in commercial spending per enrollee and one-third of spending growth overall in 2014.[viii] Because of the implications of this trend for future success at controlling healthcare spending, the HPC devotes a fuller discussion of prescription drug spending and trends in **Chapter 4**: **"Prescription Drug Spending."**

On the whole, spending growth in the commercial sector in Massachusetts was modest in 2014. Aside from increases in prescription drug spending, per-member spending growth was near 1 percent from 2013 to 2014, continuing a trend of slow growth and dropping Massachusetts' insurance premiums toward national averages. This slower growth does not imply, however, that there are not opportunities to remove unnecessary spending from the system—spending that does little to improve health or outcomes. Massachusetts commercial spending is still

Exhibit 2.6: Annual growth in commercial spending per enrollee, by spending category, 2010 – 2014



Source: Centers for Medicare and Medicaid Services; Center for Health Information and Analysis

viii If drug spending had grown by 3.6 percent in Massachusetts in 2014, THCE would have come in below the 3.6 percent benchmark.

higher than the U.S. average,[ix] while per-capita health spending in the U.S. is 50 percent greater than that of the next highest country and nearly three times that of the U.K., for example.[3] Some of these opportunities are explored later in this Report.

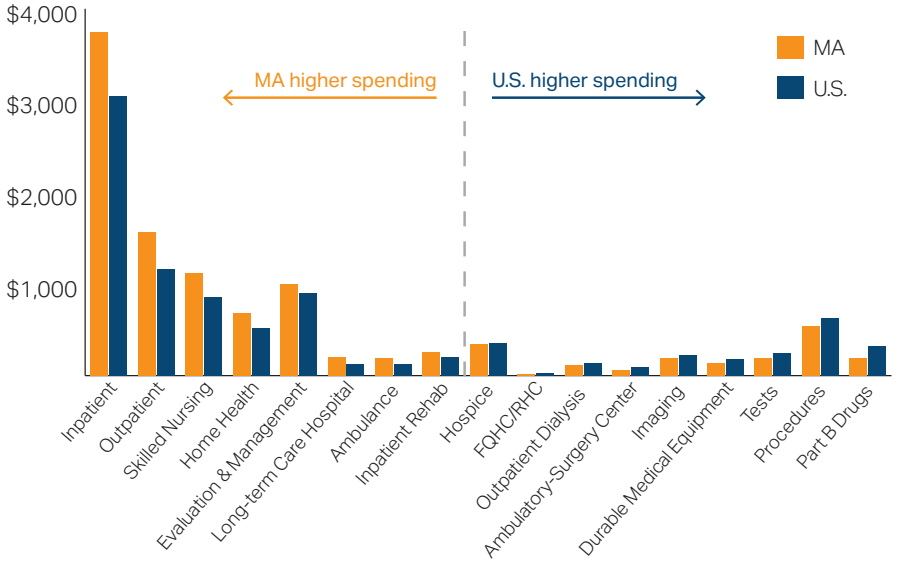
MEDICARE SPENDING AND GROWTH, 2010-2014

To further gauge Massachusetts spending patterns relative to the U.S., it is illustrative to compare spending within the Medicare Fee-For-Service (FFS) program ("Original Medicare"). Roughly 70 percent of Medicare beneficiaries are enrolled in Original Medicare nationwide (80 percent in Massachusetts).[4] Compared to commercial spending, Given that it is a national program, Original Medicare is more comparable across the U.S. in terms of benefit structure, prices paid to providers, and demographics of the enrolled population. Massachusetts does have a larger portion of Original Medicare beneficiaries enrolled in accountable care organizations (ACOs) than most states, which could influence care patterns and reduce spending.[x]

In 2014, total spending by or on behalf of Original Medicare beneficiaries averaged $15,177 in Massachusetts, approximately 4.8 percent higher than the $14,483 national average.[xi] That gap has remained relatively unchanged since 2010, when Massachusetts spending was 6 percent above the U.S. average. Growth in per-beneficiary spending by category of service has also roughly mirrored national trends since 2010, with total growth per beneficiary below 5 percent over the four-year period for all categories except for hospital outpatient spending (which grew 25 percent in both Massachusetts and the U.S. This is explored in **Chapter 5**: **"Hospital Outpatient Spending"**) and prescription drugs.

While spending *growth* among Medicare beneficiaries has been similar in Massachusetts and the U.S., the underlying *amounts* of spending by category of service reveal important differences in the way care is provided to Original Medicare beneficiaries in Massachusetts versus in the U.S. (see **Exhibit 2.7**).[xii]

Exhibit 2.7: Original Medicare spending per beneficiary in Massachusetts and in the U.S, by category, 2013



Note: Categories are ordered from left to right by the amount by which spending in Massachusetts exceeds national spending.
Source: Centers for Medicare and Medicaid Services

ix CMS last published directly comparable estimates of state-by-state expenditures per privately-insured enrollee updated through 2009, at which time Massachusetts was 18 percent higher than the U.S. average. Though Massachusetts commercial spending has grown more slowly than national spending since that time, the difference is not enough to erase that deficit.

x See **Chapter 11: "Alternative Payment Methods"**.

xi Data from CMS includes cost-sharing by beneficiaries and drug spending for those with Medicare Part D drug coverage. It does not include premiums paid for supplemental coverage ("Medigap").

xii Medicare does adjust prices to account for regional differences in input costs (such as the wages of nurses), the number of medical residents a hospital is currently training, and other factors. The residency adjustment is particularly important for Massachusetts, which has more medical residents per capita than any other state.

In general, Massachusetts Medicare beneficiaries spend more on institutional-based care (inpatient care,[xiii] outpatient care, post-acute care, and ambulance care) than the rest of the U.S. does and less on ambulatory-based care (drugs provided in ambulatory settings, procedures, tests, and imaging). High rates of utilization of institutional care in Massachusetts compared with the rest of the U.S. have been noted elsewhere and suggest ample room to redirect some care to less intensive settings, a topic which the HPC returns to in later sections of this Report. Furthermore, although the higher spending in Massachusetts on inpatient care largely reflects higher prices rather than higher utilization, this spending difference would be reduced if more Medicare beneficiaries used lower-paid community hospitals rather than teaching hospitals, a topic addressed in the HPC's forthcoming Community Hospital Study.

GROWTH IN MASSHEALTH ENROLLMENT AND SPENDING, 2013-2015

As shown in **Exhibit 2.2**, two-thirds of state spending growth between 2013 and 2014 occurred within MassHealth. As previously noted, this spending increase is largely attributable to enrollment growth, which was impacted by two significant events in 2014: 1) the implementation of the ACA insurance market changes and 2) the subsequent operational difficulties at the Massachusetts Health Connector. In addition, like other payers, MassHealth spending increased due to the introduction of high-cost drugs into the market and other factors impacting drug spending.[xiv]

MassHealth enrollment, 2013-2015[xv]

Between 2013 and 2015, the implementation of ACA significantly impacted enrollment in the MassHealth program. Consistent with the Commonwealth's health reform aim to extend affordable coverage to all residents, in 2014 MassHealth extended eligibility to low-income adults through the ACA and transferred individuals with incomes between 100 and 133 percent of the Federal Poverty Level (FPL), who had been previously eligible for subsidized insurance via the Massachusetts Health Connector (Connector), onto MassHealth. On January 1, 2014, these individuals were automatically enrolled into the new CarePlus program, thereby gaining access to MassHealth coverage through MCOs.[5, xvi] This transfer represented a significant and permanent change in the size and composition of the MassHealth population.[xvii]

The ACA also required changes to the processes that the Connector used to assess applicants' eligibility for subsidies to enroll them into new programs. The Connector was unable to carry out these changes within the necessary timeframe, and was unable to effectively enroll individuals into subsidized insurance. The Commonwealth responded to these operational difficulties by extending eligibility for comprehensive coverage through MassHealth. All applicants, including those not eligible for subsidies, were enrolled in a new "Temporary Coverage" program, managed by MassHealth, with services paid for on a FFS basis. The Temporary Coverage program was phased out in early 2015 with the introduction of a well-functioning Connector website. This process resulted in significant temporary changes to the enrollment and composition of the MassHealth population in 2014.

xiii In **Exhibit 2.7**, higher utilization of services in Massachusetts drives higher spending for most categories of service. For inpatient care, however, spending differences between Massachusetts and U.S. disappear completely when adjusted for prices. Massachusetts' higher prices result from several factors including, 1) adjustments Medicare makes to inpatient admissions to account for higher labor costs (such as nurse wages) in different areas in the U.S. that were enhanced further in 2011 by the reclassification of the rural Nantucket Cottage from a critical access hospital to a hospital paid under the regular inpatient hospital payment system, and 2) the fact teaching hospitals are paid more per admission combined with the fact that roughly double the proportion of Medicare beneficiaries in Massachusetts receive care at teaching hospitals compared to the U.S. average (Massachusetts Health Policy Commission, Annual Cost Trends Report, 2013).

xiv Of the 4.8 percent increase in per-capita spending in Massachusetts, 3.2 percentage points were due to increased spending in MassHealth, of which 0.7 percentage points (22 percent) were due to prescription drugs.

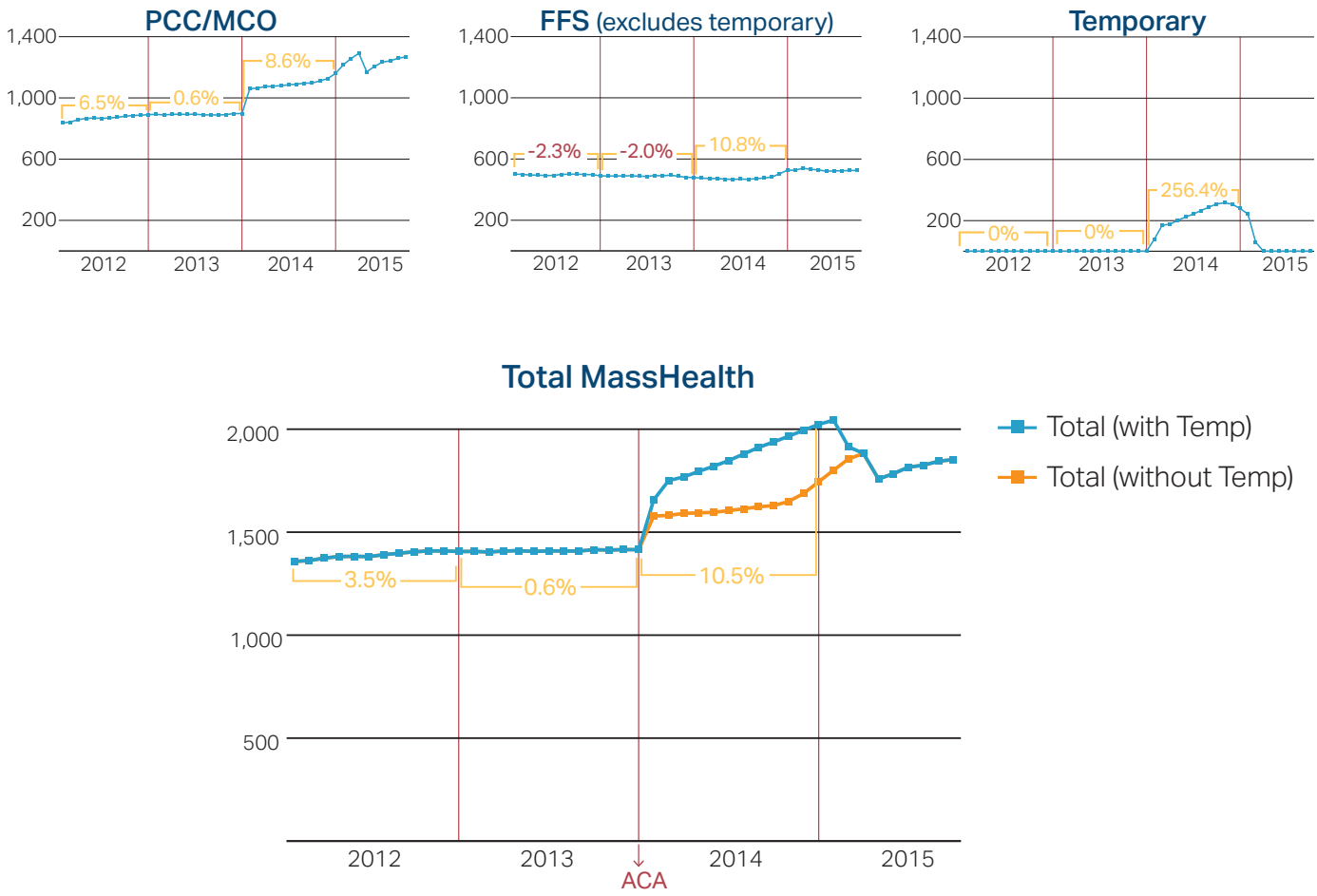
xv While much of this report focuses exclusively on 2014, this section discusses the MassHealth enrollment trend through 2015 to create perspective on the events of 2014.

xvi At the same time, MassHealth also transferred certain members with incomes below 100 percent of the FPL from the PCC program to CarePlus MCO.

xvii On January 1, 2015, individuals who had formerly been eligible for subsidized insurance via the Medical Security program were required to re-apply for coverage; approximately 7,000 of these had incomes below 133 percent of FPL and were likely eligible for MassHealth (Health Management Associates).

Because of these two programmatic changes, enrollment in the PCC/MCO programs rose by approximately 56,000 members on January 1, 2014 (due to auto-enrollment into CarePlus) and rose again by about 180,000 members between November 2014 and March 2015 (due to the closing of the Temporary Coverage program and subsequent enrollment of a portion of its members into MassHealth)[6, xviii, xix] (see **Exhibit 2.8**).

Exhibit 2.8: MassHealth enrollment, January 2012 – August 2015
Thousands of enrollees per month



Source: Center for Health Information and Analysis

xviii The dip in enrollment in March 2015 is likely due to the process whereby MassHealth re-determined eligibility. Members were dropped from the program during this process but often re-enroll soon after.

xix The PCC and MCO programs are considered together because of significant overlap in populations served. Joint analysis is particularly helpful when considering the 2013/2014 trend because some members were auto-enrolled from the PCC plan to the CarePlus MCO on January 1, 2014. For the discussion of MassHealth enrollment, the HPC uses enrollment measures from the "Enrollment Snapshot Report" produced by MassHealth.

Enrollment in the FFS program, excluding the Temporary Coverage program, rose at a fairly steady rate of an average of 2,000 members per month throughout 2014. In August 2015, the FFS caseload was 525,727 members, representing 23,000 (5 percent) more than in September 2013. The Temporary Coverage program (which had no members in January 2014) peaked at 317,000 in October 2014 and ended in March 2015. The overall MassHealth trend is the sum of these three program trends: PCC/MCO, FFS, and Temporary Coverage. In a two-year period (September 2013-September 2015), the total MassHealth population increased 31 percent, from 1.41 to 1.85 million members.

Of the total increase, approximately one-third was offset by the closure of other state programs that served very low income individuals who became eligible for MassHealth, including CommCare (approximately 97,000 former members eligible for MassHealth), the Health Safety Net (approximately 31,000 eligible members), and the Medical Security Program (approximately 8,000 eligible members).[xx]

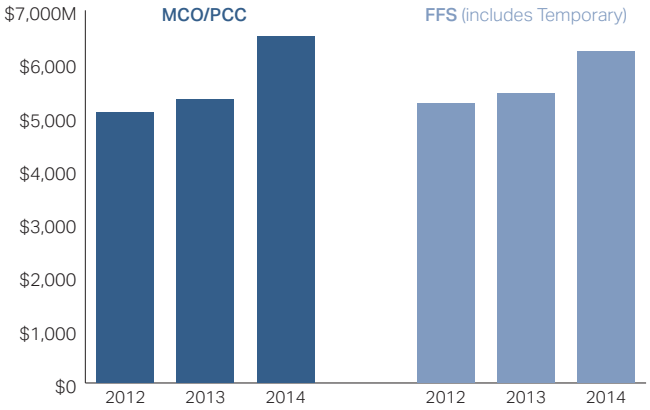
Some of the increase is also likely attributable to a decrease in the number of uninsured. While survey data do not show marked changes between 2013 and 2014 in the percentage of Massachusetts residents who were uninsured, data from emergency departments (ED) show a drop in the number of visits by uninsured patients and an offsetting increase in the number of visits by patients with MassHealth. Specifically, the number of ED visits by uninsured patients dropped from 205,000 in 2013 to 161,000 in 2014 while the number of ED visits by patients with MassHealth increased from 766,000 to 820,000.[7] This change is consistent with a drop in the uninsured of approximately 55,000, or 15 percent of the increase in the MassHealth population.[xxi] The remainder of the MassHealth enrollment increase may represent other dynamics.[xxii]

MassHealth spending, 2012-2014

As a primary result of these enrollment trends, MassHealth spending, as included in the benchmark calculations, increased significantly. In the PCC/MCO programs, spending increased from $5.3 billion to $6.5 billion (a change of $1.19 billion), much larger than the changes between 2012 and 2013 ($257 million).[8]

For the FFS program, including both the baseline FFS population and those enrolled in the new Temporary Coverage, spending increased from $5.45 billion to $6.22 billion (a change of $773 million), again dramatically more than the previous year's FFS trend ($197 million). These spending trends are shown in **Exhibit 2.9**.

Exhibit 2.9: MassHealth spending by program, 2012 – 2014
Millions of dollars in calendar year shown



Note: Senior Care Option (SCO), Programs of All-Inclusive Care for the Elderly (PACE), and OneCare not included in figure. These programs began as MassHealth managed care programs available to elderly, near elderly, and dual-eligible populations. For the SCO/PACE/OneCare program, spending was $727M (2012), $865M (2013), and $1.14B (2014). OneCare began in 2013.
Source: Center for Health Information and Analysis, Total Health Care Expenditures

While the changes in MassHealth spending were large, the 19 percent increase was typical among the states that expanded eligibility under the ACA.[9] Moreover, unlike other states, some of the increased public spending in MassHealth in 2014 was offset by decreased public spend-

xx Estimates of the size of eligible populations are from Health Management Associates. Higher income individuals in the programs that closed became eligible for coverage via the Connector. From September 2013 to September 2015, net private commercial enrollment for Massachusetts residents increased by approximately 50,000 members; commercial enrollment as of September 2015 included more than 170,000 residents enrolled in subsidized and unsubsidized Qualified Health Plan (QHP) offerings through the Health Connector. (Source: CHIA, private communication. Note commercial enrollment total only includes individuals with primary coverage.)

xxi This calculation assumes that uninsured individuals visit the ED at the same rate in 2013 and 2014, and that therefore, the 22% reduction in ED visits by the uninsured in 2014 represents a 22% reduction in the number of uninsured in Massachusetts. The HPC approximates that number as 3.7% of the Massachusetts population in 2014, or 250,000, based on survey estimates.

xxii Notably, during 2014 MassHealth was forced to suspend many of the processes used to verify eligibility due technical and operational challenges of implementing the Health Insurance Exchange (HIX)/Integrated Eligibility System; such processes have now resumed.

ing in CommCare.[xxiii] Importantly, although increased enrollment was clearly a major component of the 2014 rise in MassHealth spending, the total increase in MassHealth spending resulted not only from the costs of the newly enrolled population, but also from the spending trend for the baseline population, which will determine the future course of spending. As noted earlier, the rate of growth of per-capita spending of the combined PCC, MCO, and CommCare populations was 2.5 percent between 2013 and 2014. For the PCC/MCO population, the rate of growth was 2.7 percent between 2012 and 2013. In both years the spending trend was below the benchmark and roughly on par with other payers.[xxiv]

Unfortunately, the available data do not make it possible to calculate the 2013-2014 per-capita trend for the baseline FFS population absent the Temporary Coverage members, and the two populations are too disparate to analyze together. Between 2012 and 2013, prior to the Temporary Coverage program, the per-capita spending growth trend in the FFS population was 6.2 percent, above the benchmark rate of 3.6 percent.[xxv]

Given the importance of MassHealth to its 1.85 million members and to the benchmark, it is important to understand not only broad enrollment and spending trends but trends for specific populations within MassHealth programs as well as trends in risk factors and utilization. All are markedly different in MassHealth compared to the commercial and Medicare populations due to characteristics of the population and the benefit. For example, Medicaid is the primary payer for long-term supports and services (LTSS), as neither Medicare nor commercial health insurance cover most long-term services. In 2015, MassHealth LTSS spending totaled $4.5 billion, or approximately 30 percent of the MassHealth budget. Among the FFS population, many of whom have primary insurance coverage through Medicare or another payer, LTSS represented 75 percent of spending, totaling $3.7 billion in 2014. Of this spending, 32 percent was for nursing facility care ($1.6 billion), and 43 percent ($2.1 billion) was for home and community based services (HCBS), including waiver programs. [xxvi]

MassHealth is exploring a variety of options to increase the quality, cost-effectiveness, and member experience of its programs through an extensive stakeholder engagement process. Central to the reform is a comprehensive care delivery strategy to better integrate care for MassHealth members across physical, behavioral health, and LTSS care that is supported by value-based payment models.

ACCESS TO AND AFFORDABILITY OF CARE

In the aggregate, Massachusetts continues to perform well compared to other states on measures of access to care and affordability of care. In terms of insurance coverage, Massachusetts continued to have the lowest rate of uninsured in the U.S. (4 percent in 2014), even as other states closed some of the gap through the insurance coverage expansions under the ACA.[10] Massachusetts also continues to perform well on other population-level aggregate measures. The percentage of state residents paying more than 10 percent of income in out-of-pocket expenses for health care (not including premiums) was one of the lowest in the U.S. in 2013 and 2014 (11 percent), as was the percentage of at-risk adults without a doctor's visit (7 percent).[11]

These aggregate measures, however, mask access and affordability problems for many of the state's residents. Even with relatively slow growth in health insurance premiums in recent years, Massachusetts continued to have among the highest health insurance premiums in the U.S. in 2014, averaging $17,702 for family coverage and $6,348 for single coverage (approximately $1,000 and $500 above national averages, respectively). While average incomes are also high in the state, middle-class individuals and families face essentially the same premiums as higher income individuals, and are generally not eligible for subsidies.[xxvii] A family of four living at twice the FPL, with employer-based insurance would find the combination of average family health insurance premiums and cost-sharing ($19,300) to

xxiii The net increase in MassHealth spending, factoring in the reduction in spending on CommCare, is 13 percent.

xxiv PCC, MCO and CommCare populations are combined for the purpose of the 2013-2014 per-capita trend because of the transfer of CommCare patients to the MassHealth MCOs during this period. For the discussion of MassHealth per-capita spending trends, the HPC uses enrollment measures from THCE. The MassHealth Enrollment Snapshot and THCE define MassHealth enrollment differently. Approximately 2.4 million member months for individuals enrolled in the Health Safety Net, Children's Medical Security Plan, and DMH-only as well as CommCare-unenrolled are included in THCE enrollment but not the Enrollment Snapshot; these definitional differences mainly affect estimates of FFS enrollment.

xxv In 2016, CHIA and the HPC will have access via the All-Payer Claims Database (APCD) to the data needed to analyze risk factors, utilization, spending, and enrollment within segments of the MassHealth population defined by eligibility and demographic characteristics. This data were not available in time for this Report.

xxvi Data from Massachusetts Medicaid Policy Institute and CHIA. See **Technical Appendix** for details.

xxvii ACA tax credits are available to most families with income between 133% and 400% of the FPL (subsidies decline as income grows) but only if they do not have offers of health insurance from an employer.

equate to roughly 40 percent of annual income (roughly $50,000 in 2014).[xxviii]

These examples of high cost of care in the Commonwealth have contributed to persistent affordability challenges for some state residents. In 2014, 38 percent of Massachusetts residents paid more than $1,000 out-of-pocket for health care, and 19 percent paid more than $3,000. Out-of-pocket spending includes spending on over-the-counter medicines, spending on copays and deductibles for care in the context of an individual's health insurance plan, and spending on services not covered by health insurance, such as alternative therapies or charges when individuals visit out-of-network providers (see **Sidebar: "Out-of-network charges for emergency services and "surprise billing"**). Among residents between 138 and 300 percent of the FPL (between roughly $30,000 and $70,000 for a family of four), 30 percent reported having difficulty paying medical bills and 17 percent said someone in their family went without needed medical care due to cost in the past 12 months.

Out-of-network charges for emergency services and "surprise billing"

Most health insurance products identify a network of hospitals, physicians, and other providers with whom the payer has a contract and from whom the insured is entitled to receive services at agreed-upon cost sharing levels. When a consumer receives services from an out-of-network provider, depending on plan terms, the consumer may be required to pay for the full cost, or to pay much higher cost-sharing than would be required for in-network services. There are, however, circumstances where the consumer does not choose to receive care outside the network. These include emergency situations and services received at in-network facilities but provided by out-of-network providers, without the consumer's informed agreement. This latter phenomenon is often called "surprise billing." Further, as part of the "surprise billing"problem, there are circumstances where all the physicians in a given specialty working in a given hospital are out-of-network, so that even if the patient is informed of the out-of-network status, he or she does not have the choice of an in-network provider at the in-network facility.

Certain laws aim to protect consumers in such circumstances. Under Massachusetts state law and the ACA, most plans must pay a reasonable amount for out-of-network emergency care, although "balance billing" (whereby the consumer is billed for the difference between this reasonable amount and the amount charged by the hospital) is not prohibited.[xxix] Payers have stated that it is their policy to hold members harmless for out-of-network emergency care;[12] however, the HPC understands that "balance billing" sometimes occurs. Additionally, under state law, carriers must provide enrollees with a statement in the "evidence of coverage" that enrollees who receive care from an out-of-network provider at an in-network institution are not responsible for more than they would have been responsible for when receiving in-network care, unless they have a "reasonable opportunity to have the services performed by a network provider."[xxx] Though this language appears to prohibit "balance billing" for the consumer, the level of carrier compliance is not clear. Moreover, there is a perceived burden on consumers to be aware of this protection, as consumers may need to affirmatively alert payers to out-of-network service situations in order for the payer to cover the service. Several payers have indicated that they do hold members harmless in "surprise billing" situations, and others have stated that they use their appeals process to resolve this problem in members' favor.

In addition to these difficulties for consumers, there are also significant market function issues raised by unlimited out-of-network charges. Hospitals with high ED volume (and physicians who work in such hospitals) are likely to receive patients through emergency or "surprise billing" situations, even without joining the patients' insurance networks. As a consequence, the benefit to these providers from joining a network is relatively low, compared with providers who benefit more from the patient volume that comes from being in-network. For payers, the alternative to agreeing to high prices to keep providers in network may be to pay high charges for their patients who use these services out-of-network and whom the payer then holds harmless. This may contribute to price variation by increasing the bargaining leverage of hospitals with higher volume.[xxxi]

xxviii The figure of $19,300 includes an employee's contributions to health insurance premiums. These contributions vary by firm and are typically on the order of 70 percent of the premium for family coverage. The figure of 40 percent is somewhat of an overestimate because employer-based health insurance is not taxable and because employer contributions to health insurance should be considered additional compensation to the family and included in their income total. It is also debatable, but consistent with economic theory, that employer contributions to health insurance should be considered as part of the family's health insurance spending—which is the case insofar as the family would receive those dollars as higher wages in lieu of health insurance. On the other hand, this figure does not include other health insurance spending, such as over-the-counter spending and spending not covered by health insurance, such as spending on out-of-network providers.

xxix M.G.L. c. 176G and the Patient Protection and Accountable Care Act, 42 U.S.C. sec. 18001

xxx M.G.L. c. 176O, sec. 6

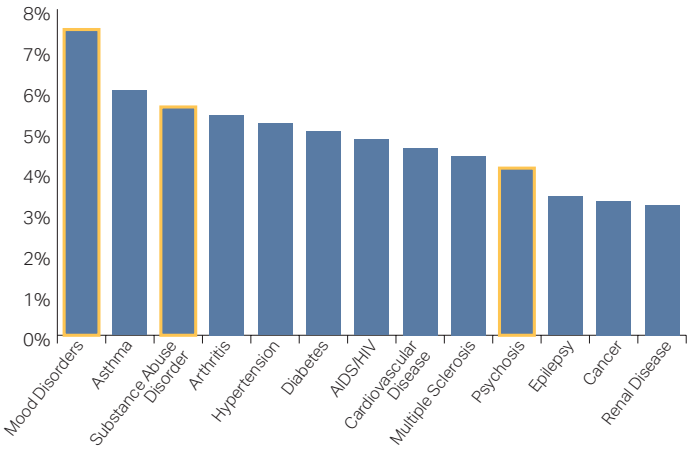
xxxi This perceived need for wider networks may also reduce payer incentives to form limited network plans, because in many cases, it is less expensive to agree to a higher rate to keep a provider in network than to pay charges for patients who use the provider's services out of network. See, e.g., Ripps, J.C. (August 17, 2007). Value Promoting Policy Review: Payments to Out-of-Network Hospitals in California. Milliman, Inc. for Pacific Business Group on Health; Murray, R. (May 16, 2013). Hospital Charges and the Need for a Maximum Price Obligation Rule for Emergency Department & Out-Of-Network Care. Health Affairs Blog.

Access to care was also a problem for some state residents, particularly lower income groups. Nineteen percent of residents reported they were unable to get an appointment as soon as needed in the prior 12 months. Twelve percent (20 percent of those below 133 percent of the FPL) reported that a doctor's office told them they were not accepting their insurance type, and 14 percent (18 percent of those below 133 percent of the FPL) were told that the doctor's office was not accepting new patients. These percentages are among all residents, including those who did not seek appointments with providers in the past 12 months and thus understate access problems for those who actually sought care.[xxxii]

Out-of-pocket spending

Out-of-pocket spending, defined more narrowly, is spending on copays and deductibles in the context of an individual's health insurance plan. Such spending grew by 4.9 percent in 2014 for commercially-insured state residents.[xxxiii] Growth was higher for individuals insured via the merged market (5 percent) and employees of firms that self-insure (6.5 percent). Furthermore, upon analysis of the state's All-Payer Claims Database (APCD), the HPC found that out-of-pocket spending as a proportion of total health care spending varied by health condition and was particularly high for individuals with behavioral health conditions (see **Exhibit 2.10**).

Exhibit 2.10: Cost-sharing as a percentage of total spending for individuals with given diagnosed conditions, 2013



Source: HPC analysis of Massachusetts All-Payer Claims Database

xxxii CHIA did not include this question in its survey.

xxxiii While not including all kinds of out-of-pocket spending, this subset of out-of-pocket spending is submitted to CHIA via claims sent to the state's APCD, and can therefore be analyzed in greater detail.

QUALITY OF CARE

Quality of care is multi-dimensional. In past cost trends reports, the HPC summarized Massachusetts' performance compared to the U.S. on measures from several domains of quality, including hospital admissions for chronic conditions, readmission rates, mortality rates, patient safety, and patient experience measures.[13] Massachusetts tends to perform well on most, but not all, measures. For example, on measures such as mortality rates, appropriate medication use, and patient safety, the state consistently performs in the top quartile.[14] On measures involving appropriate use of high-intensity care and appropriate hospital admissions, however, Massachusetts often performs worse than average. Massachusetts Medicare beneficiaries were in the worst quartile of avoidable ED admissions, hospital-readmission rates, and ambulatory-care-sensitive admissions for residents over 75 years of age (see **Chapter 8: "Avoidable Hospital Use")**. The state's performance on additional quality measures for specific conditions is discussed in CHIA's November 2015 report on the quality of care in Massachusetts.[15]

These state-wide averages mask considerable variation within the state. CHIA also reported on within-state variation on a number of measures, by provider, in its report. For example, patient-reported experiences with waiting times and access to appointments with their primary care offices varied considerably across 85 physician offices in Massachusetts, from composite scores of 63 to 96. Variation by hospital in other measures such as readmission rates and C-section rates for low-risk births was also considerable and is discussed later in this Report.

In their role monitoring health care system performance, it is critical for CHIA and the HPC to track and highlight variations in healthcare quality across settings, including physicians, hospitals and other settings of care. CHIA and the HPC are also working to promote the use of a standard set of quality measures in payment, insurance product design, and transparency – to help minimize consumer confusion and provider burden and allow for easier comparisons between Massachusetts providers.

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SECTION II: TRENDS IN SPENDING AND CARE DELIVERY

Trends in Provider Markets

3

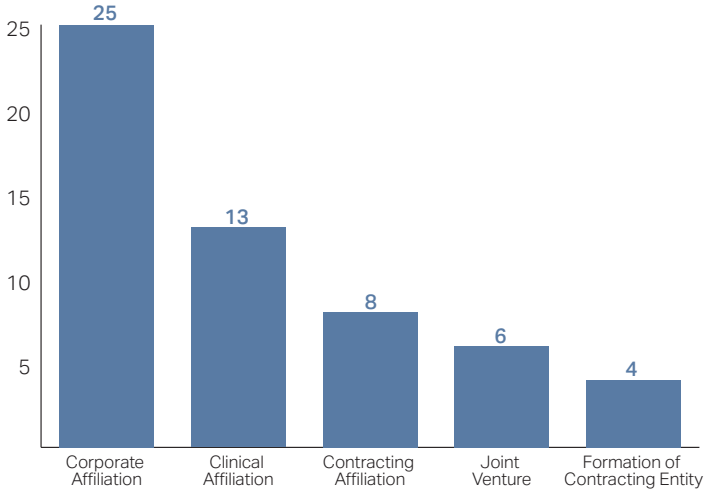
Provider alignments, including acquisitions and affiliations, can impact the performance of the healthcare system in delivering high-quality, cost-effective care. Although provider alignments may take a range of forms, and may promote more patient-centered, accountable care, many such alignments involve acquisitions and contracting affiliations that can increase overall market consolidation.[i] While some argue that alignments may result in efficiencies and care delivery improvements through clinical integration, evidence suggests that increases in market consolidation are not typically associated with increased quality of care, and may even be associated with decreased quality.[ii,1,2,3] There is also strong consensus that increased healthcare consolidation through hospital mergers leads to higher prices in the vast majority of cases.[4,5,6,7,8]

PROVIDER ALIGNMENTS

Chapter 224 directs the Health Policy Commission (HPC) to monitor this aspect of the Massachusetts healthcare system. Through the examination of notices of material change (MCNs) filed by provider organizations, the HPC tracks the frequency, type, and nature of such provider system alignments in the Commonwealth and assesses their potential impact on healthcare spending, quality, and access. The HPC also engages in a more comprehensive review of particular transactions anticipated to have a significant impact on healthcare costs or market functioning through its "cost and market impact reviews" (CMIRs).

From 2013 through 2015, the HPC received notice of 53 proposed mergers, acquisitions, and affiliations. These notices reveal a rapidly changing healthcare marketplace and represent a wide range of transactions, including acquisitions of hospitals and physician groups, affiliations between providers for joint contracting, creation of clinical joint ventures, formation of new contracting entities like accountable care organizations (ACOs), and establishment of new preferred provider arrangements and other clinical affiliations[iii] (see **Exhibit 3.1**).

Exhibit 3.1: Frequency of provider alignment types for which the HPC received material change notices, 2013 – 2015



Source: HPC

i The Health Policy Commission defines a contracting affiliation in its Final Regulation on Material Chance Notices and Cost and Market Impact Reviews, 958 CMR 7.02, [hereinafter Final MCN and CMIR Regulation] as any relationship between a Provider Organization and another Provider or Provider Organization for the purposes of negotiating, representing, or otherwise acting to establish contracts for the payment of Health Care Services, including for payment rates, incentives, and operating terms, with a Carrier or third-party administrator.

ii This may be due to decreased incentives to maintain or improve clinical quality as a result of facing fewer competitors.

iii The HPC defines a clinical affiliation in its Final MCN and CMIR Regulation, 958 CMR 7.02, as any relationship between a Provider or Provider Organization and another organization for the purpose of increasing the level of collaboration in the provision of Health Care Services, including, but not limited to, sharing of physician resources in Hospital or other ambulatory settings, co-branding, expedited transfers to advanced care settings, provision of inpatient consultation coverage or call coverage, enhanced electronic access and communication, co-located services, provision of capital for service site development, joint training programs, video technology to increase access to expert resources and sharing of hospitalists or intensivists.

As a result of these and other changes to the healthcare system over the last several decades, the majority of care in the Commonwealth is now provided by a relatively small number of large provider systems. In 2014, the five largest health systems in the state accounted for 56 percent of hospital discharges for commercially insured patients, an increase from 51 percent in 2012. Much of the growth over these years was driven by the acquisition of Winchester Hospital in 2014 by Lahey Health System, which was the subject of a CMIR. [iv, 9]

Nearly half of the transactions noticed to the HPC involved corporate affiliations, which included mergers and acquisitions of acute care hospitals, physician groups, rehabilitation providers, visiting nurse associations, and a payer. However, the HPC has also observed significant alignment of both hospitals and physicians through contracting and clinical affiliations, including through the formation of new contracting entities like ACOs.

In past work, the HPC has highlighted the potential for contracting and clinical affiliations, as opposed to corporate integration, to facilitate coordination among providers while potentially raising fewer cost and market concerns than corporate acquisition.[9,10,11] However, others have suggested that non-corporate alignments can nonetheless raise cost or market concerns. For example, in analyzing new joint contracting among corporately distinct providers such as ACOs, antitrust agencies apply a very similar approach to that of their review of provider mergers, and the Federal Trade Commission (FTC) and U.S. Department of Justice (DOJ) have noted that "under certain conditions ACOs could reduce competition and harm consumers through higher prices or lower quality of care," similar concerns to those raised by corporate mergers.[12] Even clinical alignments, which have a significant potential to increase care coordination, can also raise market concerns when they serve to weaken providers' incentives to refer to more efficient providers.

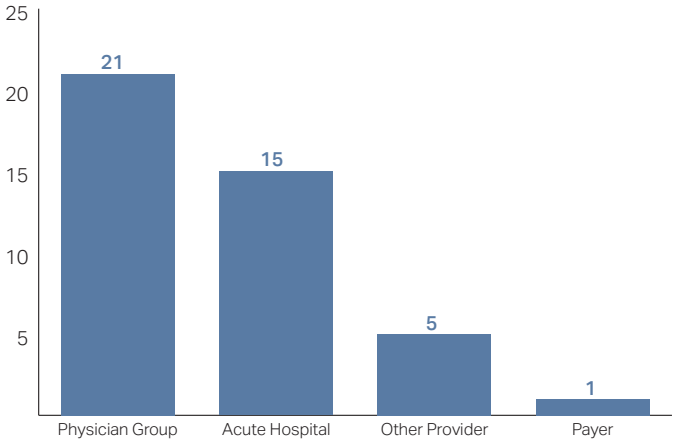
As the market continues to explore these different models of clinical and contracting alignment, the HPC intends to examine whether and to what extent such models have truly succeeded in facilitating integration among providers, without negative impacts on cost and market functioning.

iv Lahey's acquisition of Winchester Hospital accounted for three percentage points of the five percentage point increase, nearly doubling Lahey's share of discharges from 2013 to 2014, from four percent to seven percent. Comparable statistics in previous reports used projected data, updated here with validated data.

PHYSICIAN GROUP ACQUISITION AND AFFILIATION

Another significant trend, both in Massachusetts and nationally, is the rapid acquisition of physicians by hospitals and the transition from independent or affiliated physician practices to employment models. Many physician groups, even if they do not choose direct employment by hospitals, are joining the contracting networks of these primarily hospital-led integrated provider systems. As of December 2015, more than two-thirds of material changes involving new corporate or contracting affiliations have included physician groups (see **Exhibit 3.2**).

Exhibit 3.2: Frequency of providers involved in material change notices consisting of corporate or contracting affiliations



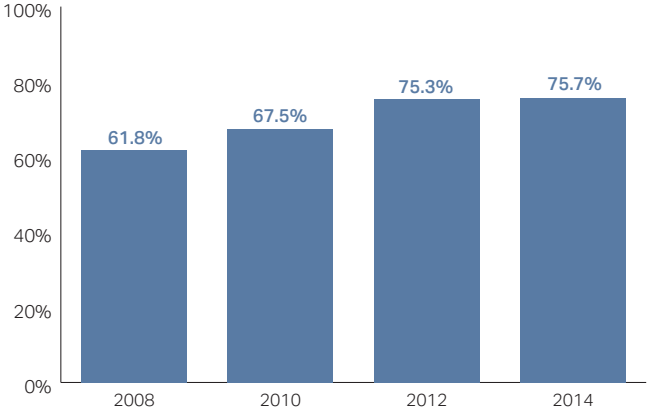
Source: HPC

It is critically important to monitor this trend of increasing physician alignment with major hospital systems given the growing body of literature demonstrating that hospital system acquisitions of physician practices leads to higher physician and hospital prices.[13,14,15,16] Consistent with research literature, the HPC has found that hospital system acquisitions of physician practices can have a significant cost impact. For example, in the HPC's CMIR of Partners HealthCare System's (Partners) proposed acquisition of Harbor Medical Associates (Harbor), a previously independent 65-physician multispecialty group affiliated with South Shore Hospital, the HPC projected that healthcare spending would increase at least $8 million a year due to price increases for the Harbor physicians and would increase $6 million to $10 million a year due

to changes in referral patterns.[v, 11] Primary care physician (PCP) alignment with major hospital systems is particularly notable. PCP affiliations with hospitals have grown rapidly in recent years, and the vast majority of PCPs in Massachusetts are now associated with a relatively small number of provider systems. The share of PCPs affiliated with large provider systems grew from 62 percent in 2008 to 76 percent in 2014 (see **Exhibit 3.3**).[vi] In 2012, 75 percent of PCP visits were to PCPs affiliated with a large provider system, and these visits constituted nearly 79 percent of all revenue for PCP visits in the state (see **Exhibit 3.4**).

Acquisitions, mergers, contracting affiliations, and even clinical affiliations involving physician groups that have PCPs can have particularly profound implications on costs and market functioning. PCPs exercise significant control over where their patients receive further care, both because they are tasked with coordinating their patients' care under certain insurance models and because patients tend to follow the recommendations of their doctors.[17] Thus, the hospital or system affiliation of a patient's PCP will influence where that patient is referred for hospital services, and can play a bigger role in patient decisions about hospital care than cost, quality, or travel distance. In public statements about these affiliations, many providers discuss the need to better manage patients' use of services.[18,19,20] They assert that by establishing stronger relationships and encouraging referrals among a system's physicians, hospitals, and other types of providers, they can improve the quality and efficiency of patient care. However, integrated delivery systems have not uniformly been associated with improved quality or lower total medical spending for patients, and in some cases can in fact lead to higher spending.[21] Despite their potential benefits, these affiliations also frequently result in increases in physician referrals to those hospitals and to other providers within their system. In many cases, this can result in patients bypassing their closest provider to reach a (frequently more expensive) system-affiliated provider. One recent nationwide study found that physicians whose practices are owned by hospitals admit 70 percent or more of their patients needing hospital care to their affiliated hospital and that patients of hospital-employed physicians are substantially more likely (by 33 percent) to choose the hospital that owns the physician's practice as compared to patients of independent physicians. That study also found that physician ownership has a substantially greater influence on a patient's choice of hospital than the hospital's cost or quality.[22]

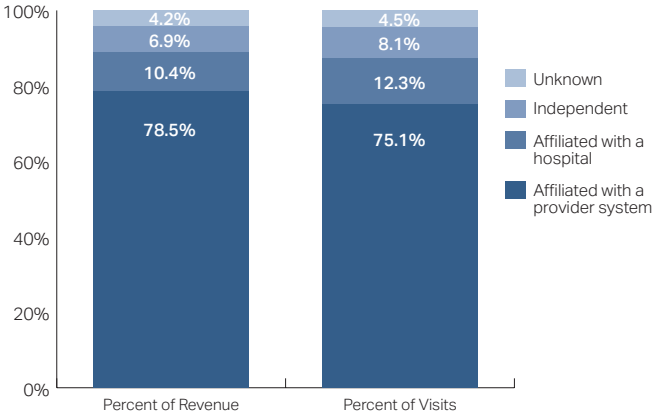
Exhibit 3.3: Percentage of primary care physicians affiliated with large provider systems, 2008 – 2014



Note: Reflects primary care physicians associated with Partners Community Health Care, Beth Israel Deaconess Care Organization, Steward Health Care Network, New England Quality Care Alliance, Atrius Health, UMass Memorial Health Care, Baycare Health Partners, and Lahey Health System.

Source: HPC analysis of data from Massachusetts Health Quality Partners

Exhibit 3.4: Percentage of primary care physician revenue and visits by affiliation status, 2012



Note: For the purposes of this analysis, major provider systems include Atrius Health, Baystate Health System, Beth Israel Deaconess Care Organization, Lahey Health System, New England Quality Care Alliance, Partners Community Health Care, Steward Health Care Network, and UMass Memorial Health Care. Primary care physicians affiliated with multiple systems are counted as being part of a major provider system.

Source: 2012 APCD claims for BCBS and HPHC, 2012 MHQP Master Provider Database

v These figures represent a significant proportion of the total spending increases that the HPC projected if Partners were to acquire both Harbor and South Shore Hospital. The HPC projected that the two transactions would increase spending for the three largest commercial payers by $23 million to $26 million per year. While Partners subsequently abandoned its bid to acquire South Shore Hospital, it did complete plans to acquire Harbor Medical Associates in March 2015.

vi The HPC's analysis of the Mass. Health Quality Partners Master Provider Database. Reflects PCPs associated with Partners Community Health Care, Beth Israel Deaconess Care Organization, Steward Health Care Network, New England Quality Care Alliance, Atrius Health, UMass Memorial Health Care, Baycare Health Partners, and Lahey Health System.

Furthermore, when a hospital acquires a physician practice, the hospital may decide to license the physician's office as a hospital outpatient department, which bills through the hospital.[11] This issue and its associated impact on healthcare spending are discussed in **Chapter 5: "Hospital Outpatient Spending."** In light of these and other concerns, it is particularly important for the HPC to continue to monitor the physician market to examine the impact of acquisition and affiliation of physician practices on healthcare costs and market functioning.[vii]

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vii State and federal antitrust agencies have shown significant recent interest in, and successful enforcement actions against, physician group acquisitions. The FTC issued a statement in 2011 recognizing that "consolidating with other . . . physician groups, entering into employment arrangements with hospitals, and forming other affiliations . . . may harm consumers through higher prices or lower quality of care." Statement of [FTC] Bureau of Competition Director Richard Feinstein on the Abandonment by Providence Health & Services of its Plan to Acquire Spokane Cardiology and Heart Clinics Northwest in Spokane, Washington [hereinafter FTC Statement], available at https://www.ftc.gov/sites/default/files/documents/closing_letters/providence-health-services/spokane-cardiology-and-hearts-clinic-northwest/110321providencestatement.pdf. Additionally, State attorneys general and the FTC recently successfully blocked acquisitions of physician practices in Idaho and Washington State. St. Alphonsus Med. Ctr. v. St. Luke's Health Sys., Ltd., 778 F.3d 775 (9th Cir. 2015) (affirming a lower court decision to block the acquisition of a physician multispecialty group practice by an integrated provider system based on the acquisition's likely anticompetitive effects; complaints were brought by the FTC and the Idaho Attorney General, as well as by competitor hospitals); see also FTC Statement (describing the investigation by the FTC and the WA Attorney General of the proposed acquisition of two cardiology practice groups by an integrated provider system, which the parties abandoned after the FTC expressed concerns about the acquisition's possible anticompetitive effects). However, the antitrust legal framework may not be as well suited to physician mergers as it is to hospital mergers. For example, antitrust review of mergers focuses in part on the overlap in service areas of the merging parties. Physicians in provider networks are often spread out over a large area, and it is harder to define their service area than that of a hospital. For this reason, it may be particularly important for the HPC to play a significant role in monitoring the functioning of the physician marketplace.

SECTION II: TRENDS IN SPENDING AND CARE DELIVERY

Prescription Drug Spending

4

After more than a decade of overall low pharmaceutical spending growth rates, dramatic jumps in spending in 2014 in both Massachusetts and the U.S.—driven in part by the high-profile introduction of new high-cost drugs for the Hepatitis C virus (HCV) — have focused attention on issues of drug prices and utilization, for new cutting-edge therapies as well as generic products. Pharmaceutical innovation has led to important advancements in patient longevity and quality of life. Manufacturers assert that high prices for new drugs reflect the costs of research and development, including research for products that fail to reach the market, and that high prices are necessary to support continued innovation. Further, some suggest that costs for preventative or curative treatments may lead to overall savings. However, with trends in Massachusetts largely mirroring national trends, drug spending has become an increasing concern for payers, providers—especially those engaging in new risk-based payment models —and patients facing out-of-pocket costs for medications. The impact of high-cost drugs on the state's healthcare cost growth benchmark has encouraged the Health Policy Commission (HPC) to closely examine the issue of pharmaceutical spending.

This chapter will describe current drug spending trends, factors influencing future trends, and issues for healthcare stakeholders to consider in addressing drug spending growth, including state-level policy considerations.

GROWTH IN DRUG SPENDING

In 2014, prescription drug spending in Massachusetts grew 13.4 percent per capita (14.1 percent total) over 2013 levels, increasing from about $6.4 billion in 2013 to about $7.3 billion in 2014. In the U.S. overall, prescription drug spending grew by an estimated 11.6 percent per capita (12.5 percent total) in 2014.[i] In both Massachusetts and the U.S. overall, the growth in 2014 represented a dramatic change from previous years of very low growth. In the commercial market, for example, between 2010 and 2013, prescription drug spending grew by less than one percent per year on average in Massachusetts and the U.S. (0.5 percent and -0.8 percent, respectively) (see **Chapter 2**: **"Overview of Spending Trends"**). Drug spending accounted for 13.5 percent of total healthcare expenditures (THCE) in 2014, which represents an increase of one percentage point compared to 2013.

This spending factored substantially in Massachusetts' performance against its benchmark for spending growth. The Center for Health Information and Analysis (CHIA) estimated that the growth in drug spending accounted for approximately one-third of THCE growth.

Importantly, estimates of drug spending do not reflect rebates and other discounts that occur after the initial acquisition price. According to a 2011 report from the Office of the Inspector General at the Department of Health and Human Services, Medicare Part D recoups about 19 percent of its spending on brand-name drugs through off-invoice discounts and rebates, while Medicaid programs recoup about 45 percent of their costs for brand-name drugs.[1] Rebate levels for MassHealth are higher than this national average. The value of rebate invoicing for the MassHealth Primary Care Clinician (PCC) and Fee-For-Service (FFS) plans was 50.1 percent of the pharmacy spending in FY 2015.[ii] (The Affordable Care Act (ACA) mandated that drug manufacturers must pay a minimum rebate of 23.1 percent to Medicaid programs). Rebates for private insurers vary widely. While exact rebate amounts are negotiated confidentially, estimates of typical rebates range from 20 to 30 percent, although rebates by drug can range from the single digits to more than half of gross sales.[2] Rebate amounts impact both the level and trend of spending. More data is needed on rebate amounts to produce more accurate estimates of total spending and growth.

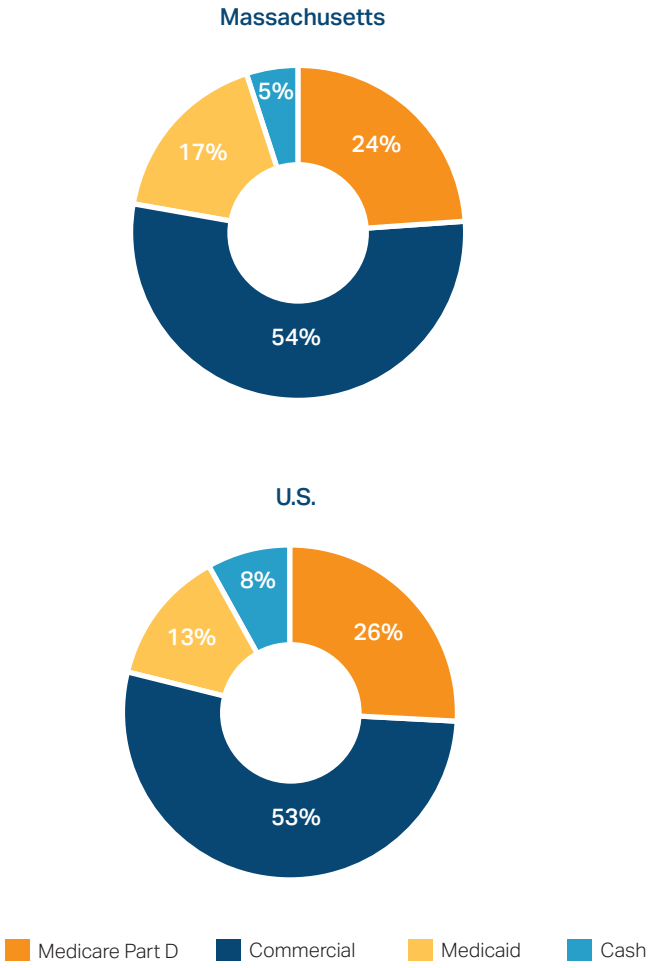
i Data from the Centers for Medicare and Medicaid Services' National Health Expenditures

ii Personal communication with MassHealth.

FACTORS IN 2014 DRUG SPENDING

To better understand Massachusetts-specific drug spending and utilization trends, the HPC obtained detailed state-specific data from national drug data vendor IMS Health Incorporated. The close similarity of spending trends between the Commonwealth and the U.S., as well as the national nature of many drug prices (see **Sidebar: "How drug prices are determined"**), suggest that factors driving U.S. spending trends have similarly shaped the trends in Massachusetts. Furthermore, Massachusetts has a similar payer-mix profile as the U.S., in terms of the distribution of retail prescriptions (see **Exhibit 4.1**).

Exhibit 4.1: Distribution of retail prescriptions in Massachusetts and the U.S., by payer, 2014



Source: IMS Health Incorporated

How drug prices are determined

The amount an insurer will pay for a given drug is almost always determined by negotiations between a pharmacy benefit-management company (PBM), with which the insurer has contracted, and drug manufacturers.[3] PBMs manage drug benefits for many health plans, and act as the intermediary between insurers, manufacturers, and pharmacies. Each of the major PBMs, such as Express Scripts and CVS Caremark, has a national presence, typically thousands of affiliated insurers, and a single formulary (list of drugs covered). This greatly increases PBMs' purchasing power relative to any single state-level insurer and often results in larger discounts and rebates for each of its members.[4] Private payers can also negotiate directly with manufacturers for additional rebates or other concessions.

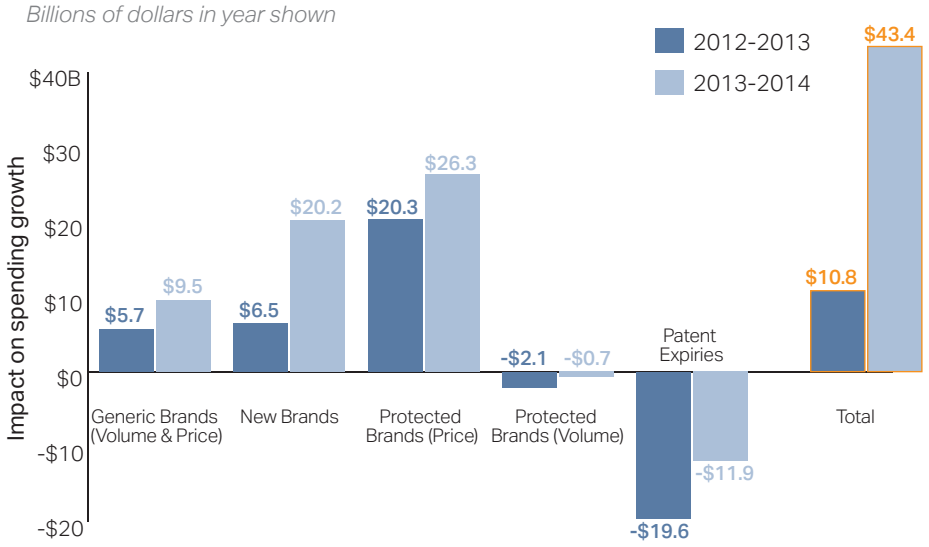
The Medicare program is prohibited by law from negotiating on behalf of all covered lives in the program. Medicare Part D plans may negotiate with manufacturers, but must do so individually. In contrast, the Department of Veterans Affairs negotiates with pharmaceutical companies on behalf of all covered lives, allowing it to secure relatively large discounts.[5] For Medicaid prices, federal law guarantees Medicaid "most-favored customer status," meaning that in exchange for all of a state's Medicaid plans covering a given drug, the drug's manufacturer must offer Medicaid at least the lowest price available to any other payer, including rebates. State Medicaid agencies can negotiate with manufacturers for additional discounts and rebates.

Prices for hospital-administered drugs are usually determined through negotiations between drug manufacturers and health systems, either in the form of Group Purchasing Organizations (GPOs) made up of multiple health systems, or an individual health system (usually one specializing in a particular field, such as oncology). GPOs also often handle negotiations for most other hospital supplies, such as surgical and medical equipment.[6] Hospitals or GPOs can also obtain drugs through negotiations with wholesale purchasers.[7]

Physician offices may purchase physician-administered drugs through PBMs, GPOs, wholesalers or specialty pharmacies that contract with insurers.[8] Medicare Part B typically reimburses physicians' offices at the rate of the drug's average sales prices (ASP) plus six percent; many private payers reimburse physicians similarly.[9]

Exhibit 4.2: Components of U.S. drug spending growth, 2013 – 2014

Billions of dollars in year shown



Source: "Medicine use and shifting costs of healthcare: A review of the use of medicines in the United States in 2014": IMS Institute for Healthcare Informatics, 2015

Three main factors drove the high growth in drug spending in 2014: 1) the entry of new high-cost drugs, 2) price growth for existing drugs, and 3) a low level of patent expirations[10] (see **Exhibit 4.2**). Data from IMS show a 13 percent increase in U.S. total spending for pharmacy (prescription) and non-pharmacy (administered in a hospital or physician office) drugs. Total U.S. estimated drug spending increased by $43.4 billion, of which about $16 billion was offset by rebates on branded drugs on the market for at least two years (data not shown).[iii] Increases in spending were partially offset by reductions in spending due to patent expirations, which represented the lowest impact from patent expiration in the last five years.[10]

Sovaldi and other new drugs for HCV

Among the new drugs impacting spending in 2014, much attention has focused on the introduction of new Hepatitis C virus (HCV) therapies led by Gilead Sciences' Sovaldi, which became the nation's top-selling drug in 2014.[10] Introduced at the end of 2013, Sovaldi offered a significant advancement for people with HCV, with a high cure rate and substantially fewer toxic side effects and shorter treatment course than previously available options. However, Sovaldi entered the market with a list price of $84,000 per patient for a 12-week treatment, rivaling the high prices more typical of "orphan drugs" for rare diseases.[iv,11] The combination of high price and relatively high prevalence of HCV (3.2 million Americans were estimated to be infected in 2013[12]) resulted in Sovaldi earning over $10 billion in sales in 2014.[13] In Massachusetts, the introduction of Sovaldi and other new HCV drugs caused spending on HCV drugs (non-HIV antivirals) to rise from $96 million in 2013 to $436 million in 2014, more than a 350 percent increase (see **Exhibit 4.3**).

Comparative effectiveness analysis suggests that Sovaldi is very effective clinically, as well as cost-effective in the long-term relative to earlier HCV treatments. However, the drug's high short-term costs have resulted in some payers limiting access to Sovaldi through various medical necessity criteria, despite its major advancement in HCV treatment and potential to prevent downstream medical spending for some patients. The Institute for Clinical and Economic Research (ICER) (see **Sidebar: "Value-based price benchmarks and the Institute for Clinical and Economic Review"**) found that despite Sovaldi's "very-cost effective" performance at $20,000 per QALY (quality-adjusted life year) gained versus the previous standard of care, its long-term value does not translate into budgetary feasibility for payers. The determination of long-term cost-effectiveness is due to the potential for downstream savings: if a patient's HCV is cured by a regimen of Sovaldi, this prevents the need for repetitive, less effective treatments, such as repeated doses of interferon. For a small subset of patients, effective treatment will also prevent liver failure and the need for a liver transplant.

Any long-term cost-offsets could require as long as 20 years to manifest for payers.[14] In the meantime, Sovaldi's potential short-term budget impact was calculated to represent a per-member per-month premium increase of 5 percent, which is an increase at least five times higher than what ICER estimated state budgets can manage for individual new drugs without pushing up premiums at an unsustainable rate.[15]

iii This estimate is approximate and does not factor in rebates for new brands, defined as products launched in the last two years, or any additional discounts for generic drugs.

iv Orphan drugs are defined as treatment for diseases with less than 200,000 known cases. Orphan drugs are often high-priced agents; industry argues that due to low utilization, high-prices are necessary to recoup research costs.

Value-based price benchmarks and the Institute for Clinical and Economic Review (ICER)

ICER is a nonprofit organization dedicated to assessing the value of medical treatments. ICER's mission includes evaluating the clinical effectiveness, cost-effectiveness and potential budgetary impact of drugs and other treatments. For each drug, ICER seeks to determine a "value-based price benchmark" that takes into account how much better the drug is at improving patient outcomes over the long-term, tempered by thresholds at which additional new costs would contribute to growth in health care costs exceeding growth in the overall national economy. The value-based price benchmark represents a cost-effective price at which payers and providers would not be forced to limit the treatment's availability to patients.[16] Among its recent reports ICER has evaluated the value of Sovaldi, Harvoni and Viekira Pak for treating HCV[14], PCSK9 inhibitors for treating high LDL cholesterol, and Entresto for heart failure.[17] Reports expected in 2016 include new drugs for asthma, diabetes, multiple myeloma, multiple sclerosis, and lung cancer.

Several other groups are starting to examine the issue of "value" for new drugs. These include DrugAbacus at Memorial Sloan Kettering, the American Society of Clinical Oncology, the American College of Cardiology / American Heart Association, and the National Comprehensive Cancer Network, among others.

A number of commercial and MassHealth managed care organization (MCO) health plans reported that the introduction of HCV drugs contributed to significant financial losses in 2014, including Neighborhood Health Plan, Harvard Pilgrim Health Plan, Fallon Community Health Plan, Tufts Health Plan, and Blue Cross Blue Shield, among others.[18,19,20] For example, Blue Cross Blue Shield cited Sovaldi as a "key cause" of its higher-than-expected $118.8 million operating loss in 2014 as well as its net loss of $41.8 million in the first quarter of 2015.[21,22] Although payers carefully monitor the pipeline of drugs likely to enter the market, Sovaldi entered the market earlier than expected, due to receiving fast-track approval from the Food and Drug Administration (FDA) through the breakthrough therapy designation,[v] hindering insurers from accounting for the costs in their premiums.

Spending for new HCV drugs may have particularly impacted MassHealth in 2014, compared to other state Medicaid programs. MassHealth covered about 20 percent of all prescriptions for new HCV drugs in Massachusetts,[vi] while in the U.S. overall, Medicaid covered about 9 percent of new HCV patients in 2014.[vii,10] In addition to MassHealth's overall coverage expansion in 2014, MassHealth has among the most generous coverage policies for new HCV drugs compared to other state Medicaid programs. In line with consensus guidelines from the American Association for the Study of Liver Disease and the Infectious Diseases Society of America, MassHealth PCC / FFS did not restrict access through conditions for coverage, such as those related to progression of clinical symptoms or abstinence from substance use, although many other states did implement these restrictions in 2014.[23,24] In November 2015, the Centers for Medicare & Medicaid Services (CMS) sent a letter instructing state Medicaid programs to examine drug benefits in both fee-for-service and Medicaid managed care organization contracts to "ensure that limitations do not unreasonably restrict coverage of effective treatment" with these drugs.[25]

PBMs and payers employ a range of strategies in efforts to obtain lower prices, but competition remains an important factor in price negotiations. For example, Gilead increased rebate levels for Sovaldi as alternative HCV drugs became available. Before the release of AbbVie's Viekira Pak and Gilead's subsequent HCV drug, Harvoni, Sovaldi's estimated median discount for commercial payers was around 14 percent and discounts for Medicaid programs— above the required 23 percent— were minimal.[26,27] As competition increased, Gilead announced that discounts from list price for their HCV drugs would average 46 percent in 2015, and rebates would exceed 50 percent for certain Medicaid programs and the Department of Veteran Affairs.[28] Furthermore, in 2015, the PBM ExpressScripts removed Sovaldi from its formularies in favor of Viekira Pak,[29] and 25 state Medicaid agencies jointly negotiated for a discount on Viekira Pak in exchange for designating it the preferred option over Sovaldi.[viii] While Massachusetts is not among these states, MassHealth collected supplemental rebates on Harvoni and Viekira Pak in 2015 at a discount exceeding 50 percent. [ix]

v Section 902 of the Food and Drug Administration Safety and Innovation act gave the FDA power of expedited approval for breakthrough therapy drugs. The law defines a breakthrough therapy as 1) any drug or combination that 2) treats a serious or life-threatening disease and 3) preliminary evidence shows that drug demonstrates substantial improvement over existing therapies.

vi Data from IMS Health Incorporated.

vii Defined as new to prescriptions for Sovaldi, Harvoni, Incivek, Olysio, Victrelis, and Viekira Pak.

viii States and districts include: Alaska, Connecticut, Delaware, Florida, Idaho, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Virginia, West Virginia, Wisconsin, and Washington D.C.

ix Personal communication with MassHealth.

INCREASES IN SPENDING IN OTHER DRUG CLASSES

While new HCV drugs had a clear impact on pharmaceutical spending, spending increased substantially across many drug classes in 2014. Including spending for both pharmacy and non-pharmacy drugs in Massachusetts, many of the top drug classes had double-digit spending increases year over year (see **Exhibit 4.3**). For oncology drugs, the therapy class for which spending is highest in Massachusetts and the U.S., spending in Massachusetts grew by 12.3 percent from 2013 to 2014 to almost $700 million in 2014. Insulin spending grew 19.8 percent in from 2013 to 2014, and more than doubled from 2011 to 2014, from $209 million to $433 million. Net of rebates and discounts, prices for branded drugs on the market for at least two years grew 5.5 percent from 2013 to 2014, less than the net 6.8 percent growth rate from 2012 to 2013.[30] However, while annual spending growth has been consistently high for many drug classes, total spending in earlier years was offset by decreases in other drug classes, due to factors including generic entry (the decrease in spending for cholesterol reducers following Lipitor's patent expiration in 2011 is one notable example).

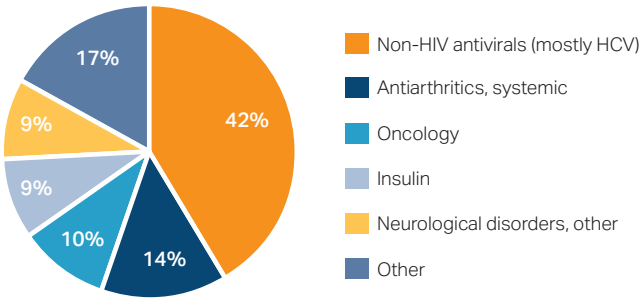
Exhibit 4.3: Massachusetts' top 20 drug-therapy classes by spending, with growth rates, 2010 – 2014

	Spending					Growth			
	2010	2011	2012	2013	2014	2010-2011	2011-2012	2012-2013	2013-2014
Oncology	$506.1	$520.3	$578.5	$620.0	$696.4	2.8%	11.2%	7.2%	12.3%
Antiarthritics, Systemic	$228.4	$264.1	$316.2	$390.6	$501.5	15.6%	19.7%	23.5%	28.4%
Non-HIV Antivirals (mostly HCV)	$64.4	$88.7	$107.2	$96.4	$436.0	37.7%	20.9%	-10.1%	352.3%
Insulin	$182.0	$209.3	$270.3	$361.4	$432.9	15.0%	29.1%	33.7%	19.8%
Antipsychotics	$499.7	$567.1	$405.9	$342.5	$355.4	13.5%	-28.4%	-15.6%	3.8%
HIV Antivirals	$227.0	$255.4	$301.4	$331.1	$348.0	12.5%	18.0%	9.9%	5.1%
Inhaled Steroids	$256.8	$277.8	$307.9	$345.1	$347.5	8.2%	10.8%	12.1%	0.7%
Immunomodulators	$128.9	$141.1	$171.3	$206.4	$269.9	9.5%	21.4%	20.5%	30.8%
GI Anti-Inflammatory	$164.4	$185.1	$300.7	$335.6	$257.6	12.6%	62.5%	11.6%	-23.2%
Analeptics	$177.1	$207.1	$243.1	$248.1	$243.4	16.9%	17.4%	2.1%	-1.9%
Neurological Disorders, Other	$77.3	$108.4	$134.6	$171.0	$239.3	40.2%	24.2%	27.0%	39.9%
Cholesterol Reducers	$312.6	$340.1	$262.2	$225.5	$223.1	8.8%	-22.9%	-14.0%	-1.1%
Bronchodilators	$166.5	$187.3	$219.3	$221.1	$207.2	12.5%	17.1%	0.8%	-6.3%
Anticoagulants	$274.4	$260.8	$215.2	$172.0	$178.5	-5.0%	-17.5%	-20.1%	3.8%
Analgesic Narcotics	$133.0	$139.0	$151.2	$163.4	$168.2	4.5%	8.8%	8.1%	2.9%
Specific Antagonists	$88.2	$111.3	$142.2	$152.6	$160.0	26.2%	27.8%	7.3%	4.8%
Antidepressants	$249.0	$230.0	$200.2	$216.3	$157.6	-7.6%	-13.0%	8.0%	-27.1%
Hematinics	$216.2	$182.6	$160.1	$155.6	$153.0	-15.5%	-12.3%	-2.8%	-1.7%
Non-Insulin Diabetes	$141.4	$142.0	$133.9	$128.2	$149.9	0.4%	-5.7%	-4.3%	16.9%
Seizure Disorders	$113.2	$118.0	$115.3	$136.0	$148.9	4.2%	-2.3%	18.0%	9.5%

Source: IMS Health Incorporated

The HPC analyzed the top drug-therapy classes contributing to Massachusetts' drug spending growth in 2014, based on IMS data that includes spending for both pharmacy and non-pharmacy drugs. In 2014, 42 percent of total drug spending growth was due to growth in antivirals (mostly HCV drugs), with spending growth in anti-arthritics, oncology, insulin, and neurological disorder therapies also representing particularly high contributions (See **Exhibit 4.4**).

Exhibit 4.4: Top therapy classes by contribution to 2014 drug spending growth in Massachusetts



Note: Spending includes drugs provided in both pharmacy (prescription) and non-pharmacy (hospital and physician office) settings. IMS estimates are not directly comparable to Center for Health Information and Analysis methodology; top contributions may represent upper bound estimates.
Source: IMS Health Incorporated

In addition to spending on new and branded drugs, price increases among generic drugs are also a factor in rising drug spending. Payers in Massachusetts have highlighted this issue. During the 2015 Cost Trends Hearing, Harvard Pilgrim Health Care leadership noted the price for some generics have doubled or tripled in recent years, leading the insurer to place some generics on higher tiers. Factors cited for generic price increases include manufacturing difficulties, an FDA backlog in generic drug approvals, unexpected increases in demand, and manufacturer consolidation, as well as accusations of collusion among generic drug manufacturers.[31-35] One example of generic price increases includes prices for Narcan (Naloxone), used to reverse the effects of opiate overdose. Generic Narcan has risen in price by 50 percent or more in some cases as providers have increased the focus on use of the drug in the effort to counter the opioid-addition epidemic.[36] In August 2015, Massachusetts Attorney General Maura Healey negotiated with manufacturer Amphastar Pharmaceuticals to secure a deal to lower the drug's price for municipalities in Massachusetts. A full understanding of drug spending trends will require ongoing analysis of prices both for branded drugs and generics.

CONSUMER IMPACT

The prices of high-cost drugs impact affordability for patients. Cost-sharing for a specialty-tier[x] drug under Medicare Part D is usually between 25 and 33 percent of the drug's negotiated price.[37] In 2013, 23 percent of commercial plans had a specialty tier of cost-sharing.[38] All plans sold on ACA exchanges have specialty tiers, with the average bronze plan offering 34 percent cost-sharing for these drugs. While patient liability is limited through ACA out-of-pocket maximums, these limits still represent a substantial financial burden for many patients.[xi] Furthermore, even covered drug costs ultimately impact all consumers through the inclusion of these costs in insurance premiums.

The high cost of drugs may be galvanizing public support for government intervention in drug pricing: an April 2015 Kaiser Family Foundation poll found that 60 percent of Americans thought that action to lower drug prices should be a "top priority" for the federal government.[39] Furthermore, a November 2015 poll conducted by the Harvard T.H. Chan School of Public Health found that 69 percent of Americans favor the Medicare program negotiating with drug companies to lower the prices of prescription drugs for seniors, with high approval among both Republicans (67 percent) and Democrats (77 percent).[40]

TRENDS IN MARKET COMPOSITION

The relatively high growth rate for high-cost drugs over time supports the need for continued focus on the issue of drug spending. Spending on specialty drugs—typically defined by prices over $6,000[xii]—has increased at a faster rate than traditional drugs. In Massachusetts, between 2010 and 2014, spending on specialty drugs grew by 67 percent, compared with 16 percent among traditional drugs, leading specialty drugs to grow from 26 percent of all drug spending in Massachusetts in 2010 to 34 percent in 2014, consistent with national trends.

An estimated 40 percent of drugs under development in April 2014 were considered to fall into the specialty

x Medicare Part D sponsors to designate drugs in specialty tier when the dollar-per-month costs exceeds the threshold established by CMS in the annual call letter ($600 in 2014) and when the majority of prescription drug events exceeds the dollar threshold. https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovGenIn/Downloads/CY-2016-Specialty-Tier-Methodology.pdf

xi The maximum out-of-pocket limit for an exchange plan in 2016 is $6,850 for an individual plan and $13,700 for a family plan.

xii Specialty therapies are defined by IMS Health as products that are often injectable, high-cost, biologics or require cold-chain distribution.

category, with some estimates suggesting that spending on these drugs may quadruple by 2020.[41,42]

Trends in biological drugs (biologics) also merit particular attention. These drugs are comprised of or manufactured in biological sources, rather than solely the chemical compounds that make up traditional small molecule drugs. Most biologics are considered specialty drugs due to their typically high prices. In Massachusetts, spending on biologics grew 56 percent from 2010 to 2014, representing 28 percent of all drug spending in 2014, up from 23 percent in 2010. These drugs have distinct issues for generic competition that impact traditional spending patterns. In 1984, the Hatch-Waxman Act provided the FDA with the ability to approve generic versions of small molecule drugs when they exhibit equivalency and interchangeability properties, but biologics were not included. However, the ACA included FDA authorization to approval biosimilars for biological drugs by testing bioequivalency and determining interchangeability. The FDA's first biosimilar approval (Zarxio) only found bioequivalency, but did not determine interchangeability, which means that it cannot be automatically substituted for the branded product, as with traditional drugs. While the biosimilar market may be beginning to form, the extent to which this market will bring down prices similar to traditional generic markets is highly uncertain.

EXPECTATIONS FOR FUTURE SPENDING

While 2014 had unique factors for spending, many trends strongly suggest that large increases in drug spending will continue, in the absence of policy changes. Expensive and complex products—specialty and biologic drugs— have been gaining in their share of all drug spending. While increases in prices and spending on new products have long been offset by expiring patents, the complex market for biologics is unlikely to exactly mirror traditional levels of substitution with lower-cost generic products, as described above.

Furthermore, the phenomenon seen with the new HCV drugs—high per-patient "orphan drug" cost for a large base of potential patients—is likely to be replicated with new, innovative entrants. In particular, the next such entrants are in the PSCK9 inhibitor drug class to treat high cholesterol; the first two PSCK9 products gained FDA approval in summer 2015. Sanofi & Regeneron's joint entrant, Praluent, and Amgen's Repatha, launched with list prices of $14,600 and $14,100 a year, respectively.[43] As a point of comparison, the list price for the brand-name statin Crestor is approximately $3,000 a year.[44] While the FDA approved the two PSCK9 inhibitors only for patients with high cholesterol who are resistant to statins and other traditional therapies, off-label prescribing practices may capture additional populations. As with the new HCV therapies, the effect of competition on pricing and rebates will be important as additional drugs in the class enter the market.

Given these factors, high drug spending growth is likely to continue. Data from the first three quarters of 2015 shows drug spending increased of over 8 percent in the U.S. relative to the same time period in 2014.[xiii] The Centers for Medicare and Medicaid Services (CMS) estimates annual high single digit spending growth over the next decade.[45]

POLICY CONSIDERATIONS

Rapid growth in drug spending has led to increased pressure to slow that growth. State and federal governments along with payers and other stakeholders have considered a number of options and initiatives highlighted below.

Value-based price benchmarks

With a grant received in July 2015, ICER plans to review 15 to 20 new high-impact drugs nearing FDA approval over the next two years. Their review will evaluate comparative clinical effectiveness, potential budget impact, and a "value-based price benchmark." The price benchmark begins with calculating a sustainable price that reflects the long-term comparative clinical and cost-effectiveness of the drug; the benchmark price also reflects the potential budget impact, including any expected offsets in decreased medical spending over a five year time horizon as a result of the drug's use. Examples from health care and other industries suggest that the public availability of target prices can influence individual price negotiations, such as the influence of Medicare pricing on commercial payment levels. Media reports suggest that ICER's work is drawing interest and support from insurers.[46]

Risk-based contracting

In addition to traditional management tools, some payers have considered value in coverage through developing risk-based contracting with drug manufacturers, such as price-volume or performance-based models. While these agreements may be more complex to administer compared to supplemental rebate strategies, numerous examples of

xiii 8.4 percent growth in prescription-drug spending in the U.S. from September 2014 to September 2015.

such arrangements have been implemented to date in Canada, Europe, and the U.S. For example, CIGNA reached agreements with manufacturers to receive reimbursement for the cost of treating a heart attack that occurred while patients were taking lipid-lowering drugs, and Merck agreed to refund costs for a particular drug for patients whose symptoms did not improve within six months.[47] Harvard Pilgrim announced a deal in November 2015 with Amgen for a performance-based rebate model, in which the insurer will receive rebates on Repatha, a new PCSK9 drug, if the drug fails to meet certain performance targets.[48] Price-volume agreements, in which manufacturers reduce prices or increase rebates for utilization above a set volume, could be particularly valuable for drugs with high potential for off-label use, such as PCSK9s.

Academic detailing for high-impact choices

In FY2009, the Massachusetts state budget authorized the Department of Public Health to start and operate an academic detailing program, an evidence-based outreach and education program designed to provide information and education on the therapeutic and cost-effective utilization of prescription drugs to physicians, pharmacists and other health care professionals (although the state has funded the program only sporadically since its inception). Provider organizations can analyze data to identify providers who have outlier prescribing patterns, and use this model for targeted provider education. Academic detailing can be particularly valuable in cases of high-impact drugs such as those with a high cost, high risk of addiction, or potential for over-prescribing (e.g., antipsychotics for adolescents).

Clinical protocols and guidelines

Particularly for high-cost drugs, it can be valuable for payers and providers to develop consensus-based treatment protocols and guidelines for both appropriate use of new products, as well as appropriate use of lower-cost drugs when available. Important considerations for guidelines include efficacy and value, as well as ensuring patient access to necessary therapies. Alignment and education between specialty societies, payers, and providers are important for these efforts.

State-level strategies

While many issues in drug pricing require action from the federal government—such as allowing Medicare to negotiate prescription drug prices— state-level policies that can affect price and utilization in addition to APMs should be considered in the Commonwealth.[xiv] Furthermore, as the increase in drug spending in 2014 was a major contributor to the state's first failure to meet the benchmark, the HPC must consider questions of how to factor spending on new technology in general, and drugs in particular, in considering performance against the benchmark, as well as how this spending should factor in payer and provider accountability for total spending.

Group purchasing options

Multiple examples and options exist for purchasing models where groups jointly negotiate for higher rebates or lower pricing, as well as achieve administrative savings.[49] While MassHealth has demonstrated the ability to negotiate high rebates generally, other states have different models, and it is important for the Commonwealth to continue to review best practices and identify opportunities to maximize value in spending.

For example, Massachusetts is one of 31 states that participates in a single-state supplemental Medicaid rebate agreement, and Massachusetts does not participate in any multi-state supplemental rebate agreement (27 states participate as of June, 2015).[50] However, it is not clear which agreement types may achieve the highest savings. Another model serving (non-Medicaid) government purchasers in 47 states, the Minnesota Multistate Contracting Alliance for Pharmacy, reports average savings of about 24 percent below average wholesale price (AWP) for branded drugs and 65 percent AWP for generic drugs, in addition to administrative savings.[49]

Other models focus on achieving additional rebates on top of those rebates required by law or negotiated through PBMs. Many supplemental rebate arrangements between manufacturers and purchasers involve preferred drug lists in exchange for larger discounts, such as the recent example of 25 state Medicaid programs forming a group purchasing agreement for HCV drugs. Furthermore, some models aim to extend discounts to all state payers. For example, legislatures in California and Ohio are currently considering bills to require state agencies to negotiate drug prices that are no higher than those negotiated by the Department of

xiv Several bills have been proposed by Massachusetts legislators to limit the impact of drug price increases on consumers, including reimbursing government retirees for high drug prices (sponsored by Representatives Alan Silvia and Michael Rodrigues), establishing a statewide discount program for pharmaceuticals by creating a PDP through which the Commonwealth can purchase drugs (sponsored by Rep. John Scibak), capping the costs of certain generic drugs (sponsored by Rep. Paul Heroux), and requiring drug manufacturers to provide the methodology behind their pricing and potentially capping the prices of certain drugs (sponsored by Senator Mark Montigny).

Veterans Affairs. More research is needed on best practices for group purchasing models and potential for savings impact under different models.

Rebate data and other transparency efforts

Collecting and incorporating drug-rebate information is crucial for accuracy in tracking drug spending. Collection strategies should consider the confidentiality of net pricing agreements in their design. CHIA may already have the authority necessary to collect information on aggregate rebates and other discounts from payers; collection of this information, and calculating net spending amounts for drugs would be extremely valuable for the Commonwealth.

Furthermore, increasing transparency regarding manufacturer methodology for setting prices for specific drugs (with respect to costs to develop and distribute) may support efforts for value-based pricing, either by manufacturers setting the initial price or in subsequent price negotiations.

Considerations for the benchmark and alternative payment methods

The benchmark for total health care expenditures in Chapter 224 includes all services and all payers, in recognition of the holistic nature of health care and healthcare markets, and anticipates that the spending growth rate would include higher spending for new innovative therapies as well as lower spending in other areas due to improvements in efficiency. The impact on the benchmark from high-cost high-value product entrants will be a recurring issue: Sovaldi and other high-cost HCV drugs impacted the benchmark in 2014, and we can expect to see new high-cost drugs, devices, and other technologies in later years as well. Including broad elements of health care spending in the benchmark maintains pressure to create responsible and innovative strategies to contain costs, with ongoing attention to access and quality. Although many aspects of drug spending are outside the direct control of payers and providers— given that drug prices are largely determined under a national framework and medically necessary access must be preserved— consistent with the approach of Chapter 224, payers and providers do have opportunities to affect spending and utilization, through price negotiation, purchasing, establishing appropriate clinical guidelines and other strategies. Furthermore, new technologies may potentially result in savings.

Given that new innovative therapies may affect different market segments differently, it is essential for policy-makers to consider context when assessing the performance of an individual entity and the contribution of that entity to health care spending.

The same context is relevant for provider risk contracts. Risk-adjustment and other contractual elements designed to address actuarial risk may not adequately address the impact of high-cost drugs and technologies entering the market. Where feasible, risk-based contracts should account for expected spending for clinically appropriate drugs, and should be adjusted retroactively to account for fast-tracked technology that could not be expected in advance, particularly accounting for relevant differences in patient panels. In summary, policy must continue to be examined to ensure that incentives and approaches adapt as new technologies continue to change the medical landscape.

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SECTION II: TRENDS IN SPENDING AND CARE DELIVERY

Hospital Outpatient Spending

5

Hospital outpatient departments provide a range of clinical services, from the simple to the complex, including emergency department (ED) visits, surgeries, imaging, and regular doctor visits. Many outpatient services can be performed in multiple settings:, including more intensive inpatient settings and less expensive non-hospital settings, such as a physician's office or freestanding facility (such as an ambulatory surgical center (ASC) or freestanding laboratory or radiology center).

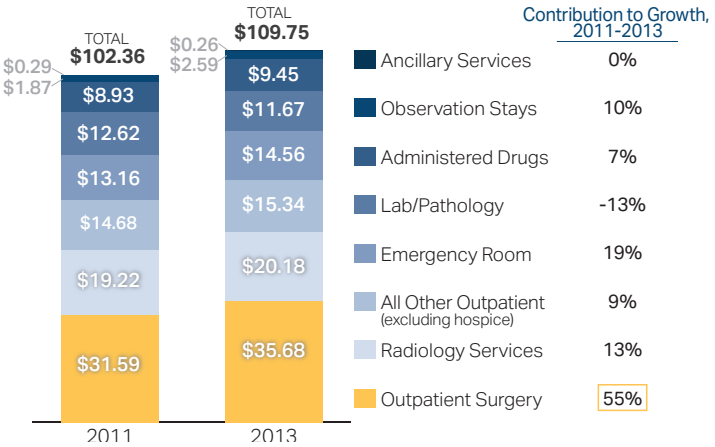
Outpatient spending has grown rapidly in Massachusetts in recent years, increasing an average 6 percent a year in the Medicare population and an average 3 percent a year in the commercial population between 2010 and 2014. In 2014, outpatient spending represented 15 percent of Medicare spending and 24 percent of commercial spending. Given the high annual growth in hospital outpatient spending, the HPC examined trends driving spending in this category of service.

HOSPITAL OUTPATIENT SPENDING IN MASSACHUSETTS

Compared to the U.S. overall, Massachusetts residents have higher utilization of outpatient services. In 2013, hospital outpatient utilization in Massachusetts outpaced the U.S. average. Data show 2013 per-capita ED visits and non-ED outpatient visits were higher than the U.S. average by 14 percent and 54 percent, respectively.[i] While Massachusetts Medicare fee-for-service (FFS) beneficiaries spent $400 more annually per beneficiary on hospital outpatient care than the U.S. average in 2014 (see **Chapter 2**: "**Overview of Spending Trends**"), annual spending growth appears similar. Between 2010 and 2014, Medicare outpatient spending grew 5.8 percent a year in Massachusetts and 5.7 percent a year in the U.S.

Outpatient spending consists of multiple types of services, which have grown at different rates (see **Exhibit 5.1**). For commercially insured patients, outpatient surgery, in which the patient typically requires hospital care for less than 24 hours, represented one-third of outpatient spending per member per month (PMPM) in 2013. Spending PMPM in outpatient surgery grew by 13 percent from 2011 to 2013, with growth in outpatient surgery accounting for more than half (55 percent) of total hospital outpatient spending growth between those years.

Exhibit 5.1: Commercial spending per member per month in Massachusetts by outpatient service category, 2011–2013
Per member per month spending



Source: HPC analysis of Massachusetts All-Payer Claims Database, 2011-2013

FACTORS CONTRIBUTING TO SPENDING GROWTH

The level and growth of hospital outpatient spending are driven by a number of factors. Some services have shifted from inpatient to hospital outpatient, while others have shifted from non-hospital settings—such as a physician office, ambulatory surgical center, or other freestanding facility— to hospital outpatient (see **Exhibit 5.2**). Technological innovation has facilitated a shift from inpatient to outpatient procedures and also increased overall use of these outpatient procedures. For example, surgical procedures have become easier to deliver in an outpatient setting due to advances in technology, such as innovation

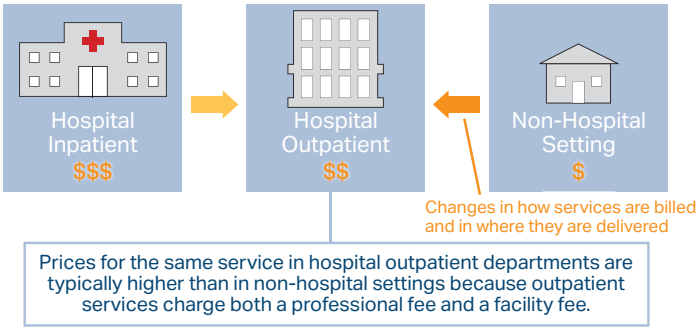
i Kaiser family Foundation State Indicators

in minimally invasive procedures, better anesthesia, and more effective therapies to manage pain at home.[1] With surgical innovations allowing patients to have same-day surgeries and shorter recovery times, patient use of outpatient surgeries has surged overall, reflecting a shift from inpatient to outpatient procedures, but also an increase in total volume.[2] Shifting care from inpatient to outpatient settings may reduce health care spending if care is moved to a less costly setting. However, other factors could offset savings, such as increases in total volume or price increases.

Volume has also shifted for a number of services from non-hospital settings to hospital outpatient. Factors in this shift include market consolidation, including hospitals acquiring physician groups and licensing them as satellite outpatient departments. In these cases, the physician office bills through the hospital as an outpatient department.

Shifts in setting of care from non-hospital settings to hospital outpatient can increase costs, because prices for the same service in hospital outpatient departments— with both a professional fee and a facility fee—are typically higher than in non-hospital settings (see **Sidebar: "Hospital outpatient prices"**).

Exhibit 5.2: Shifts in settings to hospital outpatient departments



Hospital outpatient prices

In the Medicare payment system, payments for services provided in a hospital outpatient department have two components: a professional fee and a facility fee. This facility fee is intended to reflect the overhead costs associated with a hospital outpatient department (e.g., equipment, ancillary staff, requirements to provide 24-hour care). In contrast, payments for services provided in a physician office have only a professional-fee component. This fee is higher than the professional fee in a hospital outpatient department because it factors both professional costs and facility costs associated with overhead in a physician's office. In all, the fees for services provided in a physician office are typically considerably less than the combined payment amount for the professional fee and facility fee in a hospital outpatient department. For example, Medicare pays almost double the price for a 15-minute office visit to a practice billing as a hospital outpatient than to a freestanding practice for the same service (see **Exhibit 5.3**). Physician practices that are owned by a hospital can be licensed or re-licensed as hospital outpatient departments; in these cases, services are often billed at the higher rates through the addition of hospital facility fees, even though there has been no change in the location, patient mix, or the physicians performing the service, potentially raising both total medical spending and patient cost-sharing. Commercial payers tend to mimic Medicare's rules, and thus patients may receive two bills for their visit: a bill from their physician for professional services and a second bill from the associated hospital. However, commercial payers are increasingly focusing on negotiating contracts that would prevent paying facility fees in these cases.

Exhibit 5.3: Differences in Medicare program payments and beneficiary cost sharing for midlevel outpatient office visits provided in freestanding practices and hospital-based entities, 2014

	Service provided in freestanding physician practice	Service provided in a hospital outpatient department		
	MPFS physician office rate (a) "Professional fee"	MPFS physician facility rate (a) "Professional fee"	OPPS rate (b) "Facility fee"	Total hospital-based rate
Program payment	$58.46	$41.26	$74.02	$115.28
Beneficiary cost sharing	$14.62	$10.32	$18.51	$28.83
Total payment	$73.08	$51.58	$92.53	$144.11

Note MPFS: Medicare physician fee schedule. OPPS: Outpatient Prospective Payment System. (a) Paid under the Medicare physician fee schedule. (b) Paid under the OPPS.

Source: Health Affairs. Health Policy Brief: Site-Neutral Payments, 2014. Medicare Payment Advisory Commission table updated by Health Affairs with 2014 payment rates from Centers for Medicare and Medicaid Services website. The Current Procedural Terminology code used for this example under the physician fee schedule is 99213. The Healthcare Common Procedure Code Set code used for this example under the outpatient prospective payment system (OPPS) is G0462

Shifts between inpatient and outpatient settings

Surgical procedures have been shifting from the inpatient to the outpatient setting for a number of years. In the U.S., 65 percent of all surgeries across all payers in 2012 were performed in an outpatient setting, compared with 51 percent in 1990 and 16 percent in 1980.[3] For commercially insured patients in Massachusetts, the HPC found that 90 percent of all surgical procedures in 2013 were performed outpatient.

From 2011 to 2013, the number of procedures PMPM grew by 2.4 percent in outpatient settings and decreased by 18.4 percent in inpatient settings.[ii] Over the same time period, spending for hospital outpatient surgeries increased 14.6 percent PMPM (from $29.50 PMPM to $33.80 PMPM), while spending for inpatient surgery decreased by 1.9 percent PMPM (from $36.40 PMPM to $35.70 PMPM). Outpatient spending now accounts for roughly two-thirds of all hospital revenue among community and teaching hospitals in Massachusetts and half of hospital revenue among academic medical centers[4] (see **Chapter 2: "Overview of Spending Trends"**).

Given that some surgical procedures cannot be appropriately performed on an outpatient basis, the HPC examined volume and spending trends for five procedures commonly performed in both settings: laparoscopic cholecystectomy, laparoscopic appendectomy, arthrodesis, laparoscopic total hysterectomy, and laparoscopic vaginal hysterectomy.[iii] Between 2011 and 2013, the distribution of setting of care for these procedures shifted dramatically, with the share performed outpatient rising from 48 percent in 2011 to 70 percent in 2013 (see **Exhibit 5.4**). Overall, the total volume PMPM of the five procedures increased by about 5 percent from 2011 to 2013.[iv,v]

ii From 2011 to 2013, the total number of surgical procedures decreased by 3.9 percent, from 415,772 to 399,674. The number of inpatient procedures decreased by 21.5 percent, and outpatient procedures decreased by 1.5 percent. This decrease may be attributed to a drop in the commercially insured population from 2011-2013, as total enrollees and member months declined by 4.7 percent and 3.8 percent, respectively.

iii Procedures were selected reflecting the highest volume billed by surgeons in 2013, where at least 10 percent of the surgeries occurred at an inpatient hospital and at least 10 percent occurred in an outpatient setting.

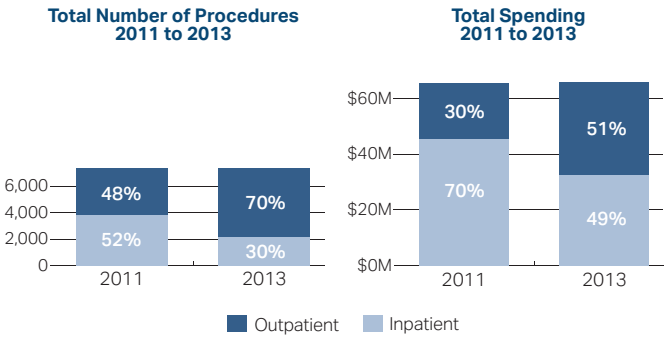
iv The total number of procedures in the sample increased by about 1 percent (from about 7,300 in 2011 to 7,340 in 2013); the number of member months in the sample decreased overall during this time period.

v Growth in laparoscopic total hysterectomy (for which number of procedures per 1,000 member months doubled from 0.018 in 2011 to 0.035 in 2013) accounts for most of the total volume growth.

Despite shifts to lower-cost settings of care, total spending on these five cross-over procedures grew slightly, at about 5 percent from 2011 to 2013 (from $2.29 PMPM to $2.40 PMPM). However, spending growth for these procedures would likely have been higher without these shifts in setting of care. Prices for these procedures increased dramatically over this period, with inpatient prices increasing more than outpatient prices. This price growth appears to have consumed potential savings from the shift in site of care. Average prices for these procedures grew substantially between 2011 and 2013, with growth in inpatient prices ranging from 12 to 21 percent, and growth in outpatient prices ranging from 4 to 17 percent. At 2013 prices, if setting of care and volume had remained at 2011 levels, the HPC estimates that total spending for these procedures in 2013 would have been about 15 percent higher ($75 million versus $65 million).

Exhibit 5.4: Change in volume for five major cross-over surgical procedures performed in acute care hospitals, 2011 – 2013

Volume and spending for laparoscopic cholecystectomy, laparoscopic appendectomy, arthrodesis, laparoscopic total hysterectomy, and laparoscopic vaginal hysterectomy



Note: The five major cross-over procedures were identified as the highest-volume procedures billed by surgeons in 2013, where at least 10 percent of the surgeries occurred at an inpatient hospital and at least 10 percent occurred in an outpatient setting. Total spending includes insurer and enrollee payments for the facility portion of the surgical procedure. Commercial FFS spending does not include capitated payments. (see **Technical Appendix**).

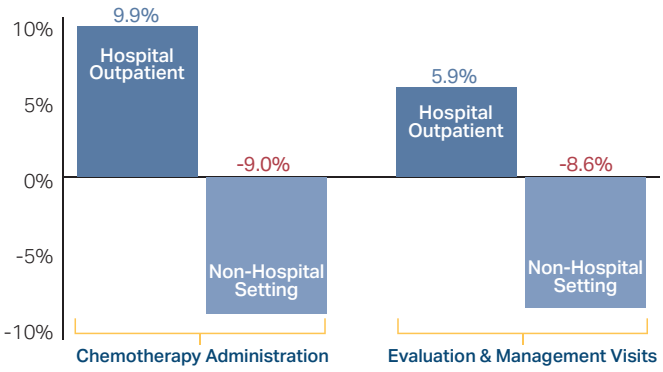
Source: HPC analysis of Massachusetts All-Payer Claims Database, 2011-2013

Shifts between non-hospital and hospital outpatient settings

Services have also shifted to the hospital outpatient setting from non-hospital settings. The HPC examined volume and spending variations between HOPD and non-hospital settings for select imaging, laboratory tests, colonoscopy and endoscopy procedures, and chemotherapy administration that can be safely performed in both settings based on consensus guidelines, as well as for evaluation and management (E&M) visits (regular doctor visits).[vi] The HPC examined shifts in volume of services in each category for the years 2011-2013. For some of the services, volume PMPM declined in both HOPD and non-hospital settings, including imaging (7.6 percent decline in HOPD, 7.2 percent decline in non-hospital), laboratory tests (10.7 decline in HOPD, 2.2 percent decline in non-hospital), and colonoscopy and endoscopy procedures (4.7 percent decline in HOPD, 4.6 decline in non-hospital). However, for other services, a significant portion shifted from non-hospital settings to hospital outpatient departments. Between 2011 and 2013, volume PMPM for chemotherapy administration grew 9.9 percent in hospital outpatient departments and declined 9.0 percent in non-hospital settings; for E&M visits, volume PMPM increased 5.9 percent in hospital outpatient departments and decreased 8.6 percent in non-hospital settings (see **Exhibit 5.5**). This shift for E&M visits appears consistent with national data. For Medicare, the volume billed as HOPD services increased 9 percent per Medicare beneficiary in 2013, while the volume billed as physician-office services increased by only 1 percent.[5] Additional research is needed with a wider set of services to more fully estimate the shift in services to hospital outpatient departments from non-hospital settings in Massachusetts.

Exhibit 5.5: Changes in site of care for chemotherapy administration and E&M visits, 2011 – 2013

Percentage change in number of procedures per 1,000 member months



Note: * Median price. Procedures with a missing site of service or non-hospital outpatient site were excluded. Spending includes insurer and enrollee payments for both the facility and professional portion of the covered medical service, on all claim lines for the same patient on the same date with the same CPT procedure code. Commercial FFS spending does not include capitated payments. Non-hospital setting includes office, independent lab, urgent care, ambulatory surgical center, independent clinic, FQHC, public health clinic, walk-in retail health clinic, or rural health clinic (see **Technical Appendix**).

Source: HPC analysis of the Massachusetts All-Payer Claims Database, 2011-2013

Comparing commercial prices between settings, the HPC found that prices in hospital outpatient departments were consistently higher than in non-hospital settings. The median price for chemotherapy administration in 2013 was 68 percent higher in a HOPD versus non-hospital setting ($298 versus $177, respectively). Similarly, payments for E&M visits by provider specialty were also higher in hospital outpatient departments compared to non-hospital settings. For example, the mean payment in 2013 for a low complexity, primary care visit[vii] was 15 percent higher in a HOPD versus non-hospital setting ($137, versus $119, respectively). Moreover, the median price paid for a colonoscopy in a HOPD was 56 percent higher than in a non-hospital setting in 2013 ($1,470 versus $945), and the median price for an upper GI endoscopy was 53 percent higher in a HOPD versus non-hospital setting ($1421 versus $930, respectively) (see **Exhibit 5.6** and **Sidebar: "Common laboratory tests"**).

A key driver in this volume shift and spending increase is the growth in physician affiliation with hospitals, which can include contracting affiliations and hospital acquisition. For example, the share of primary care physicians (PCPs) in Massachusetts affiliated with large provider

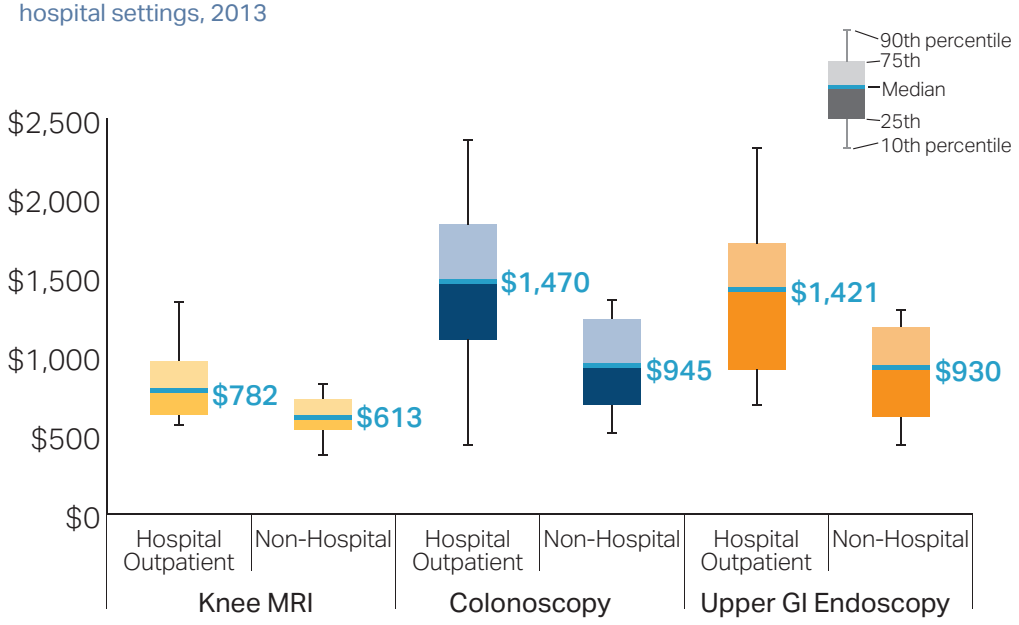
vi A full list of the procedures is available in the **Technical Appendix**.

vii CPT 99213, Low-complexity visits with established patients (15 minutes)

systems grew from 62 percent in 2008 to 76 percent in 2014 (see **Chapter 3**: "**Trends in Provider Markets**"). One method through which affiliations can shift care to hospital outpatient departments is establishing new in-system referral patterns that bypass non-hospital settings in favor of hospital-based care, thereby changing where services are delivered. However, hospital acquisition of physician practices can further shift care through licensure of physician practices as hospital outpatient departments.[6] When acquired physician groups are established as hospital outpatient departments, services are often billed at higher rates through the addition of hospital-facility fees, even though there has been no change in the location, patient mix, or the physicians performing the service. This potentially raises both total medical spending and patient cost-sharing. Currently, 29 percent of physicians nationwide are hospital-employed either through direct employment or hospital-owned practices, up from 16 percent in 2007.[7] One recent study found that hospital acquisitions of physician practices led to a 13.7 percent increase in average prices per unit of service and estimated that one-quarter of the price increases was due to the "increased exploitation of reimbursement rules that allows hospitals to charge facility fees for services by hospital owned physicians."[8]

Shifts in volume and spending over time, specifically due to conversion of physician practices into HOPDs are difficult to track. However, in pre-filed testimony[9] on outpatient facility charges for the HPC's 2015 Health Care Cost Trends Hearing, some payers noted an overall increase in physician services billed with hospital-facility fees. Several payers also noted that facility fees for outpatient care were contributing to higher costs. For example, in their testimony, Aetna stated, "Beginning in 2009, in Massachusetts, we began to see a shift away from a physician-office service to a split-billed physician outpatient clinic visit and facility-service fee." While Aetna stated that their general payment policy is to not pay separate facility fees for outpatient-based practices, they noted that, "when a hospital system negotiates an exemption… facility fees can be paid at a percentage of billed charges and those costs are ultimately passed along in the form of higher premium rates for insured groups and higher costs for self-funded groups." Increasingly, commercial payers have reacted to paying hospital outpatient facility fees for services delivered in a non-hospital setting. For example, Blue Cross Blue Shield (BCBS) noted in its 2015 pre-filed testimony[10] that it has prohibited reimbursement for facility fees billed with routine E&M services, effective July 1, 2015.

Exhibit 5.6: Comparison of spending per procedure between hospital outpatient and non-hospital settings, 2013



Note: Procedures with a missing site of service or non-hospital outpatient site were excluded. Spending includes insurer and enrollee payments for both the facility and professional portion of the covered medical service, on all claim lines for the same patient on the same date with the same procedure code. Commercial spending does not include capitated payments. See **Technical Appendix.**

Source: HPC analysis of Massachusetts All-Payer Claims Database, 2011-2013

Common laboratory tests: price variation by provider and setting of care

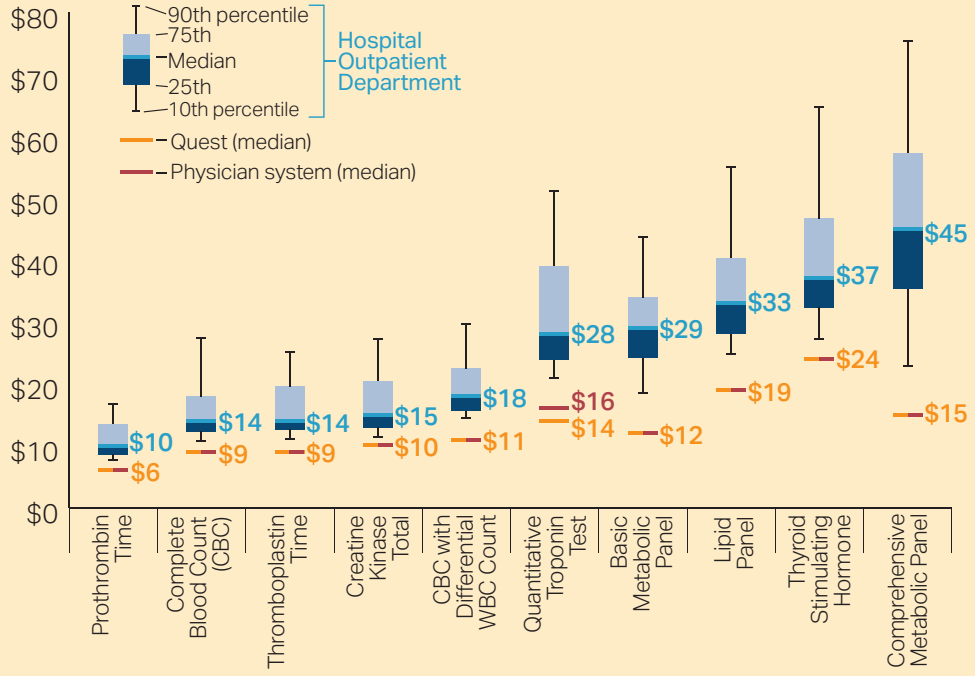
Simple laboratory tests can be performed in a variety of settings, from an in-house laboratory at a hospital or physician office to a freestanding testing facility. The HPC compared commercial payments for 10 common tests across different settings of care: HOPDs, physician offices, and freestanding diagnostic facilities.[viii] Physicians were grouped into physician systems. For prices at freestanding diagnostic facilities, the HPC evaluated Quest, a for-profit company that performs most of the freestanding lab services in Massachusetts. The sample included 3,252,584 claims, totaling $102,327,046 in patient and insurer payments in 2012.[ix]

For each common lab test, prices were higher in HOPDs than for the same test in a physician office or freestanding testing facility. For most tests, the price at a HOPD was double the price at Quest. For example, for a basic metabolic panel, the median price at a HOPD was $29, compared to a median price of $12 at Quest or a physician office. Prices also varied for providers within the same setting, with far greater variation between HOPDs than between physician systems. Between HOPDs, prices at the 90th percentile were at least double the prices a t the 10th percentile for all tests. Between physician systems, prices at the 90th percentile were less than 30 percent higher than prices at the 10th percentile (for example, prices for a basic metabolic panel ranged from $14 at the 90th percentile to $12 at the10th percentile). **Exhibit 5.7** shows the variation in prices between HOPDs; variation between physician offices is available online in the **Technical Appendix.**

Across all claims for these tests, 65 percent of blood work was billed at a HOPD, while 35 percent of tests were billed at less-costly settings of care—physicians' offices (25 percent) and freestanding diagnostic facilities (10 percent). If prices for these lab tests at HOPDs were equal to prices at physician groups or Quest, the HPC estimates commercial spending for these tests would be 54 percent lower.

In conclusion, almost two-thirds of representative common lab tests in Massachusetts are performed at hospitals, even though they tend to be the most expensive settings of care for tests. The price difference for the same service between different settings of care supports the need to explore opportunities to address both price variation and site-neutral payments.

Exhibit 5.7: Prices for common lab tests by setting, 2012



Note: Tests in the hospital setting were only included if billed as an outpatient service. Providers are included if they performed at least 15 tests.

Source: HPC analysis of Massachusetts All-Payer Claims Database, 2012

viii Analysis of commercially insured members of Blue Cross Blue Shield MA, Harvard Pilgrim Health Plan, and Tufts Health Plan from the MA APCD.

ix The tests' descriptions and current procedural terminology (CPT) codes, as well as the number of claims for each are listed online in the **Technical Appendix**.

POLICY CONSIDERATIONS

Site-neutral payment

Medicare and other payers have many different payment systems to reimburse providers for medical services. The setting of care in which the service is delivered determines which payment system is applied. In some cases, the same service can be provided in multiple settings. However, as the findings here demonstrate, payment for the same service can differ substantially based on the setting in which the service was delivered, as is often the case with services that could be provided in either a hospital outpatient department or a physician office. For the Medicare program, both the Centers for Medicare and Medicaid Services (CMS) and the Medicare Payment Advisory Commission (MedPAC) have proposed options for "site-neutral payments"—that is, to eliminate the differential and pay the same rate for a service regardless of where the service is performed. The payment rate would be based on the rate for the lower-cost setting. For example, MedPAC has recommended lowering hospital outpatient department rates for E&M visits and a select set of other services such that Medicare payment rates for these services would be the same in physician offices and hospital outpatient departments.[4]

Refining provider locations eligible to receive hospital outpatient department payments

The ability to earn higher payment rates as a HOPD than as a physician practice has incentivized the practice of hospitals acquiring physician practices and enabling those practices to bill as HOPDs. In November 2015, Congress took action regarding this practice for Medicare payments,[11] passing legislation the codifies CMS' definition of provider-based off-campus hospital outpatient departments (OCHOPD). It states that these locations will not be eligible to receive hospital outpatient payment rates.[x] OCHOPDs are defined as providers located 250 yards away or more from a hospital's main campus. The law will go into effect January 1, 2017 and is projected to save $9.3 billion over 10 years. There are two significant exceptions to the law: 1) OCHOPDs that have already billed as an outpatient department prior to January 1, 2017 will still be eligible for reimbursements as hospital outpatient departments and 2) OCHOPDs with dedicated emergency departments.

Reference prices

Reference pricing is a consumer cost-sharing strategy applied to a particular service to allow consumers to share in the savings when they select lower-cost providers. Under reference pricing, the employer or insurer pays a pre-determined amount for a particular service, and the consumer is generally responsible for the remainder of the cost. As detailed in the 2014 Cost Trends Report,[12] reference pricing is most appropriate for non-emergent services that vary widely in price, but not quality, and have a large number of providers performing these services. Reference pricing could be appropriate for procedures such as colonoscopy, where there is a large price variation between hospital outpatient and non-hospital settings. The California Public Employees' Retirement System (CalPERS) has implemented a reference pricing initiative for colonoscopies, among other services. To encourage members to seek care at ASCs, CalPERS has covered colonoscopies performed at ASCs without cost sharing, and covered colonoscopies performed at hospital outpatient departments up to $1,500.[12] After the first two years of implementation, CalPERS saw a $7 million (28%) cost saving without a change in quality.[14]

In summary, shifts in volume to the hospital outpatient setting from other settings have contributed to a high growth in hospital outpatient spending. While some procedures have moved from inpatient to hospital outpatient, some services have shifted from the non-hospital setting to hospital outpatient. Prices are typically higher in the hospital outpatient department than in non-hospital settings for the same service. Both supply-side and demand-side policies can promote value-based care and reduce cost.

x An OCHOPD would only be eligible for CMS reimbursements under the Ambulatory Surgical Center Prospective Payment System (ASC PPS) or the Medicare Physician Fee Schedule (PFS), depending on the provider type, but not the Outpatient Prospective Payment System (OPPS).

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SECTION II. TRENDS IN SPENDING AND CARE DELIVERY

Future Outlook

6

In the 2014 Cost Trends Report, the HPC raised notes of caution about new, expensive prescription drugs coming to market and ongoing consolidation of large provider systems, which can lead to higher prices for payers and consumers. As noted in this Report, these factors did play a role in spending growth in 2014, yet slow growth in other areas led to overall growth that continued below the benchmark in the commercial sector.

These forces of growth in prescription drug spending and continued provider consolidation do not appear to have dissipated in 2015. Nationally, indicators of prescription drug spending through the first three quarters of 2015 suggest increases on the order of 8 to 9 percent compared to the same period in 2014.[1] Given that prescription drug spending accounted for 13.5 percent of THCE in 2014, further growth of 8 percent in 2015 would add 1.1 percentage points of growth to the benchmark.

Provider consolidation has also continued, as indicated by a number of material change notices received by the HPC in 2015 and two transactions that will be investigated in new cost and market impact reviews in 2016.

Another indicator of higher growth rates is the 6.3 percent average first-quarter rate increase announced for the Massachusetts merged market in 2016 over first-quarter rates in 2015.[2] Those increases were noted to reflect high prescription drug spending, an uptick in inpatient and outpatient utilization, and effects of the ACA.

On the other hand, MassHealth enrollment—the major driver of 2014 growth—stabilized in 2015, particularly as some members who had been covered temporarily transitioned back to the Connector or other sources of coverage.

Commercial and hospital spending, outside of prescription drugs, continued their pattern of low rates of growth. Alternative payment models (APMs) are set to extend into PPO products in 2016, which could bring continued attention to cost growth in the longer-term, but will not have major effects in 2015. Ultimately, all market participants must continue to pursue opportunities to streamline care delivery, improve efficiency, and eliminate waste. The HPC continues to identify specific areas for attention, which are the subject of the next section of this Report.

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SECTION III: OPPORTUNITIES TO INCREASE QUALITY AND EFFICIENCY

Hospital-level Variation in Spending per Episode of Care: Normal Pregnancy and Delivery

7

The Health Policy Commissions' (HPC's) past work and the work of many other state agencies have consistently[1] documented variation among Massachusetts providers in both prices and practice patterns. A body of academic research, as well as the HPC's cost and market impact reviews, has consistently shown that price variation is typically not related to indicators of higher value, such as quality of care or patient acuity. Rather, higher prices are generally associated with providers' market leverage, measured in terms of market share (see **Chapter 2**: "**Trends in Provider Markets"**) or other metrics. Such price variation, combined with increasing concentration of volume in high-cost providers, leads to higher spending. The topic of price variation is of critical interest in the Massachusetts market. Payers' testimony at the HPC's 2015 Health Care Cost Trends Hearing and other research have consistently found that higher prices, brought on, in part, by price variation and increasing concentration in high-price providers, drove much of the growth in hospital and professional spending from 2007 onward.[i]

Continuing the HPC's work on hospital-level variation in spending for an episode of care, this Report presents a joint analysis of both price variation and practice-pattern variation. Variation in the amounts paid to different providers for the same service or set of services without measurable differences in quality indicates a potential opportunity to decrease healthcare spending. This can be done either by shifting care to more efficient settings or by increasing efficiency and decreasing payments within a given setting. Variation in practice patterns may highlight opportunities to improve quality. Specifically, the chapter examines episodes of care for a normal pregnancy and delivery, the most common reason for a commercial inpatient stay. Maternal care is a particularly important service area to study given its high volume (29,191 commercial discharges in Massachusetts in 2014, the most common commercial discharge in 2014).[ii] In addition, maternal care is among the most common conditions for which consumers research and select providers in advance, potentially incorporating information on price, quality, and convenience.[2]

The HPC examined hospital-level variation in total spending per episode of care for commercial patients, and focused on three components: 1) average procedure prices for vaginal deliveries and Caesarian sections (C-sections); 2) the C-section rate among first-time mothers with pregnancies that were unlikely to need interventions (the "NTSV" rate)[iii]; and 3) the number of pre-natal ultrasound tests. The analysis of spending is based on data from the Massachusetts All-Payer Claims Database for the three largest commercial payers in 2011 and 2012 and includes only low-risk pregnancies; analyses of the numbers of discharges and C-sections draw on data from other sources.[iv]

i The topic of provider price variation is discussed more fully in the HPC's Provider Price Variation Special Report, which was released in conjunction with the 2015 Annual Cost Trends Report.

ii Based on the DRGs for normal vaginal delivery and for C-section without complications.

iii The NTSV C-section measure identifies pregnancies that are unlikely to need surgical intervention during labor. More specifically, NTSV refers to a first-time pregnancy (nulliparous) that has reached its 37th week or later (term) and consists of one fetus (singleton) in the head-down position (vertex).

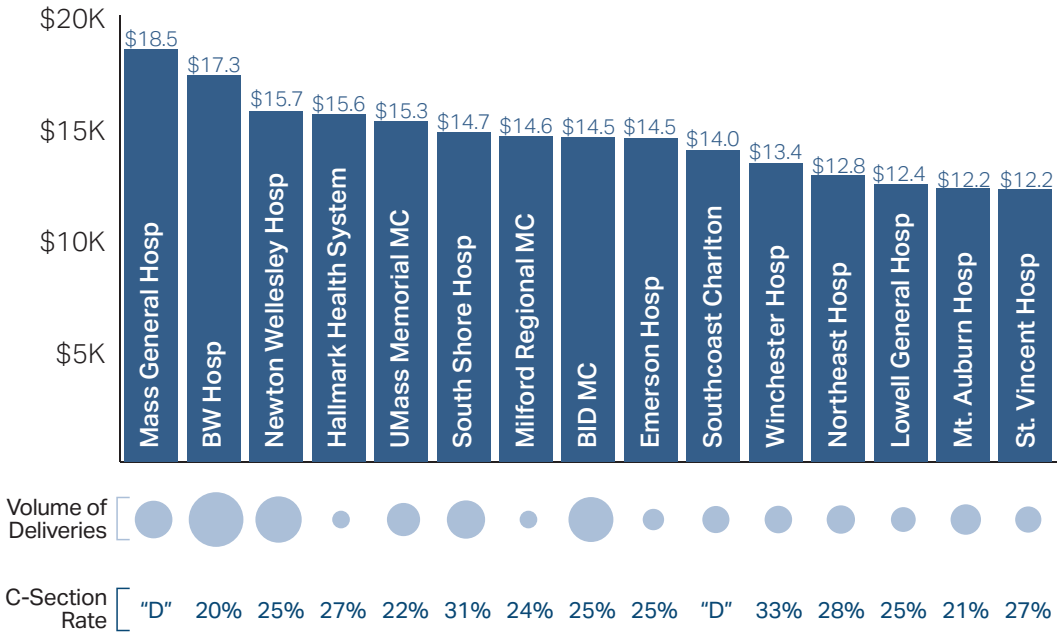
iv The three largest commercial payers were Blue Cross Blue Shield, Harvard Pilgrim Health Care, and Tufts Health Plan. Normal pregnancies were defined as pregnancies among women ages 18 – 35, who were assigned a severity score of 1 based on a standard grouper applied to diagnoses recorded on medical claims (the Optum ETC grouper). The HPC attributed each episode to the hospital where the delivery occurred. See the **Technical Appendix** for more information on the analytic methods.

VARIATION IN SPENDING AND PRICE

Among the episodes the HPC examined, the average episode-level spending, including both vaginal births and C-sections, was $14,686, including an average $2,747 for prenatal care, $11,851 for delivery, and $88 following birth (see **Exhibit 7.1**).[vi] Consistent with the HPC's past research, examining the results at the hospital level reveals substantial variation among individual hospitals, among types of hospitals, and among provider systems.

Across the 43 hospitals in the agency's sample, the average spending per episode ranged from $9,722 at the least expensive hospital to $18,475 at the most expensive hospital (see **Exhibit 7.2**).

Exhibit 7.1: Average spending for normal deliveries by hospital, selected hospitals, 2011 – 2012
Spending per episode, "thousands of dollars"



Note: This chart is limited to the 15 hospitals with the greatest number of normal deliveries paid by commercial payers in 2014. Both vaginal and C-section deliveries are included. "D" indicates that the hospital declined to voluntarily submit rates. C-section rate is the nulliparous term singleton vertex (NTSV) C-section rate.

Source: HPC analysis of the Massachusetts All-Payer Claims Database, 2011-2012, HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, 2014; Leapfrog Group

v Only hospitals with the highest 15 discharges are within the graphic. The median line represents median episode spending for all hospitals that were analyzed. These 15 hospitals represent 78 percent of all discharges.

vi When results refer to individual hospitals, the sample only includes those hospitals with more than 15 total episodes; 43 hospitals meet this criterion. See **Technical Appendix**.

Exhibit 7.2: Average spending for normal deliveries by hospital, all hospitals, 2011 – 2012

			Episode Spending	Procedural Spending			
Hospital	Hospital Cohort	Corporate Affiliation	Pregnancy Episode Spending	Vaginal Delivery Spending	C-Section Spending	2014 Commercial Discharges	C-Section Rate
Massachusetts General Hospital	AMC	Partners	$18,475	$14,763	$19,542	1847	D
Brigham and Women's Hospital	AMC	Partners	$17,312	$14,042	$18,002	3897	20%
North Shore Medical Center	Community	Partners	$16,405	$11,652	$16,785	311	D
Steward St. Elizabeth's Hospital	Teaching	Steward	$15,987	*	*	409	26%
Newton Wellesley Hospital	Community	Partners	$15,718	$12,148	$15,846	2795	25%
Hallmark Health System	Community	Independent	$15,561	$10,599	$13,796	406	27%
UMass Memorial Medical Center	AMC	UMass	$15,266	$12,284	$15,432	1437	22%
Tufts Medical Center	AMC	Independent	$15,262	*	*	432	36%
South Shore Hospital	Community	Independent	$14,745	$11,492	$14,539	1910	31%
Milford Regional Medical Center	Community	Independent	$14,564	$10,270	$13,127	406	24%
Beth Israel Deaconess Medical Center	AMC	BID	$14,534	$11,414	$12,884	2631	25%
Emerson Hospital	Community	Independent	$14,497	$10,705	$13,291	597	25%
Cooley Dickinson Hospital	Community	Partners	$14,381	*	*	339	28%
Berkshire Medical Center	Teaching	Berkshire Health	$14,249	*	*	246	21%
Falmouth Hospital	Community	Cape Cod	$14,219	*	*	141	30%
Southcoast Charlton Memorial Hospital	Community	Independent	$13,956	$10,367	$13,175	959	D
Steward Holy Family Hospital	Community	Steward	$13,880	*	*	305	43%
Cape Cod Hospital	Community	Cape Cod	$13,772	$9,622	$12,787	232	24%
Beth Israel Deaconess - Plymouth	Community	BID	$13,694	*	*	298	24%
Baystate Medical Center	Teaching	Baystate	$13,611	$10,734	$15,291	1262	23%
Metrowest Medical Center	Community	Tenet	$13,557	*	*	213	27%
Southcoast St. Luke's Hospital	Community	Independent	$13,455	$10,199	$11,787	*	D

Table continued on page 52

			Episode Spending	Procedural Spending			
Hospital	Hospital Cohort	Corporate Affiliation	Pregnancy Episode Spending	Vaginal Delivery Spending	C-Section Spending	2014 Commercial Discharges	C-Section Rate
Winchester Hospital	Community	Lahey	$13,385	$9,889	$12,223	987	33%
Signature Brockton Hospital	Community	Independent	$13,320	*	*	239	27%
Steward Good Samaritan Medical Center	Community	Steward	$13,090	$9,137	$11,975	165	36%
North Adams Regional Hospital	Community	Independent	$12,849	*	*	8	N/A
Northeast Hospital	Community	Lahey	$12,817	$9,917	$12,038	1048	28%
Harrington Hospital	Community	Independent	$12,789	*	*	60	14%
Steward Norwood Hospital	Community	Steward	$12,704	*	*	165	28%
Lawrence General Hospital	Community	Independent	$12,656	*	*	284	22%
Lowell General Hospital	Community	Wellforce	$12,437	$9,573	$12,326	803	25%
Mercy Hospital	Community	Independent	$12,374	*	*	353	25%
Boston Medical Center	AMC	Independent	$12,261	*	*	299	30%
Mount Auburn Hospital	Teaching	Independent	$12,247	$9,570	$12,433	1208	21%
St. Vincent Hospital	Teaching	Tenet	$12,221	$9,616	$12,641	894	27%
HealthAlliance Hospital	Community	UMass	$12,201	$9,692	$11,973	281	D
Sturdy Memorial Hospital	Community	Independent	$11,980	*	*	289	31%
Steward Morton Hospital	Community	Steward	$11,945	*	*	116	34%
Baystate Franklin Hospital	Community	Baystate	$11,906	*	*	166	30%
Southcoast Tobey Hospital	Community	Independent	$11,706	*	*	*	D
Anna Jacques Hospital	Community	Independent	$11,602	*	*	332	30%
Cambridge Health Alliance	Teaching	Independent	$11,601	*	*	257	19%
Heywood Hosp	Community	Heywood Healthcare	$9,772	*	*	164	19%

Note: "D" indicates that the hospital declined to voluntarily submit rates. "N/A" indicates that the hospital was not eligible to submit rates. Both vaginal and C-section deliveries are included in episode spending. C-section rate is the nulliparous term singleton vertex (NTSV) C-section rate.

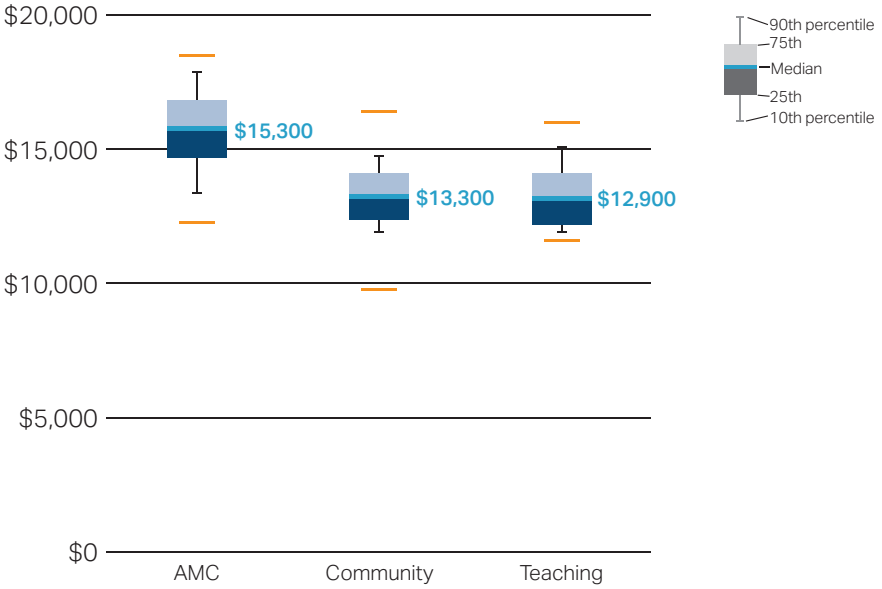
Source: HPC analysis of the Massachusetts All-Payer Claims Database, 2011-2012; Center for Health Information and Analysis Hospital Inpatient Discharge Database, 2014; Leapfrog group

When hospitals were grouped by type, the HPC found that episode costs were higher at academic medical centers (AMCs) than at major teaching or community hospitals. The median cost at an AMC was $15,300, 19 percent higher than the median cost at major teaching hospitals and 15 percent higher than the median cost at community hospitals (see **Exhibit 7.3**).

Within hospital types, there was also significant variation in spending. Episode costs at AMCs ranged from $18,465 to $12,261, at teaching hospitals from $15,987 to $11,600, and at community hospitals from $16,405 to $9,772. Notably, the two Partners HealthCare System's (Partners') AMCs were higher cost than the four other AMCs, and two Partners community hospitals (North Shore and Newton Wellesley) were the highest cost of the 31 community hospitals. Partners has no teaching hospitals.

Exhibit 7.3: Average spending for normal deliveries by hospital type, all hospitals, 2011 – 2012

Spending per episode, dollars



Note: Both vaginal and C-section deliveries are included in episode spending.
Source: HPC analysis of the Massachusetts All-Payer Claims Database, 2011-2012

Variation in episode payments may be driven by prices or the quantity of services. To study the price aspect of episode costs for maternity care, the HPC examined procedure prices for vaginal deliveries and C-sections.[vii] On average, when vaginal deliveries and C-sections were combined, the average procedure price was $11,851 and represented 80 percent of the average cost of the episode.[viii] Not only did the cost of the procedure make up 80 percent of the episode-level cost; hospital-level variation in the cost of the delivery procedure drove 85-90 percent of variation in the cost of the episode.

The hospitals with the highest episode costs also accounted for a large percentage of the total volume of normal deliveries. In 2014, six hospitals accounted for 50 percent of births, and five of them had above-average episode costs for the commercial payers in the agency's study.[ix] Massachusetts General Hospital and Brigham and Women's Hospital, the two Partners AMCs, were the two hospitals in the state with the highest costs per episode and together accounted for 23 percent of all births. This concentration of births in higher-cost settings has not changed in recent years.

vii The procedure price was defined as all spending from the admit date to the discharge date for the delivery inpatient stay.

viii For vaginal deliveries, the average procedure price was $11,378 and the average episode price was $14,178; for C-sections, these numbers were $14,143 and $17,054. Hospital-level episode costs for vaginal deliveries and C-sections were highly correlated: rho=.88, p<.001.

ix In order of cost, the five with above-average costs were Massachusetts General Hospital, Brigham and Women's Hospital, Newton Wellesley Hospital, South Shore Hospital, and Beth Israel Deaconess Medical Center. The final hospital was Mount Auburn. While the study of episodes costs was based on data from 2011 and 2012, HPC analysis of relative price data demonstrates that relative prices among hospitals have been stable over time.

VARIATION IN QUALITY AND EFFICIENCY: C-SECTION RATES AND ULTRASOUNDS

To study the quality and efficiency of maternity care, the HPC first focused on C-sections and pre-natal ultrasounds, two areas where the HPC observed considerable practice pattern variation and where there is evidence of excess utilization. Considerable evidence concludes that C-sections increase risk for obstetric hemorrhage and infection, which are the most frequent causes of maternal morbidity related to childbirth.[3,4] A C-section delivery also substantially increases a mother's likelihood of a C-section delivery in subsequent births. Further, delivery by C-section is associated with potential short and long term medical implications for the infant.[5,6,7,8,9]

Based on data for 38 Massachusetts hospitals from Leapfrog Group, 26.2 percent of first-time mothers with pregnancies that were unlikely to need interventions (NTSV pregnancies) had C-sections, above the target rate of 23.9 percent[x] proposed in the Federal Government's Healthy People 2020 initiative, and well above the optimal C-Section rate of 19 percent, according to recent medical recommendations.[4] Among 33 states, Massachusetts was ranked 19th for its C-section rate (1=best).[xi] In 2014, NTSV C-section rates varied at Massachusetts hospitals,[xii] from a high of 42.7 percent at Steward Holy Family Hospital to a low of 14.3 percent at Harrington Memorial Hospital. (see **Exhibit 7.2**)[10]

Beyond being a key indicator of quality, the high statewide C-section rate contributed to overall spending levels; the average procedure cost for a C-section was 24 percent higher ($2,765) than the procedure cost for a vaginal delivery. However, the variation in C-section rates was not an important driver of the hospital-level variation in episode costs, accounting for roughly 2 percent of the total variation in the agency's study sample.

Imaging is another area where services may be over-used. The American College of Obstetricians and Gynecologists recommends one ultrasound in the first trimester, if necessary to confirm the expected delivery date, and one ultrasound in the second trimester for all mothers. It discourages overuse beyond that number.[11] The HPC found that all Massachusetts hospitals perform more than the recommended number; at 27 hospitals, the average number of ultrasounds per patient was greater than four.

Higher spending, driven either by price or utilization, would hypothetically represent good value if higher spending was associated with better outcomes or better care. However, available data do not demonstrate such an association. Higher episode spending was not correlated with better quality outcomes,[12] as measured by the neonatal injury rate[xiii] and the obstetrical trauma rate.[xiv]

POLICIES TO IMPROVE QUALITY AND EFFICIENCY

Innovative payment models and benefit designs may create incentives that encourage high-value choices by both providers and consumers that could improve health outcomes while reducing cost.

Blended payment

Current payment methods pay more for C-sections than for vaginal deliveries, creating a financial environment that may favor C-sections, despite the clinical consensus that this procedure is overused. Blended-bundled payment, which pays a single amount independent of whether the delivery is vaginal or by C-section, has the potential to both lower spending and reduce use of low-value obstetrical care (see **Sidebar: "Blended bundled payment"**). Such payment creates financial incentives for hospitals to lower their rates of primary C-section, unnecessary ultrasounds, and other low-value services. Minnesota's Medicaid program offers a single blended payment for all deliveries, whether vaginal or cesarean. The program intends to lower the cesarean delivery rate by 5 percent.[13]

x Leapfrog Group, accessed December 2015. Each hospital's result is based on 12 months of data, ending either 12/31/2014 or 6/30/2015.

xi The Leapfrog Hospital Survey uses a tested, validated measure endorsed by the Joint Commission, National Quality Forum (NQF) and CMS. The NTSV C-section measure identifies pregnancies that are unlikely to need surgical intervention during labor. More specifically, NTSV refers to a first-time pregnancy (nulliparous) that has reached its 37th week or later (term) and consists of one fetus (singleton) in the head-down position (vertex).

xii Massachusetts General Hospital, North Shore Medical Center, Southcoast Hospital Group, Health Alliance Hospital declined to report their C-section Rates.

xiii Patient Safety Indicator 17: Birth Trauma Rate-Injury to Neonates. R=.03, p=.86.

xiv Patient Safety Indicator 19: Obstetric Trauma-Vaginal Delivery without instrument. R=-.10, p=.53.

Blended bundled payment

"Bundled payment" is an alternative payment method that makes a single payment for all services to treat a given condition or provide a given treatment, such as a single payment for an episode of care. For example, for a normal delivery, bundled payment might cover prenatal physician services, imaging, delivery, etc. In some cases, "bundles" are defined according to the specific treatment employed; for example, a system might offer one bundled payment for a vaginal delivery and a different, higher bundled payment for a C-section. In contrast, "blended bundled payment" is the term used to distinguish cases where the bundle is defined according to the patient's condition (e.g. normal pregnancy), and a single level of payment is used for multiple treatment pathways (e.g. vaginal or cesarean delivery). All bundled payment rewards efficient care, and, for maternity care, blended bundled payment explicitly provides incentives for hospitals and physicians to reduce the use of cesareans by removing the financial incentive to use this procedure.

As with other APMs, when blended-bundled payment is used, outcomes are monitored to ensure that providers maintain high quality and do not skimp on necessary care. Bundled payment may be more or less comprehensive. For example, a more comprehensive bundled payment might include both maternal and neo-natal care, thereby supporting providers who invest in prenatal care to improve the health of the infant and lower costs in the neonatal phase of the pregnancy.

Reference pricing

Maternal care is a service where reference pricing could be effective. Given that deliveries are common and expensive, mothers often research and select providers in advance and could incorporate information on quality and price into their decisions (see **Chapter 5: "Hospital Outpatient Spending"** for explanation of reference pricing). With reference pricing, if a mother-to-be selected a hospital where average costs were above a benchmark, then her cost-sharing would be higher than if she selected a hospital where average prices were at or below the benchmark. With reference pricing, patient cost-sharing is typically tied to the provider's average cost for all patients, not the actual cost incurred by the individual patient. The HPC simulated the savings that could occur with a reference price for pregnancy bundled payment set at $12,662, the spending associated with a pregnancy episode at Mount Auburn Hospital.[xv] The HPC found that spending referenced to that level would reduce commercial spending for pregnancies between 6 and 17 percent.[xvi] These savings would occur as some mothers elect to give birth at lower-cost facilities and some hospitals lower their prices in response to the change in benefit design.

Evidence-based patient-centered care models

Some evidence-based care models use low-intensity settings, and particularly focus on the mother's well-being. Appropriate providers may contribute to improving the quality and value of maternal and infant care. Studies conducted by the National Health Service have found that midwife-led birthing units and home births are safer for low-risk pregnancies than births in an obstetrician-led hospital unit. While it is hard to generalize these results to the U.S., research from other countries suggests that having midwives properly integrated into a healthcare infrastructure may lead to lower costs and higher quality.[14] Moreover, C-section rates are higher for lower income and African-American women. Midwifery care has been shown to reduce these disparities.[xvii,15,16]

Birthing units offer a mother the opportunity to give birth at a facility that offers a family-centered experience. Birthing centers are usually run by a team of certified nurse midwives and are integrated into or partnered with a hospital obstetric unit to ensure rapid transport and communication in case of complications. Even though some evidence suggests that birthing centers are a low-cost alternative with maternal and infant outcomes equal to or better than a hospital birth,[17,18] Massachusetts has only one licensed birthing center, which is owned and operated by Cambridge Health Alliance in Somerville.

In addition, coverage reforms that encourage patient-centered care models could contribute to lowering the statewide C-section rate. While a midwife is a clinical provider responsible for the medical care of both the mother and the baby, a doula's primary responsibility is caring for the physical and psychosocial well-being of the mother. The use of doulas has been endorsed by the American College of Obstetricians and Gynecologists and the Society of Fetal Medicine as an effective method to lower cost and improve quality of a pregnancy.[19] Doulas are currently not covered by MassHealth or any of the major payers,

xv Mount Auburn Hospital was chosen as the reference hospital because it is one of the 15 highest-volume hospitals in the state, and, of those hospitals, has one of the lowest costs for pregnancy episode and one of the lowest C-section rates (a measure of quality).

xvi For context, total spending in the APCD for pregnancy, with delivery was $442,595,642.

xvii Based on 2013 national vital statistics, the NTSV C-section rate for non-Hispanic white women was 25.9, for non-Hispanic black women 30.8, and for Hispanic women 26.6.

creating a barrier to access, especially for low-income women. Medicaid programs in Oregon and Minnesota have already begun to reimburse for doula services during a pregnancy. A 2013 study estimated that if doulas were covered by MassHealth and reimbursed at rates equal to Minneapolis' Medicaid program, MassHealth could save $9.5 million through savings generated through a lower C-section rate.[20]

Episode-level spending for a normal pregnancy and delivery varies among hospitals. Most of the variation can be explained by the variation in procedural price, with no demonstrable relationship between episode spending and the quality of care. Despite payment reform efforts to date, volume is increasingly concentrated in high-cost hospitals. The statewide NTSV C-section rate is higher than optimal. Changes in payment and benefit design may reduce spending and drive volume to more efficient settings, while evidence-based models of care may improve outcomes or experience for mothers and infants.

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SECTION III: OPPORTUNITIES TO INCREASE QUALITY AND EFFICIENCY

Avoidable Hospital Use

8

In the 2014 Cost Trends Report, the Health Policy Commission (HPC) identified excessive hospital use, including readmissions, preventable hospital admissions, and preventable emergency department (ED) use as areas of ongoing focus. While the rate of hospital admissions is falling in Massachusetts and across the nation,[1] Massachusetts continues to use hospital care at rates greater than the rest of the country[2] (see **Exhibit 8.1**). This chapter briefly reviews recent performance on readmissions and preventable admissions in the Commonwealth before examining ED utilization in more depth. It concludes with emerging opportunities to reduce utilization of acute hospital services.

As in recent years, inpatient and ED utilization in Massachusetts are 11 and 14 percent higher than the national average, respectively. Massachusetts' outpatient utilization is more than 50 percent higher than the national average, placing it among the 5 highest utilizing states on that measure. Medicare readmissions rates are also higher than the national average.[i] The next sections focus on potentially avoidable or unnecessary hospital use and highlight opportunities to reduce such utilization and increase efficiency in the delivery system.

Exhibit 8.1: Hospital use in Massachusetts and the U.S., 2014

	Units, year	MA	US	Difference	MA Rank (1=best)
Inpatient Days	Per 1,000 persons	625	577	8.3%	33
Inpatient Admissions	Per 1,000 persons	118	106	11.3%	36
Outpatient Visits	Per 1,000 persons	3,302	2,145	53.9%	47
ED Visits	Per 1,000 persons	481	423	13.7%	29
Medicare Readmission Rate	Percent	17.4%	17.0%	.4 percentage points	34

Source: Kaiser Family Foundation analysis of American Hospital Association data, Centers for Medicare and Medicaid Services

i Inpatient days, inpatient admissions, outpatient visits, and ED visits are unadjusted rates. Based on data from 2010, the Health Policy Commission found that, after adjusting for age, Massachusetts inpatient days were 5 percent above the U.S. average, inpatient admissions 10 percent above, outpatient visits 72 percent above, and ED visits 13 percent above. Medicare readmissions rates are adjusted for clinical and demographic characteristics.

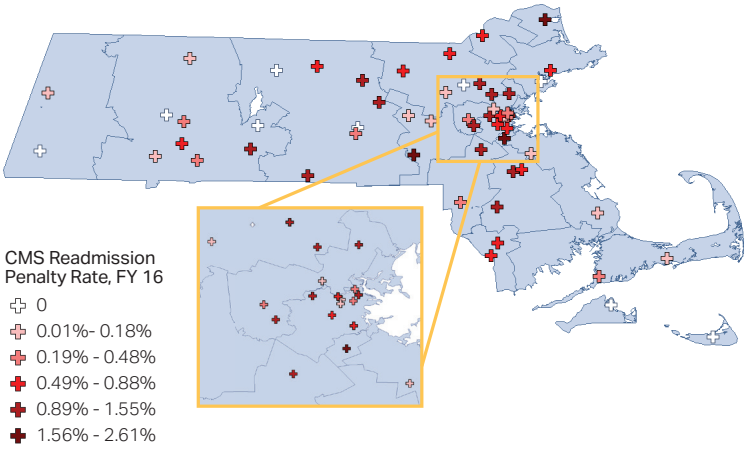
READMISSIONS

Readmission of patients to a hospital within 30 days of discharge may indicate incomplete treatment in the hospital setting, poor care after return to the community, or poor coordination as patients transition across sites of care. Massachusetts' 30-day, all-cause, all-payer, risk-standardized readmission rate was 15 percent in FY2013, a slight improvement relative to the 15.9 percent in FY2011.[ii,3] Reducing readmissions has been an ongoing focus of state and national quality-improvement efforts for nearly a decade, and there is some evidence that the observed decline may result from these efforts.[iii] The all-payer readmission rate for individual hospitals, excluding specialty hospitals, varied from 13.3 percent to 17.3 percent, suggesting opportunities to improve performance, including through more effective community partnerships and sharing best practices.[iv]

Measuring and reducing readmissions has been a particular emphasis in the Medicare program. Massachusetts' 30-day, all-cause, risk-standardized readmission rate for Medicare members was 17.4 percent in FY2013, a slight improvement relative to the 18.2 percent in FY2012.[v,1] Consistent with the fact that the Massachusetts all-cause Medicare readmission rate was above the national average, Massachusetts had higher readmission rates than the U.S. for five of the seven conditions reported by the Centers for Medicare and Medicaid Services (CMS). Rates were higher for acute myocardial infarction (MA/U.S.=17.3/17.0), chronic obstructive pulmonary disease (20.9/20.2), heart failure (22.3/22.0), pneumonia (17.1/16.9), and stroke (13.2/12.7). Rates were lower for hip and knee replacements (4.5/4.8) and coronary artery bypass graft (14.3/14.9).[4] Similar to the all-payer case, variation among hospitals in Medicare all-cause readmission rates was substantial, ranging from 11.6 percent to 17.1 percent,[3] and condition-specific rates varied as well.

As part of a strategy to align payment with measurable indicators of quality and efficiency, CMS penalizes hospitals with above-average readmissions rates. Seventy-eight percent of acute-care facilities in Massachusetts that were eligible for this CMS penalty will be penalized in 2016, compared to 54 percent of eligible hospitals nationwide. Penalty amounts range from .01 percent to 2.61 percent of the hospital's total Medicare inpatient revenue (see **Exhibit 8.2**).[5]

Exhibit 8.2: Massachusetts hospitals penalized for readmissions and assessment rate, FY 2016



Note: Excludes Specialty and VA Hospitals. Penalty rates apply to Original Medicare payments for inpatient care.

Source: Kaiser Family Foundation; analysis of Centers for Medicare and Medicaid Services data; Centers for Medicare and Medicaid Services data

Reducing readmissions is important both to improve patients' experience and to reduce unnecessary spending, and national efforts demonstrate the progress is possible.[6] Hospitals that voluntarily participate in initiatives—such as the State Action on Avoidable Re-hospitalizations (STARR) and the Hospitals to Home (H2H), which are designed to lower readmission rates through better care coordination

ii This measure is a single composite risk-standardized readmission rate (RSRR), derived from the volume-weighted results of five different models, one for each of the following specialty cohorts (groups of related discharge condition categories or procedure categories): surgery/gynecology, general medicine, cardio-respiratory, cardiovascular, and neurology. This measure is not adjusted for patients' socio-economic status. As a result, the measure may be used to track disparities by socio-economic status, but, at the same time, comparisons across hospitals and readmissions penalties may disadvantage hospitals that serve low-income patients, to the extent that socio-economic characteristics have a direct influence on the likelihood of readmissions. National all-payer data are not available for comparison.

iii For example, MedPAC's June 2013 Report to the Congress indicated that, at a national level, all-cause readmissions for the three reported conditions had a larger decrease in readmissions over the three-year measurement period than readmissions for all conditions, suggesting a strong connection between public reporting and implementation of the Hospital Readmissions Reduction Program.

iv Specialty Hospitals were excluded from the hospital-level analysis

v The Medicare hospital-wide readmission rate is calculated using the same algorithm as CHIA's all-payer readmission rate.

between the patient's community practitioners[vi]—have been moderately successful, lowering readmission rates up to 1.3 percentage points.[7] Results were better when hospitals employed multiple strategies and had the flexibility to implement their own programs tailored to the circumstances of their targeted populations.[8] Through the Hospital Engagement Network (HEN), CMS and the American Hospital Association have employed a target rate of a 20 percent reduction in readmissions over three years. This target was first used as part of HEN 1.0, and 1,263 reporting hospitals achieved a collective decrease in readmissions of 18 percent between 2011 and 2014 by reducing preventable complications during transitions from one care setting to another. In HEN 2.0, hospitals were again challenged to reduce avoidable readmissions by an additional 20 percent by September 2016.

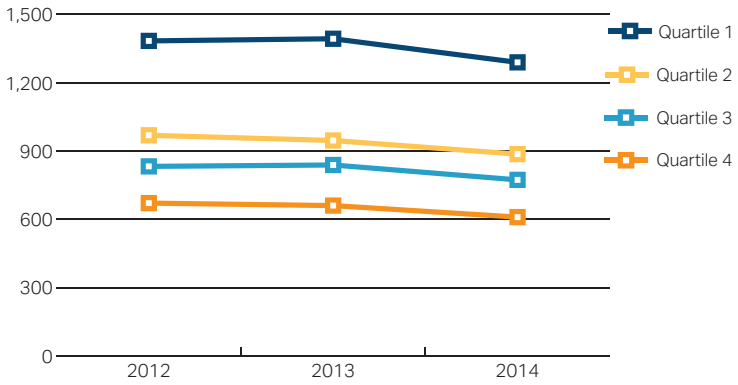
PREVENTABLE HOSPITAL ADMISSIONS

Consistent with Massachusetts' high rates of total hospital use, the HPC's past reports have also identified room for improvement in the state's rates of preventable hospital admissions, defined as admissions that could have been prevented through better access to primary care. In 2014, Massachusetts had preventable hospitalization rates significantly higher than the national average for patients with congestive heart failure (MA/U.S.=361/321)[vii] and younger adults with asthma (54/46), but lower rates than the national average for diabetes complications (52/64) and COPD (487/496).[9]

The HPC's past reports have highlighted that rates of preventable hospital admissions also vary systematically with community income, with higher rates in lower income communities, a troubling signal of ongoing disparities in access within the state (see **Exhibit 8.3**). Rates of preventable inpatient hospital use improved slightly between 2013 and 2014, consistent with an overall decline in hospital utilization, but rates of preventable hospitalizations in lower income communities (median family income below $52,000) remained twice as high as rates in higher income communities (median family income > $87,000). This community-level variation (like the hospital-level variation in readmissions) indicates the potential for improvement in lower performing and lower income communities, particularly with improvement in access to primary care. Ideally, policy and payment reforms will reduce this disparity between higher and lower income communities, in addition to improving cost and quality of care overall.

Exhibit 8.3: Chronic preventable hospital admissions by income quartile, 2012 – 2014

Age and sex adjusted hospitalizations per 100,000 residents



Note: Income Quartiles range from $0 - $52K, 52K - 69K, 69K - 87K, and 87K+.
Source: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, 2012-2014

EMERGENCY DEPARTMENT (ED) UTILIZATION

Like readmissions and preventable admissions, Massachusetts' high rates of ED use may result both from inefficient use (patients using the ED for conditions that could have been addressed in a less-intensive setting) and from poor access to care, especially poor access to primary care. This leads to emergencies that could have been avoided with earlier or better treatment.[10] More generally, ED use is higher among women, non-white, and lower income individuals.[11]

While the number of ED visits per Massachusetts resident climbed steadily between 2010 and 2013, it dropped 2.2 percent in 2014 to a level just below the 2010 total, leading to a -0.4 percent decline across the four-year period.[viii]

ED visits by type

In 2014, seven percent of ED visits were for a behavioral health condition, based on a primary diagnosis code relat-

vi The initiatives created six strategies that hospitals could choose to implement: (1) partnering with community physicians or physician groups to reduce readmissions; (2) partnering with local hospitals to reduce readmissions; (3) having nurses responsible for medication reconciliation; (4) arranging a follow-up appointment before discharge; 5) having a process in place to send all discharge paper or electronic summaries directly to the patient's primary physician; and (6) assigning staff to follow up on test results that return after the patient is discharged. All were correlated with a lower readmission rate in the program's evaluation.

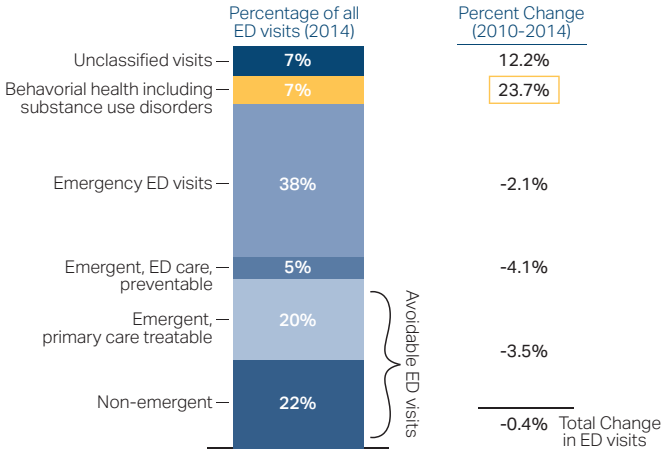
vii All avoidable hospitalization rates are measured per 100,000 residents.

viii This finding may be a preliminary sign that access to care is improving in Massachusetts, potentially as a result of the ACA.

ed to mental health, alcohol, or substance abuse.[ix] While standard, this measure of visits related to behavioral health is very conservative because it does not include visits where a behavioral health condition was a secondary diagnosis or where a medical problem (such as injuries from a motor vehicle accident) had a behavioral health condition as its root cause. When secondary diagnoses were included, a behavioral health condition was a factor in 14 percent of all ED visits.

Within the 0.4 percent drop in overall ED use, the trend for visits related to a behavioral health condition was notable. The number of ED visits related to behavioral health grew by 23.7 percent between 2010 and 2014, while the number of other visits fell by 1.8 percent (see **Exhibit 8.4**).[x]

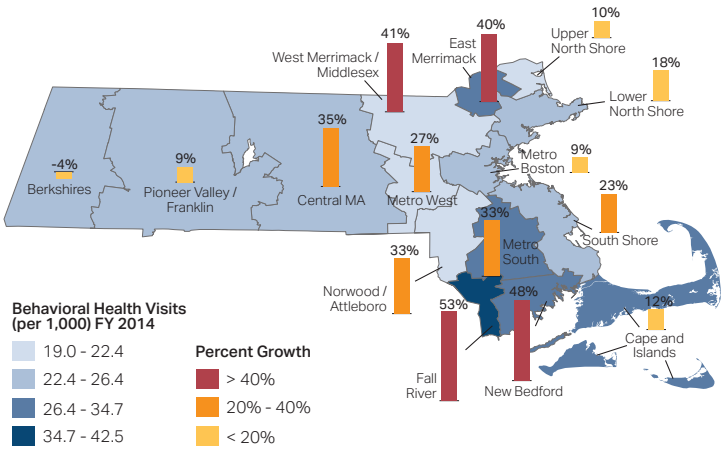
Exhibit 8.4: Emergency Department visits by type, 2010 – 2014



Note: Definition for avoidable ED visits based on NYU Billings Algorithm.
Source: NYU Center for Health and Public Service Research; HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, FY2010-2014

Adjusted for age and sex, behavioral health ED visits varied by more than two-fold between regions, from 20 per 1,000 residents in West Merrimack/Middlesex to 43 per 1,000 in the Fall River area. The latter is driven by a dramatic 53 percent increase from 2010 to 2014 (see **Exhibit 8.5**). This variation and recent trend indicates important opportunities for the state and market participants to collectively address pressing community need. In preliminary research, the HPC has observed a strong negative correlation (-0.5) between numbers of behavioral health providers in each region (particularly psychologists and other providers) and rates of behavioral health-related ED visits. The HPC will continue to refine and develop this analysis.

Exhibit 8.5: Behavioral health-related emergency department visits per 1,000 residents, 2010 – 2014
Vertical bars show growth in visits



Note: Behavioral health includes mental health and substance use disorders. All conditions are based on primary diagnosis. All rates are adjusted for age and sex.
Source: NYU Center for Health and Public Service Research HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, FY2010-2014

Exhibit 8.4 further categorizes the state's ED visits that were not related to behavioral health according to whether they represented emergencies, events that could have been prevented with more effective primary care, events that could have been treated in a primary care setting, or events that were not emergent.[xi] Despite the overall decline in ED use, the HPC continues to find that more than 40 percent of ED visits were either non-emergency or could have been treated in primary care, suggesting opportunities to improve patients' access to primary care and other non-emergency services. Moreover, adjusted for age and sex, residents of communities in the lowest income quartile had more than three times the avoidable ED rate of those in the highest income quartile (271 versus 81 per thousand residents, respectively), a troubling finding that signals significant opportunity for addressing disparities.[xii]

ix The HPC used the Billings algorithm to categorize ED visits as emergent, avoidable, preventable, or behavioral health (mutually exclusive categories).

x When secondary diagnoses are included, the number of ED visits related to behavioral health grew by 28 percent.

xi While some ED visits related to behavioral health are likely preventable or avoidable, the Billings algorithm treats "behavioral health," "preventable," and "avoidable" as mutually exclusive categories and groups all visits with a primary behavioral health diagnosis in the "behavioral health" category.

xii To assess the percentage of visits that are avoidable, the Billings algorithm analyzes the diagnoses recorded on emergency department claims and assigns a probability that each ED visit could have been prevented. This algorithm is intended as measure of the overall quality of primary care for a population and is not suitable for assessing individual visits or for use in payment.

Individuals with very high ED use

The HPC's 2014 Cost Trends Report's analysis of high-cost patients showed ED spending was highly concentrated, with less than 1 percent of the commercial population accounting for 8 percent of commercial ED spending, and less than 1 percent of the Medicare population accounting for 5 percent of commercial ED spending. Several studies have also shown that a relatively small number of ED patients were responsible for a disproportionate share of ED visits.[12,13,14] High utilizers have been a topic of concern in emergency medicine because EDs are not the optimal setting to take care of repeat patients with complex conditions that require continuous, frequent attention.

The research literature indicates that frequent users of the ED were generally heavy users of other health care services, including office visits and other hospital services.[15] These patients also had a higher incidence of mental illness and were in poorer health than non-frequent users.[15,13] In analyzing the Massachusetts ED data, the HPC found that patients with at least five visits in 2014 (7 percent of patients) accounted for one-third of ED visits in that year and those with between two and four visits accounted for another one-third (see **Exhibit 8.6**). Behavioral health conditions[xiii] were more prevalent among frequent ED users (5+ visits) than other users, 11 percent versus 5 percent.[xiv] These findings highlight an opportunity to reduce spending and improve care for a small targeted population through better access to and coordination of care, which can have a large impact on overall ED spending.[16]

Strategies to reduce ED use

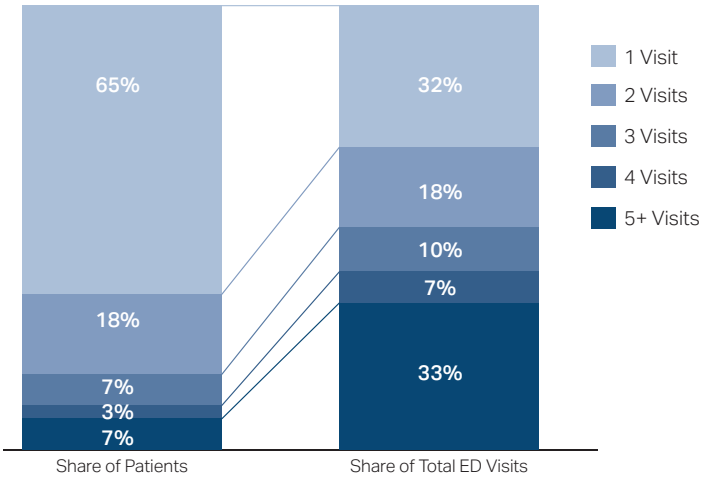
Reducing avoidable ED use requires a variety of strategies. In the past, the HPC has suggested community collaboration and care management as ways to reduce avoidable ED use among patients with complex medical conditions. Other strategies to reduce avoidable ED use include expanding after-hours access, promoting appropriate ED use among patients with financial incentives and education, and redesigning care.

Expanding after-hours access

Demand for EDs is driven, in part, by the fact that they are open at all hours and do not require appointments.[17] Consistent with the evidence that lack of access to care after-hours drives ED use,[11,18,19] research has also found

Exhibit 8.6: Emergency Department visits by patient visit frequency, 2014

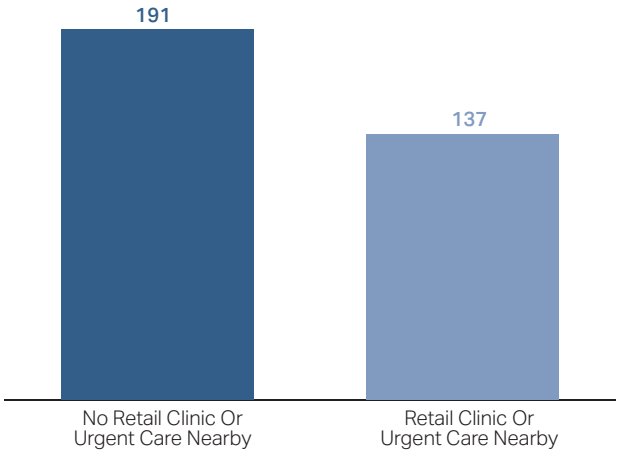
Visits per year



Source: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, FY2014

Exhibit 8.7: Avoidable Emergency Department use by proximity to retail clinic or urgent-care sites, 2014

Number of avoidable ED visits per 1,000 residents



Note: Residents shown all live within 5 miles of an ED. Residents who do not live within 5 miles of an ED are excluded from figure.

Source: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database FY2014; Massachusetts Department of Public Health

that the availability of retail clinics was associated with a reduction in emergency department visits.[20] The HPC's work shows that, in 2014, for Massachusetts residents who lived within five miles of an ED, avoidable ED use was 30 percent lower if there was also an urgent-care center or retail clinic within five miles (see **Exhibit 8.7**). This finding suggests that improved access to alternative sites of care could significantly reduce unnecessary utilization of EDs.[xv]

xiii Behavioral health conditions were identified based on the primary diagnosis only.

xiv Analyses of high ED utilizers conducted by hospitals participating in the HPC's CHART investment program reinforced that behavioral health conditions, and economic and social challenges, are common among patients with frequent ED use.

xv This finding does not control for income, which is correlated with the locations of urgent care centers and retail clinics; the effect is lower when this adjustment is made. The HPC plans to present additional research on primary care access in 2016.

In addition, removal of practice restrictions for nurse practitioners has been linked to a 20 percent reduction in ambulatory-care sensitive ED visits in national data (see **Chapter 9**: **Access to Primary Care**).[21] Removal of such restrictions could also lower costs for, and boost the expansion of retail clinics, which are related to reduction in avoidable ED visits.[22]

Another possible way to enhance access to care is through telemedicine and other technology. Extending patients' ability to communicate with health professionals on nights and weekends or when transportation barriers exist may avoid unnecessary visits to EDs. For example, since 2006, New Mexico has been operating a 24/7 registered-nurse call center that is free to all residents. This hotline fields 15,000 calls per month and diverts 65 percent of callers from EDs at a savings of $41 per call.[23] While some Massachusetts residents have access to such services today through providers, insurers, or add-on services offered by their employers, many Massachusetts residents do not.

Promoting appropriate ED use with incentives and education

Insurers play an important role in directing enrollees to lower-cost settings of care where possible. Tufts Health Plan and the Group Insurance Commission promote the use of urgent-care centers for non-emergent visits through their member newsletters. They also highlight conditions for which patients should be seen at an urgent-care setting and the co-pay differential between a non-emergency ED visit and urgent-care visit. Primary care physicians (PCPs) can also promote appropriate use of the ED by educating patients about conditions that merit emergency room visits and telling patients when urgent-care and retail clinics are good alternatives. For better proactive outreach to patients, providers must be aware of their patients' ED visits, which is facilitated by access to better data, including utilization histories and event notification systems (ENS) (see **Sidebar: "Event notification system"**).

Appropriate triage of medical emergency

Finally, providers may be able to intervene at the time of care to direct patients to appropriate settings. For example, Project Ethan (Emergency TeleHealth and Navigation), which started in December 2014, is a Houston, Texas-based ED telehealth intervention aimed at reducing the number of unnecessary trips to the ED by using technology that allows emergency physicians to communicate with patients in their homes. When responding to a 911 call, paramedics are able to use a computer tablet to connect a patient to an emergency-medicine physician while the patient is still at home. In many cases, the physician is able to address the symptoms via the tablet or redirect the patient to an alternative site. Another approach for hospitals to reduce unnecessary ED use is to run parallel EDs and urgent-care centers. When appropriate, patients are stabilized in the former and transferred to the latter.

MASSACHUSETTS INITIATIVES TO REDUCE AVOIDABLE HOSPITAL USE

The HPC's Community Hospital Acceleration, Revitalization, and Transformation (CHART) program invests in Massachusetts community hospitals to enhance their delivery of efficient, effective care. The HPC has invested more than $60 million to maximize appropriate hospital use and enhance behavioral health care. For example, through CHART, Holyoke Medical Center is investing $3.9 million to develop a cross-setting care team that serves patients with a history of recurrent ED utilization and behavioral health diagnoses. ED nurses trained in behavioral health screen, stabilize, and triage behavioral health patients. They are supported by a multi-disciplinary ambulatory intensive care unit (an outpatient clinic for intensive behavioral health treatment, care planning, and linkage to community resources). The overall initiative is focused on reducing ED utilization for patients with behavioral health conditions by 20 percent. In addition, as part of a state-wide effort to tackle this dramatic increase in behavioral health related ED use, the state FY2016 budget included $250,000 to develop a pilot behavioral health triage program in the greater Quincy area.

Health information technology generally supports providers in providing patient-centered, integrated, and efficient care in general, and specifically to reduce unnecessary hospital use. The HPC and other market participants are actively investing in telehealth technologies that allow patient-to-provider or provider-to-provider consultations when the parties are in different locations. Given significant behavioral health capacity challenges and morbidity in the Commonwealth, one of the more promising applications of telehealth is promoting behavioral health integration.[24,25,26,27] Emerging evidence from Wyoming, Georgia, New York, and Vermont indicates that the use of telehealth can enhance access by overcoming integration barriers and workforce limitations. This can decrease total health care spending and provide services at equal or

Event notification system (ENS)

Population health management is increasingly viewed as a means of reducing avoidable hospital use, and providers are turning to tools to enable related processes like effective care coordination and care transitions. One promising tool is an event notification system (ENS). An ENS has the potential to rapidly and automatically deliver essential information to PCPs on when and where their patients are accessing high-intensity settings.

When a patient is registered at or discharged from a hospital or post-acute care facility, often, the patient's PCP is not aware this has happened. In a typical ENS, a message is automatically generated with the patient's name and other basic identifiers (such as medical record number or date of birth) and the name of the provider where the patient is being seen. This message is routed to a centralized database that compares the patient identifiers to a roster of patients of each primary care practice and accountable care organization (ACO) in the state. If a match is found, the patient's PCP is notified via an e-mail, a page, or an alert in the electronic health record (EHR). This translation of data on the patient to a provider takes just seconds to complete. With a near real-time notification in hand, a primary care practice or ACO can choose to intercede on behalf of the patient in a meaningful way. For example, a case manager might be deployed to the ED to help avoid a preventable hospitalization, or the PCP might call and consult with the emergency physician.

When used this way, an ENS serves as an information backbone to help PCPs and ACOs ensure patients are receiving the appropriate level of care. ENSs have been widely regarded as one of the most crucial tools for population health management in Maryland, which has had tremendous early success in driving down all-cause hospital utilization since implementing an ENS in 2013. Similarly, a recent study of event notifications in Rhode Island found that practices utilizing notifications to help track and coordinate care for their patients experienced a readmission rate 11 percent lower than those practices that did not.

ENS currently operates in Massachusetts across a number of providers. Within systems, providers have long-established notification tools that inform their PCPs when a patient comes to an affiliated hospital. These notifications are either enabled by a shared EHR between primary care and affiliated hospitals, or technology connections that have been built directly between two providers. Although these direct-connection systems provide some clinical value, they leave substantial cracks in the network of providers patients might encounter as they move in and out of the health care system. A statewide ENS would address these challenges.

The Commonwealth has taken on this challenge and is currently exploring opportunities to develop a statewide ENS. Doing so may also involve re-examining statutory consent requirements and making the changes necessary to broaden patients' participation in health information exchange, while balancing privacy concerns. Many stakeholders view the current consent requirements as a barrier to broad participation in the Massachusetts Health Information Exchange (Mass HIway).

higher quality than in-person care.[28,29,xvi] The HPC received $500,000 from the Massachusetts Legislature to pilot enhanced telehealth applications in the Commonwealth; this initiative will begin in early 2016 and will augment current HPC telehealth investments in four CHART hospitals, thereby enabling patients to receive care without visiting the hospital. Blue Cross Blue Shield is also piloting mobile-phone-based video-conferencing between providers and patients with two physician organizations with a goal of expanding the offering to all members covered under risk-based contracts.[30] If successful, these programs could be expanded to similar or new populations.

xvi Wyoming found that using telehealth to treat children with behavioral health issues in the state's Medicaid program reduced use of psychotropic medications in young children by 42 percent and had a 1.82:1 return on investment. Georgia uses telehealth for mental health and substance use disorders in its corrections system at a savings of $500 per encounter (through staff savings and reduce cost of transportation to care providers). Use of telehealth to increase access to behavioral health services for patients in skilled nursing facilities in Vermont and New York also derived substantial savings.

In addition, health information technology enables providers to access information on patients' clinical condition or use of care often in real-time. Event notification offers providers immediate information on their patients' use of care, including hospital admissions, discharges, and transfers, thereby facilitating informed and effective care.

In summary, Massachusetts residents use more hospital, ED, and outpatient care than the rest of the U.S. Readmissions rates are high relative to the national average and vary among hospitals. Avoidable hospital use, both inpatient and ED, varies with community income. While rates of potentially avoidable ED visits were lower in 2014 than in 2010, those years also saw a dramatic surge in behavioral health-related ED visits, particularly in some parts of the state. These high rates of hospital use, and high rates of avoidable hospital use, contribute to high health care spending, and represent a key area for focus and improvement—in redirecting care to more appropriate settings, redesigning care, and offering timely treatment to avoid unnecessary complications of health conditions.

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SECTION III: OPPORTUNITIES TO INCREASE QUALITY AND EFFICIENCY

Access to Primary Care

9

New models of care, such as patient-centered medical homes (PCMHs) and accountable care organizations (ACOs), rely on a robust backbone of primary care services accessible to all residents. Literature demonstrates that when people have better access to primary care, treatment occurs earlier, leading to fewer preventable emergency department (ED) visits and hospital admissions.[1] Areas with higher ratios of primary care providers (PCPs) to the population have also been associated with lower total health care costs, possibly because better preventative care leads to fewer hospitalizations and serious medical events.[1] This chapter describes access to primary care in Massachusetts including an analysis based on the number of PCPs per resident and a discussion of policy options to improve access.

Massachusetts enjoys a relatively high percentages of residents reporting a "usual source of care" - a metric often interpreted to be reflective of having a PCP and routine doctor visits.[2] Yet having a usual source of care or accessing routine office visits do not necessarily imply availability of primary care when it is most needed. Analysis of a 2014 survey of more than 4,000 Massachusetts households conducted by the Center for Health Information and Analysis (CHIA) found that, among respondents who had been to the ED in the past year, over half said they had done so because they could not get an appointment at their usual source of care when needed.[3]

Furthermore, access to primary care may vary by population and region. A 2013 survey of Massachusetts residents found that one in five individuals with public coverage had difficulty finding a PCP, more than twice the rate of those with private insurance.[4] With respect to geography, a substantial number of respondents to that survey also reported unmet needs due to provider location. Lack of PCPs in one's geographic area can hamper access.

The federal government has defined Health Professional Shortage Areas based on numbers of PCPs in an area, and seeks to improve access by directing grants and other initiatives to those areas.[i] As of 2014, Massachusetts had roughly 500,000 residents living in such areas, 20 times the number in New Jersey, for example, despite Massachusetts' lower population and greater number of providers.[5,6]

REGIONAL VARIATION IN SUPPLY OF CARE PRIMARY CARE PROVIDERS

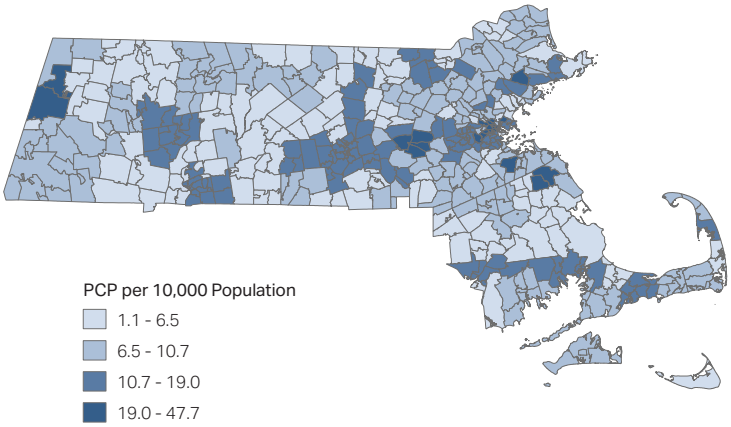
To further explore regional access to PCPs in Massachusetts, The HPC analyzed numbers of per-capita providers by primary care service area (PCSA) across Massachusetts (see **Exhibit 9.1**). These service areas are defined by the federal government based on typical distances traveled for primary care services and do not necessarily correspond to market-based definitions of service areas used in anti-trust considerations. The HPC included numbers of full-time equivalent family physicians, general internists, geriatricians, and general pediatricians as well as primary care nurse practitioners (NPs), and physician assistants (PAs).[ii]

i The Health Resources and Services Administration (HRSA) defines Health Professional Shortage Areas (HPSA) as localities with ratios of primary care physicians to population greater than 1:3,500. As of 2014, Massachusetts had 67 HPSAs. HPSA designation benefits include access to state and federal programs providing physician recruitment assistance and financial incentives, such as student loan forgiveness, Medicare bonuses, as well as preferential status for other grant programs.

ii For purposes of this section, the state is divided into 158 regions called Primary Care Service Areas (PCSAs). These areas were developed by researchers associated with the Dartmouth Atlas of Health Care, working with the U.S. Health Resources and Services Agency, and represent a geographic approximation of patients' travel patterns to obtain to primary care services. Also, according to common practice, the HPC weighted nurse practitioners and physician assistants as equivalent to .75 relative to a physician, given historical data on productivity. Data on physicians and physician assistants are from the Massachusetts Department of Public Health (DPH) while data on nurse practitioners derive from the SK&A database.

Exhibit 9.1: Number of primary care providers per 10,000 Massachusetts residents, by primary care service area

Full-time equivalent physicians, nurse practitioners and physician assistants



Note: Massachusetts is divided into 158 regions called Primary Care Service Areas (PCSAs). These areas were developed by researchers associated with the Dartmouth Atlas of Health Care and represent a geographic approximation of patients' travel patterns to obtain to primary care services. According to common practice, Nurse Practitioners and Physician Assistants weighted as equivalent to .75 relative to a physician. See **Technical Appendix**.

Source: SK&A Office Based Physician Database, September 30, 2015; Massachusetts Department of Public Health: Health Care Workforce Center

The HPC found more than 30-fold variation in the number of PCPs per 10,000 residents - from highs of 47.7 in Cambridge and 34.1 in Boston, to lows of 2.1 in Bellingham and 1.6 in South Weymouth. In general, the western and northwestern regions of the state had fewer PCPs per resident. Areas of low population density also had fewer PCPs, consistent with national trends.[7] In the most rural quartile of the state, there were 8.1 PCPs per 10,000 residents versus 12.0 in most populous.[iii] This Report next discusses opportunities to increase primary care capacity in the state, highlighting a particular option that is within the direct purview of the state legislature.[iv]

OPPORTUNITIES TO EXPAND ACCESS TO PRIMARY CARE PROVIDERS

There are many ways to expand access to primary care services. One method is to simply increase the number of PCPs by investing in training, recruitment, and retention programs. Currently, the Commonwealth's Department of Public Health Workforce Center runs one such program that offers loan repayment and grants to medical students in an effort to incentivize them to choose primary care residencies.

Other strategies for increasing access are found within the PCMH model, including practicing team-based care and providing access beyond traditional office houses and face-to-face office visit means. Team-based care focuses on increasing the responsibilities of non-physician licensed providers to free up physicians to see additional patients. Studies show that up to 60 percent of preventative services, 25 percent of chronic care, and 10 percent of acute care can be reallocated to non-physician team members such as nurses, health educators, therapists, and social workers.[8] One estimate suggests that 45 percent of a physician's day is spent outside the exam room working on documentation and follow-up and that many of these tasks can be reallocated to clerical staff.[9] Thus, delegating clerical tasks, such as prescription renewals, to non-licensed providers can also expand a physician's capacity and allow them to see more patients, increasing access. With regard to new modes of access, research shows that up to 10 percent of a real-time office-based care, both chronic and preventative, can be delivered remotely by providers to patients either by telephone or email.[10,11] Adopting telehealth and e-communication technologies not only expands coverage in low-provider areas ameliorating geographic maldistributions of providers, but also increases face-to-face time for patients needing more traditional visits.

As more and more primary care practices in Massachusetts adopt the PCMH model, the Commonwealth should expect to see improvements in overall patient access to primary care. In 2015, 25 percent of Massachusetts primary care physicians practiced in recognized PCMHs, up from 20 percent in 2014.[v] A variety of efforts are underway across the state to increase this percentage over the coming years, including the HPC's PCMH and ACO certification programs.

Scope of practice reform

Another important step the Commonwealth could take to increase access to primary care is to remove or lessen scope of practice restrictions on NPs. There are more than 8,000 licensed NPs in Massachusetts, approximately half of whom are clinically active providers of primary care.[12] NPs are registered nurses with additional education (usually a master's degree and sometimes a doctorate), including a minimum number of clinical hours of practice. Given

iii Areas were defined based on the population density of the PCSA.

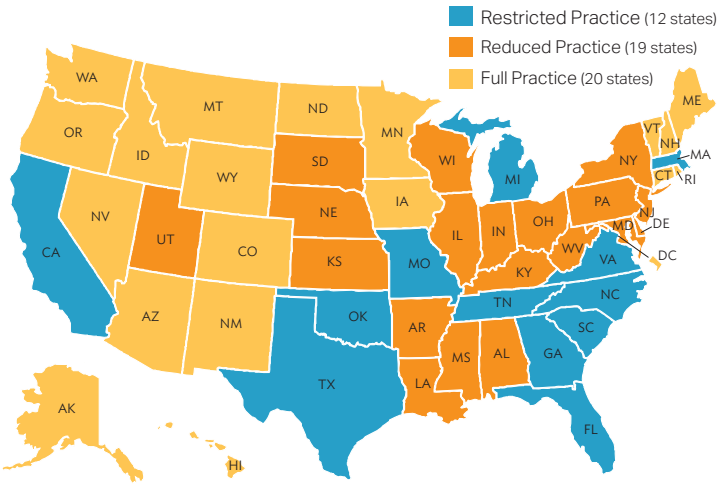
iv Related topics, including the availability of after-hours care and the relationship between provider access and ED visits are discussed further in **Chapter 8: Avoidable Hospital Use**.

v These data are based on numbers of providers who have achieved National Committee for Quality Assurance (NCQA) 2011 and 2014 PCMH recognition at Level 1, 2 or 3.

the shorter educational pathway (compared to physicians) and strong interest in the profession in recent years, the number of NPs in the U.S. is expected to double between 2010 and 2025, compared to much slower growth in the numbers of primary care physicians.[13] Studies have shown comparable quality of care between NPs and primary care physicians across all domains that have been measured. NPs provide care at lower costs and are more likely to treat Medicaid patients and practice in rural areas.[14] In Massachusetts, CHIA's 2015 household survey found that low income individuals were less likely than high income individuals to have had a primary care physician visit in the past 12 months, but more likely to have had a visit with an NP, PA, or nurse midwife.[3]

The extent to which primary care NPs are able to meet demand for primary care services is influenced by state scope of practice (SOP) laws, which vary widely across the U.S.[15] With respect to these laws, Massachusetts is the only New England state that maintains significant restrictions on practice—particularly, the requirement that NPs must collaborate with physicians to develop treatment plans and prescribe drugs.[vi,16] The American Association of Nurse Practitioners has rated Massachusetts as one of the nation's 12 most restrictive states for NPs to practice (see **Exhibit 9.2**).

Exhibit 9.2: Nurse practitioner state practice environment, 2014



Note: States are defined primarily based on laws governing requirements surrounding physician collaboration and supervision.
Source: American Association of Nurse Practitioners

vi Also, any advance-practice nursing regulations governing the ordering of tests, therapeutics, and prescribing of medication requires both the Board of Registration in Nursing and Board of Registration in Medicine to meet and concur. Thus, the physician board can delay or block new legislative action removing restrictions on advanced-practice registered nurses.

Effectively, to practice fully in accordance with their education, NPs are dependent on finding physicians who are willing to allow them to practice. This dependency can cause critical care delays if collaborating physicians relocate or otherwise decide to end any given agreement, and often result in side-payments from nurses to physicians to maintain the agreements.[17]

In recent years, several organizations (the National Governors' Association, the Institute of Medicine, and the Federal Trade Commission) have conducted their own research on the appropriate level of supervision and collaboration required and have generally recommended the expansion of SOP for NPs.[18,19] The Federal Trade Commission concluded, for example, that SOP restrictions created undue barriers to practice and limited access to care without providing a benefit in terms of quality of care based on evidence.[20] One researcher found that when states removed NP practice barriers, access to care improved markedly, and such access led to 20 percent fewer ambulatory-care sensitive ED visits.[21] Another found that Medicare beneficiaries cared for by NPs incurred roughly 20 percent lower costs than those cared for by primary care physicians.[22] A study of retail clinics, which are typically staffed by NPs, found lower costs and more services provided in states with less restrictive SOP laws.[23] Finally, a study of states that changed their laws found that those that removed practice restrictions for NPs enjoyed a 30 percent increase in the effective supply of NPs, which could result from NPs relocating from other states, from more students enrolling in programs in the state, or existing NPs increasing their labor supply.[24]

As of this writing (January 2016) specific legislation that would remove practice restrictions on NPs is currently pending in the state Legislature and has been recommended by the U.S. Federal Trade Commission.[25] Efforts to remove practice restrictions on NPs and other advanced practice registered nurses can foster the provision of high-quality, low-cost care to all residents of Massachusetts.

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SECTION III: OPPORTUNITIES TO INCREASE QUALITY AND EFFICIENCY

10 Maximizing Value in Post-Acute Care

Following discharge from an acute hospital, a variety of post-acute care (PAC) services are available to patients needing nursing or rehabilitative care. PAC services include home health care and a range of institutional settings that vary in clinical capabilities and requirements, including skilled nursing facilities (SNFs), inpatient rehabilitation facilities (IRFs), and long-term care hospitals (LTCHs). The selection of appropriate PAC setting at discharge, quality of the PAC provider, and level of coordination of care as patients transition between settings have important implications for patient experience, clinical outcomes, and healthcare spending in the Commonwealth. Previous Health Policy Commission (HPC) research found that PAC use in Massachusetts is higher than the U.S. overall across all payer types. This chapter presents updated data and trends over time regarding differences in discharge patterns between Massachusetts and the nation overall, as well as variation between hospitals in the Commonwealth, particularly in the context of the growth of alternative payment methods (APMs).

PAC represents a significant share of annual health expenditures. In 2013, PAC accounted for about 16 percent of Original Medicare spending.[1] Controlling for population factors, an Institute of Medicine report found that differences in PAC spending accounted for 73 percent of all regional differences in Medicare spending.[2] These findings underscore the potential influence of local practice patterns on service use and opportunities to provide higher-value care. Different PAC settings have different capabilities, but there is overlap in the kinds of patients treated by the various PAC service types (see 2014 Cost Trends Report for overview of settings). Furthermore, the average cost of care differs enormously by setting, and all institutional settings are markedly more costly, on average, than home health. The choice of PAC setting also has implications for patient experience, particularly with respect to patient recovery occurring at home or an institutional facility.

The institutional PAC facilities are distinct, and where possible, the HPC considered each separately. However, limitations in the coding of some of the datasets complicated efforts to distinguish between the different institutional sites of care. For this reason, the HPC grouped SNFs, IRFs, and LTCHs together into one "institutional" category for many of the agency's analyses.

Choosing the appropriate setting of PAC is important in ensuring optimal care and has significant effects on the cost of an episode of care for many patients.[i] While some conditions, such as a traumatic brain injury or severe stroke, almost always require intensive institutional PAC, other conditions typically rely on more clinical discretion to determine the appropriate setting for PAC. Differences in practice patterns may be seen more clearly by examining trends following procedures around which less consensus exists regarding appropriate post-operative care, particularly with respect to the duration and intensity of rehabilitation, and thus discharge destination. The HPC has focused on joint replacements without major complications or comorbidities (DRG 470). PAC practice patterns following joint replacements represent a particularly important service area to track, given that the procedure is high volume, frequently requires some PAC, and may have greater opportunities for care improvement and relative standardization of PAC protocols, given that the procedure is typically non-emergent and elective.

i An episode of care includes all services, provided to a patient with a medical problem, within a specific time period.

OVERVIEW OF PAC USE

PAC use in Massachusetts and the U.S.

PAC use in Massachusetts is higher than in the U.S. overall across all payer types. Overall, in 2012, 39 percent of patients in Massachusetts had some form of PAC following an inpatient stay, compared to only 28 percent of patients nationwide (see **Exhibit 10.1**). These differences are observed for both public and private payers, and for home health care and institutional care. There was little change in discharge patterns in both Massachusetts and the U.S. from 2011 to 2012 (see **Technical Appendix** for 2011 numbers).

Exhibit 10.1: Distribution of Massachusetts and U.S. discharge destination by payer, all DRGs, 2012

Percentage of patients discharged to each category of care

For all discharges												
	Commercial			Medicare			Medicaid			Total		
	MA	US	Difference	MA	US	Difference	MA	US	Difference	MA	US	Difference
Routine	77.8	85.9	-8.1	39.1	50.8	-11.7	79.9	88.7	-8.8	60.9	71.6	-10.7
Home Health	14.6	7.8	6.8	24.9	18.5	6.5	11.7	5.2	6.5	18.7	11.7	7.0
Institutional	7.6	6.3	1.3	36.0	30.8	5.3	8.5	6.2	2.3	20.4	16.7	3.8
All PAC	22.2	14.1	8.1	60.9	49.2	11.7	20.2	11.3	8.8	39.1	28.4	10.7

Note: Institutional includes Skilled Nursing Facility; Short-term hospital; Intermediate Care Facility (ICF); and Another Type of Facility.
Source: HPC analysis of Healthcare Cost and Utilization Project (HCUPs) Massachusetts State Inpatient Database & Nationwide Inpatient Sample Survey, 2012

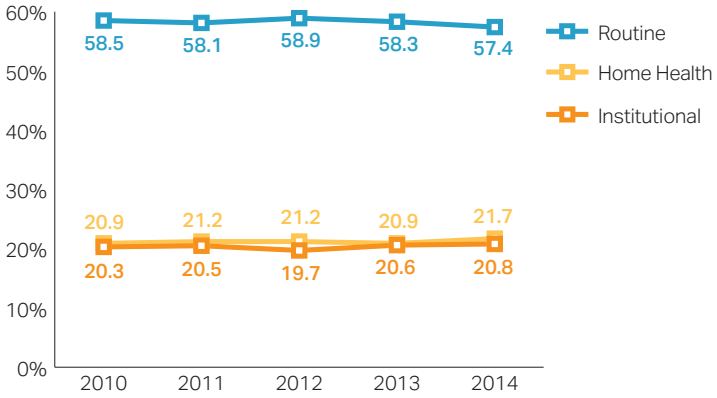
Hospital-level variation in PAC use within Massachusetts

In addition to higher average PAC use in Massachusetts compared to the U.S. overall, discharge patterns among hospitals in the Commonwealth continue to vary substantially in 2014— even adjusting for multiple factors, including age, admission source, and length of stay, among others. The probability of discharge to any PAC, versus routine home care, across all DRGs ranged from 23.4 percent at the 10th percentile to 50.8 percent at the 90th percentile. The HPC also found substantial variation in the probability of discharge to institutional care by hospital, which ranged from 6.5 percent at the 10th percentile to 13.6 percent at the 90th percentile. The range of hospital-level variation in discharges to institutional PAC remained fairly similar from 2010 to 2014 (see **Technical Appendix** for data).

Change in PAC use over time

From 2010 to 2014, the HPC found that the overall probability of discharge to institutional care increased slightly. However, adjusting for changes in case mix in the population over time, the HPC found that patterns of care overall changed little over time in Massachusetts. From 2010 to 2014, the probability of discharge to home health and the probability of discharge to an institutional setting each changed by less than one percentage point, adjusting for changes in case mix (see **Exhibit 10.2**).

Exhibit 10.2: Adjusted percentage of discharges to post-acute care, all DRGs, 2010 – 2014



Note: Probabilities adjusted for changes in case mix over time. UMass is excluded due to coding irregularities in the database. Institutional includes skilled nursing facilities, inpatient rehabilitation facilities, and long-term care hospitals.
Source: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, 2014 and Massachusetts Health Data consortium inpatient discharge database, 2010-2013

Spending on PAC

While PAC discharge patterns remained fairly constant over time, total spending across commercial and Medicare enrollees declined by 11.4 percent between 2011 and 2013. Total spending increased by 1.0 percent in the commercial population, and decreased by 11.8 percent in the Original Medicare population (see **Exhibit 10.3**). Over this time period, Medicare spending in Massachusetts declined more than in the U.S. overall.[ii] Total spending numbers reflect changes in prices for PAC services, intensity of services used (such as changes in average SNF length of stay), and overall PAC use in the population. While PAC discharge patterns have remained fairly consistent, the total number of PAC users has declined, likely due largely to a decline in inpatient hospital use over time.[iii] For Medicare enrollees who used PAC, average spending per user declined by 10.4 percent in SNFs, while spending increased in home health and most other service types. For commercial enrollees, spending per PAC user increased in most service types.

Exhibit 10.3: Post-acute care spending for commercial and Medicare enrollees, 2011 – 2013

	Commercial			Medicare		
	2011	2013	% change 2011 - 2013	2011	2013	% change 2011 - 2013
Total spending ($ millions)						
All PAC	$47.8	$48.3	1.0%	$1,420	$1,252	-11.8%
Institutional PAC	$28.1	$26.9	-4.3%	$1,197	$1,043	-12.8%
SNF	$19.6	$20.1	2.6%	$890	$761	-14.6%
IRF	$5.1	$5.7	11.8%	$144	$140	-2.5%
LTCH	$3.3	$1.1	-66.7%	$163	$143	-12.3%
Home Health	$19.7	$21.4	8.6%	$223	$209	-6.1%
Mean spending per user						
All PAC	$2,422	$2,568	6.0%	$15,439	$14,662	-5.0%
Institutional PAC	$8,800	$8,964	1.9%	$21,325	$19,724	-7.5%
SNF	$6,871	$7,381	7.4%	$17,827	$15,970	-10.4%
IRF	$17,509	$18,603	6.2%	$21,975	$22,734	3.5%
LTCH	$28,033	$25,799	-8.0%	$36,492	$39,137	7.2%
Home Health	$1,037	$1,178	13.6%	$3,012	$3,242	7.6%

Notes: Estimates include PAC utilization through December 31, starting within 60 days of an acute hospital discharge on or after January 1 of the calendar year. Spending includes insurer and enrollee payments for covered services.

Source: HPC analysis of the Massachusetts All-Payer Claims Database, 2011 and 2013

ii From 2011 to 2013, Medicare spending for all use of SNF, IRF, LTCH and home health services (including those not preceded by an inpatient hospital stay) declined 7.4 percent in Massachusetts, compared to a decline of 5.4 percent in the U.S. overall, based on HPC analysis of data from the Institute of Medicine.

iii From 2009 to 2013, total inpatient discharge volume in Massachusetts declined by about 6 percent, based on HPC analysis of data from MHDC.

PAC USE FOLLOWING JOINT REPLACEMENTS

PAC use in Massachusetts and the U.S.

For joint replacements, the difference in PAC use between Massachusetts and the nation was more pronounced, suggesting that practice patterns in Massachusetts favor more intensive PAC use where more variation exists and there is less consensus among providers with respect to appropriate post-operative care. In 2012, only 5.1 percent of Massachusetts patients had a routine discharge following a joint replacement, compared to 25.6 percent of patients nationwide (see **Exhibit 10.4**). Discharges to institutional care account for a large portion of the difference: in Massachusetts, 49.1 percent of discharges following joint replacement are to institutional settings compared to 35.6 percent in the U.S. overall. However, PAC use following joint replacements declined in both Massachusetts and the U.S. from 2011 to 2012, with care patterns changing more dramatically in Massachusetts. Across all patients, on average, institutional discharges following joint replacement declined 2.5 percentage points in Massachusetts (from 51.6 percent to 49.1 percent) compared to 0.5 percentage points in the U.S. (from 36.2 percent to 35.7 percent) from 2011 to 2012. Institutional discharges following joint replacements declined across all payers, including commercial (decline of 3.7 percentage points), Medicare (decline of 3.4 percentage points), and Medicaid (decline of 0.9 percentage points).

Exhibit 10.4: Discharge destination by payer following joint replacement (DRG 470), Massachusetts and the U.S., 2012

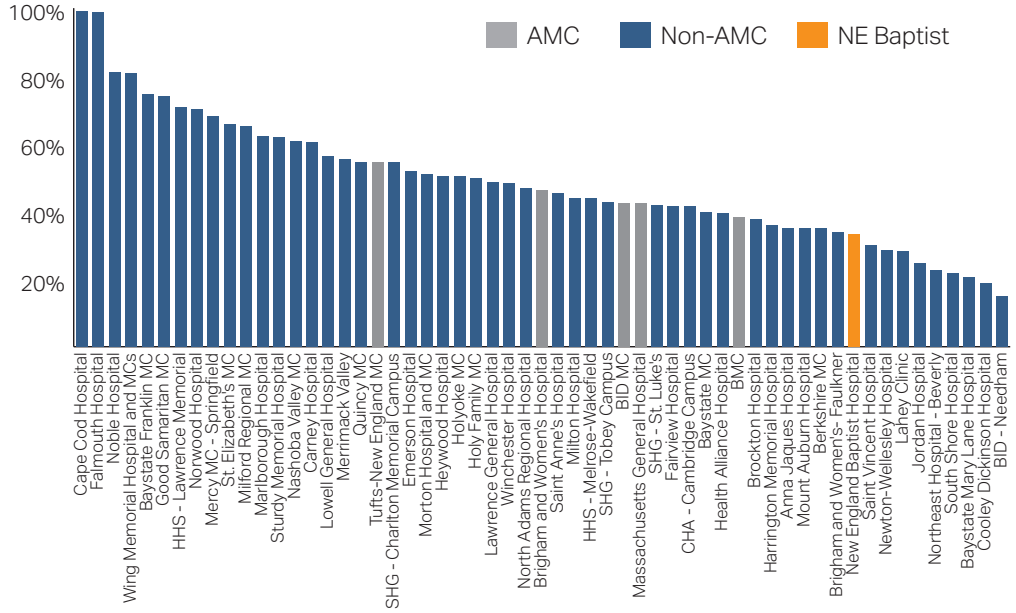
Percentage of discharges to each post-acute care setting

For DRG 470 (joint replacement)												
	Commercial			Medicare			Medicaid			Total		
	MA	US	Difference	MA	US	Difference	MA	US	Difference	MA	US	Difference
Routine	6.4	35.5	-29.1	3.4	18.9	-15.4	13.1	31.5	-18.4	5.1	25.6	-20.6
Home Health	67.2	48.2	19.0	29.7	32.5	-2.8	47.9	39.5	8.5	45.9	38.7	7.2
Institutional	26.4	16.3	10.1	66.8	48.6	18.2	38.9	29.0	9.9	49.1	35.7	13.4
All PAC	93.6	64.5	29.1	96.6	81.1	15.4	86.9	68.5	18.4	95.0	74.4	20.6

Note: Institutional includes Skilled Nursing Facility; Short-term hospital; Intermediate Care Facility (ICF); Diagnosis-related group (DRG); and Another Type of Facility.
Source: HPC analysis of Healthcare Cost and Utilization Project (HCUPs) Massachusetts State Inpatient Database & Nationwide Inpatient Sample Survey, 2012

Exhibit 10.5: Percent of discharge to institutional post-acute care following joint replacement (DRG 470), by hospital, 2014

Adjusted share of discharges to an institutional setting versus home health or routine care



Note: Probabilities for each hospital were calculated after adjusting for the following: age, sex, payer group, income, admission source of the patient, and length of stay. The agency's sample included only adult patients who were discharged to routine care or some form of PAC. Specialty hospitals, except New England Baptist, were excluded from the display table and the average hospital rate. UMass is excluded due to coding irregularities in the database. Institutional includes skilled nursing facilities, inpatient rehabilitation facilities, and long-term care hospitals. DRG= diagnosis-related group; NE Baptist= New England Baptist; AMC= Academic Medical Center (see Technical Appendix).

Source: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, 2014

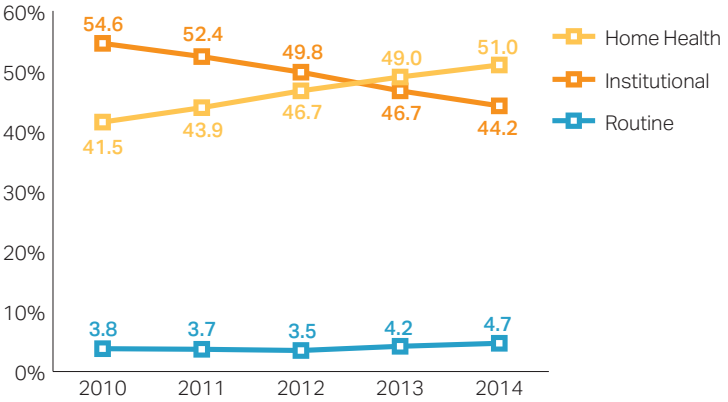
Hospital-level variation in PAC use within Massachusetts

Within Massachusetts, hospitals varied in the extent to which they discharge patients to institutional PAC following joint replacement surgery. For patients recovering from joint replacement surgery, the probability of discharge to institutional PAC ranged from 70.6 percent at the 90th percentile to 28.3 percent at the 10th percentile (see **Exhibit 10.5**).

In the last five years, care patterns following joint replacement changed dramatically in Massachusetts (comparable data for the U.S. over this time period is not available). From 2010 to 2014, the share of patients discharged to institutional care following a joint replacement fell by 10.4 percentage points, from 54.6 percent in 2010 to 44.2 percent in 2014 (see **Exhibit 10.6**). Meanwhile, over this time period there was a 9.5 percentage point increase in share of patients discharged to home health care, suggesting a shift in the type of PAC setting following a joint replacement. At an individual hospital level, 49 out of 57 hospitals in the sample[iv] decreased the probability of discharge to institutional PAC (versus to home health or routine care) following joint replacement from 2010 to 2014, with an average decrease of 17.7 percentage points (see **Exhibit 10.7**). While this change in discharge patterns may reflect a focus on adopting best practices for discharge, these changes can also reflect improved care practices for surgery and other hospital care, which can serve to improve patient status at discharge, increasing the likelihood of discharge with home health (or a routine discharge), rather than a need for institutional care.

Exhibit 10.6: Discharge destination of patients following joint replacement (DRG 470), 2010 – 2014

Percentage discharged to each setting

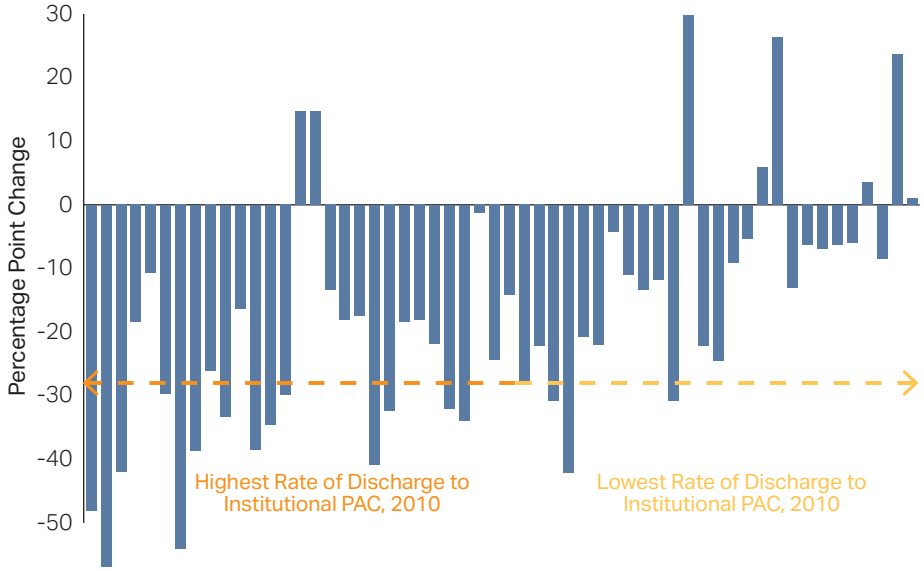


Note: UMass is excluded due to coding irregularities in the database. Institutional includes skilled nursing facilities, inpatient rehabilitation facilities, and long-term care hospitals.

Source: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, 2014 and Massachusetts health Data consortium inpatient discharge database, 2010-2013

Exhibit 10.7: Change in percentage of discharges to institutional post-acute care following joint replacement (DRG 470), by hospital, from 2010 to 2014

Percentage point change



Note: Hospitals ranked by rate of institutional PAC use in 2010. Hospitals with fewer than 15 joint replacement discharges in 2010 were excluded. Probabilities for each hospital were calculated after adjusting for the following: age, sex, payer group, income, admission source of the patient, and length of stay. The agency's sample included only adult patients who were discharged to routine care or some form of PAC. Specialty hospitals, except New England Baptist, were excluded. UMass is excluded due to coding irregularities in the database. Institutional includes skilled nursing facilities, inpatient rehabilitation facilities, and long-term care hospitals. DRG= diagnosis-related group; (see **Technical Appendix**).

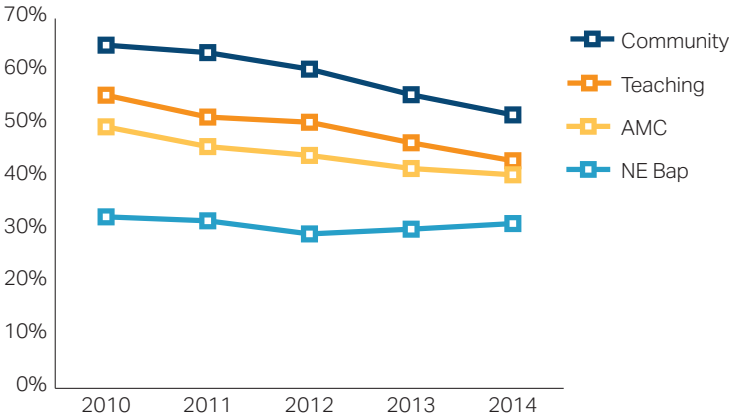
Source: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, 2014 and Massachusetts Health Data consortium inpatient discharge database, 2010-2013

iv Hospitals with fewer than 15 discharges in 2010 were excluded. UMass was excluded due to coding inconsistencies in the database.

Discharge to institutional care following joint replacement surgery decreased substantially among all hospital types. The largest magnitude of change was in community hospitals (13 percentage points), although this hospital group also started with the highest institutional discharge rate in 2010 (see **Exhibit 10.8**).

The dramatic change in joint replacements was fairly unique among DRGs. Among the top 20 most common DRGs in 2010 , including joint replacement surgery, the share of patients discharged to an institutional setting increased for 10 DRGs and decreased for 10 (see **Technical Appendix**). Massachusetts' hospitals efforts in joint replacements narrowed the gap in practice patterns on joint replacements with the U.S. overall, highlighting the opportunity for improvement in PAC practice patterns.

Exhibit 10.8: Percent of patients discharged to institutional post-acute care following joint replacement (DRG 470), by hospital type, 2010 – 2014



Note: The agency's sample included only adult patients who were discharged to routine care or some form of PAC. Specialty hospitals, except New England Baptist, were excluded. UMass is excluded due to coding irregularities in the database. Institutional includes skilled nursing facilities, inpatient rehabilitation facilities, and long-term care hospitals. DRG= diagnosis-related group. (See **Technical Appendix**).

Source: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, 2014 and Massachusetts Health Data consortium inpatient discharge database, 2010-2013

Spending on PAC following joint replacements

From 2011 to 2013, total spending for PAC following joint replacements declined in both the commercial and Medicare population, by 12.5 percent and 3.8 percent, respectively, despite a total increase in the number of inpatient joint replacement surgeries over this time period (see **Exhibit 10.9**).[v] Total commercial spending on SNFs declined dramatically at 27.1 percent (compared to an increase of 2.6% in total commercial SNF spending across all DRGs), possibly reflecting a shift from SNF use to home health use in this population.

Exhibit 10.9: Post-acute care spending following joint replacement (DRG 470), for commercial and Medicare enrollees, 2011 – 2013

	Commercial			Medicare		
	2011	2013	% change 2011 - 2013	2011	2013	% change 2011 - 2013
Total spending (dollars in thousands)						
All PAC	$10,494	$9,167	-12.6%	$88,873	$85,509	-3.8%
Institutional PAC	$5,206	$3,848	-26.1%	$64,424	$59,147	-8.2%
SNF	$4,845	$3,534	-27.1%	$54,968	$49,121	-10.6%
IRF	$290	$314	8.3%	$8,942	$9,544	6.7%
LTCH	$72	$0	N/A	$514	$482	-6.2%
Home Health	$5,288	$5,319	0.5%	$24,449	$26,363	7.8%
Mean spending per user						
All PAC	$2,777	$2,629	-5.3%	$10,705	$9,580	-10.5%
Institutional PAC	$4,368	$4,548	4.1%	$10,773	$9,952	-7.6%
SNF	$4,187	$4,315	3.1%	$9,971	$8,899	-10.8%
IRF	$8,520	$11,625	36.4%	$16,467	$18,144	10.2%
LTCH	$23,940	N/A	N/A	$24,479	$34,405	40.5%
Home Health	$1,462	$1,576	7.8%	$3,429	$3,534	3.1%

Note: DRG = diagnosis-related group.

Source: HPC analysis of Massachusetts All-Payer Claims Database, 2011 and 2013

v From 2010 to 2014, the total number of Medicare inpatient discharges for DRG 470 increased 17 percent; the total number of commercial inpatient discharges for DRG 470 increased 15 percent.

POLICY CONSIDERATIONS

To support continued efforts to ensure that patients are discharged to appropriate high-quality PAC providers, particular priority areas of focus include: 1) supporting use of evidence-based discharge planning; and 2) increasing the ability of PAC providers to compete on quality for accountable care organization (ACO) provider networks, including PAC providers collecting standardized patient assessment and quality information.

Improving evidence-based discharge planning

Variation in PAC discharge patterns across hospitals suggests opportunity for improvement. In addition to clinical factors, a variety of non-clinical factors influence discharge decisions, including the availability of PAC facilities or open beds, the hospital's or family's proximity to PAC providers, patient or family preference, and the presence of a spouse or other caregiver at home. Planning tools rationalize this process and enable systematic consideration of key factors; greater adoption of discharge planning tools and a broader consensus on guidelines for patient discharge planning are critically needed.

Evidence-based discharge assessment tools can support providers in making the appropriate discharge decisions for their patients. A number of tools exist, factoring assessment of patient functional and cognitive status, with some also factoring social factors, such as level of available assistance at home. Massachusetts General Hospital has recently created one such tool for use with their trauma patients.[vi] Many of the functional status assessment tools for inpatient discharge planning are versions of tools that can be used across different PAC settings as well to standardize assessment of quality improvement across settings, such as the Continuity Assessment Record and Evaluation tool, or Boston University's Activity Measure of Post-Acute Care (AM-PAC) tool. However, few hospitals routinely use these tools, and more work is needed to develop guidelines for patient discharge planning. As discharge best practices become clearer, hospitals can then set internal goals. For example, in its 2015 Pre-filed Testimony, Cape Cod Hospital cited their goal of reducing the number of patients they send to SNFs and increasing the number sent home following total knee replacement (TKR) and total hip replacements (THR). They cited coming to this conclusion after reviewing their Medicare Spending per Beneficiaries (MSPB) reports and concluding that that a high number of their TKR and THR patients were discharged to SNFs, even though best practice models dictate that many of these patients can safely be discharged with home health.

A federal law enacted in 2014 requires PAC providers to report data from a standardized patient assessment tool, data on quality measures, and data on resource use and other measures by 2019 or earlier.[vii] This requirement will allow data to be more easily exchanged among acute and PAC providers, in order to facilitate coordinated care and improved patient outcomes. Sharing data for these purposes should be an important goal for providers. Hospitals could also use items from the standard assessment tool at discharge from the hospital to inform placement decisions.

ACO provider networks and quality improvement

In addition to recommending an appropriate setting of care for discharge (such as SNF versus home health), recommending a high-quality provider is important, particularly in the context of APMs (see **Sidebar: "Post-acute care and alternative payment methods"**). Accountability for PAC spending and PAC-related quality measures has made strategic partnerships with SNFs a critical success factor for Medicare ACOs. By partnering with high-quality PAC providers, ACOs can reduce length of stay and hospital readmissions, thereby improving quality and generating cost savings. Preferred-provider networks are not limited to ACOs, nor are they limited to SNF-hospital partnerships, as many providers also have relationships with home health agencies. However, SNFs are the most commonly used PAC institutional setting, and they account for half of Medicare post-acute spending nationally.[4] Considerable variation exists in SNF performance. In 2011, the average national 30-day re-hospitalization from SNFs was 20 percent, but some SNFs reported only a 10 percent re-hospitalization rate.[5]

vi Personal communication with Haytham Kaafarani, physician at Massachusetts General Hospital.

vii Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT Act of 2014).

Post-acute care and alternative payment methods

The Centers for Medicare and Medicaid Services (CMS) has implemented a number of national reform initiatives for Medicare payments in recent years that create incentives for providers to efficiently manage PAC utilization and spending. Massachusetts providers have been active in these initiatives. Massachusetts currently has 62 sites participating in Bundled Payments for Care Improvement Initiative (BPCI) and 10 accountable care organizations (ACOs).[6,7] The BPCI, which began in 2013, links payments for multiple services including hospitals, post-acute care providers, physicians and other practitioners.[6,8] By aligning provider incentives, BPCI encourages close collaboration across settings and specialties. ACOs are financially accountable for the cost and quality outcomes of a population, even if patients receive services from providers who are not part of the ACO (see **Chapter 11: "Alternative Payment Methods"**). Given that PAC services are a frequent component of Medicare beneficiaries' care, PAC services play an important role in the ACOs' care continuum.

Furthermore, early national evaluations of Medicare ACO performance suggest that many ACOs have identified PAC as an important area for improvement and have been successful in changing practices. Analysis of the round 1 and 2 Medicare Shared Savings Program (MSSP) revealed that the most significant decrease in total ACO spending during the first year occurred in SNF expenditures. The decrease in SNF expenditures ranged from 4.1 percent to 23.5 percent, with an average reduction in expenditures of 16.9 percent compared to baseline.[9] Spending reductions may have come from reduced length of stay in SNFs, in addition to reduced initiation. Evaluations also showed that utilization of home health were increasing, which may represent ACOs substituting lower-cost, lower-acuity facilities for higher-cost settings.

Currently, qualified Pioneer ACOs can take advantage of a 3-day inpatient stay requirement waiver, which allows qualified beneficiaries to be admitted to affiliate SNFs, either directly or with an inpatient-stay, without the otherwise required 3 day inpatient stay. In order to qualify, Pioneer ACOs must demonstrate that their SNF affiliates have the appropriate staff capacity and infrastructure to carry out coordinated care activities and that SNF affiliates have CMS quality ratings of three or more stars. In addition to the 3 day stay waiver, CMS' Next Generation ACOs program offers providers the ability to consider a preferred SNF networks as within the ACO network for the beneficiary reward, which gives patients who receive a majority of their care within the ACO a financial reward each year.

Despite competing business interests, the five Pioneer ACOs in Massachusetts have joined together to develop a set of standards for SNFs that participate in their three day stay waiver (see **Sidebar: "Post-acute care and alternative payment methods"**). In coordination, Partners Healthcare System (Partners) launched the SNF Collaborative Network in October 2013. Partners used a two-staged process in developing its SNF network: using publically available data (CMS Stars) to create an initial threshold and then using data provided by SNFs regarding days of clinical coverage and the rate that physicians see admitted patients within 24 and 48 hours to select the final 47 SNFs. Atrius Health (Atrius) conducted its own study to review the success of its SNF preferred provider network. Based on historical discharge patterns, Atrius created a network of 35 SNFs out of an original 100 that they worked with. After reviewing this network, Atrius found that their preferred SNFs had an average length of stay (LOS) of 15.8 days versus 22.3 in the out-of-network SNFs, and a readmission rate that was 25 percent lower as compared to non-preferred SNFs.[10] In addition to quality improvements, preferred networks also decrease hospital managerial and administrative burden. The ability to reward preferred providers with higher volume offers a valuable opportunity for hospitals to demand higher quality care from their SNF partners, potentially leading to reduced costs.

The CMS Five Star score is a common SNF quality metric that provides an objective and comparable quality measures, but it does not necessarily encompass SNF characteristics relevant to ACOs such as the ability to coordinate care, reduce readmissions, and provide quality medical coverage within facilities. SNFs can gain significant volume as a result of their strategic relationships with ACOs and affiliated hospitals, and thus it may benefit them to focus on quality improvement. Research identifies important metrics for choosing SNF partners, including: staffing ratios and mix, LOS, minimal use of temporary-agency personnel, warm handoffs, prompt patient intake screenings, medication management, rates of re-hospitalization, activities of daily living (ADL) scores, rates of catheter-associated UTIs (CAUTIs) and number of patients scheduled to see a primary care physician within seven days of PAC discharge.[11] Many of these improved quality strategies can also lead to reduced costs.

ACOs and hospitals may even be able to discourage patient selection by incorporating certain measures in their partnership criteria. Unfortunately, it is not uncommon for PAC providers to avoid accepting patients with certain medical complexities, behavioral health comorbidities, or socio-economic factors that are associated with higher costs of care for the PAC provider, such as patients with substance abuse disorder or those who are homeless.[3,12] Furthermore, these can make the PAC provider appear to be lower cost to a potential ACO partner. Delays in discharging patients who are medically ready to leave a hospital drives longer length of stay in hospitals, increasing costs for the hospital, and delaying patient access to rehabilitative services. ACOs can monitor a SNF's acceptance rate of patients with behavioral health comorbidities and decide to exclude a SNF that does not regularly accept those patients.

As quality measures are increasingly used, there is need for continued emphasis on identifying and validating risk-adjusted measures. Without validated measures, SNFs that accept sicker patients may look comparatively worse even if they successfully prevent readmission, which in turn may incent some SNFs to select healthier patients. Massachusetts Pioneer ACOs use one such tool, the PointRight Pro 30 Rehospitalization measure, which risk adjusts for 33 different clinical variables and compares a hospital's observed rehospitalization rate to their case mix adjusted rate and national benchmarks.

While Medicare has made great strides through its ACO programs in incenting high quality, more efficient PAC, Medicaid beneficiaries also represent a substantial share of users of PAC services and SNF services in particular. The movement of MassHealth toward payment models that support ACOs and total cost-of-care accountability is crucial to fully realizing the impact of ACOs on the PAC market in the Commonwealth. The HPC anticipates that ACOs, particularly with Medicare and Medicaid total cost-of-care risk, will continue to put pressure on the PAC market to improve, and the agency will monitor these changes over time.

In summary, PAC continues to represent an area for improvement in Massachusetts. The shift from institutional care to home health following joint replacement surgery suggests the opportunity to improve PAC practice patterns, particularly for cases around which less consensus exists regarding appropriate post-operative care. To this end, opportunities for providers include adopting evidence-based tools to improve discharge planning. Additionally, as APM use continues to grow in the Commonwealth, hospitals and PAC providers can consider partnership opportunities that focus on quality to ensure that high-quality care continues along the entire care spectrum.

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SECTION IV: PROGRESS IN ALIGNING INCENTIVES

Alternative Payment Methods

11

Chapter 224 of the Acts of 2012 calls for a transition to alternative payment methods (APMs) as a key strategy to promote high-quality, efficient care and reduce healthcare costs. Broadly speaking, APMs aim to change incentives so that providers benefit financially from keeping patients healthy, rather than from maximizing services rendered and associated revenue. APMs are intended to encourage providers to both reduce unnecessary services and to compensate providers for activities that promote effective, coordinated care, such as care transition management, longer patient visits, and between-visit communications. At the Health Policy Commission's (HPC's) 2015 Health Care Cost Trends Hearings, many payers and providers testified to the potential of such models to accelerate and support improvements in the efficiency and quality of patient care, including caring for patients in their home communities and introducing innovative telehealth technology. At the same time, evidence from a variety of sources highlights that there is room for innovation and improvement to extend the reach of APMs and to design APMs in a manner that consistently and equitably reinforces quality and efficiency (see **Sidebar: "Provider-to-provider discount arrangements"**). This chapter reviews the progress of APMs in Massachusetts and elsewhere and comments on opportunities to advance them.

TARGETS FOR APMs IN MASSACHUSETTS

Chapter 224 requires commercial health plans to reduce the use of fee-for-service (FFS) payments to the maximum extent possible[i] and requires all health plans (both commercial and public) to annually report about their use of APMs. The Massachusetts Health Connector, the Group Insurance Commission (GIC), and MassHealth are also required to implement APMs to the maximum extent possible. The law establishes benchmarks for the percentage of MassHealth members to be covered under

i Section 280(c): Private health plans shall to the maximum extent feasible reduce the use of fee-for-service payment mechanisms in order to promote high-quality, efficient care delivery.

Provider-to-provider discount arrangements

APMs such as global payment or shared savings are intended to align financial incentives between payers and risk-bearing providers in a manner that promotes the use of high-value services and providers. Through its notice of material change process, the HPC has become increasingly aware of the existence of provider-to-provider discount arrangements entered into by providers that have risk contracts. Through such discount arrangements, providers under risk typically agree to send their risk patients to a preferred provider, and the preferred provider agrees to pay a discount back to the referring provider for the services rendered to the risk patients. The discount is typically a pre-determined percentage of the preferred provider's negotiated rates.

When the preferred provider treats the referring provider's risk patient, the preferred provider receives payment from the payer pursuant to the preferred provider's own negotiated rates with the payer. Generally, at the end of the year, the provider under risk goes through a settlement process with both the preferred provider and the payer(s) with which they have risk contracts. In the settlement with the preferred provider, the preferred provider transmits to the referring provider the discount amount for the risk patients they treated. While the payers generally are notified of such arrangements, the discount is typically not transmitted back to the payer, reflected in the total medical spending for the risk patients, or accounted for during the global budget settlement process between the provider under risk and the payer. The discount that is transmitted to the referring provider is treated as additional revenue for them.

The HPC has typically observed these types of arrangements in the context of global-budget contracts, where the provider under risk shares the risk with the payer. Thus, where a provider under risk has a discount arrangement in the place, they may receive a sum of money that could either offset any deficit owed to the payer, or supplement any received surplus; the payer will not receive such funds.

The HPC plans to monitor these arrangements in order to better understand and evaluate their potential impact on market functioning, including whether such arrangements lessen the incentives for providers under risk to refer to more efficient providers. Other agencies, such as CHIA, DOI, or the AGO, may also have an interest in better understanding these arrangements.

APMs: 25 percent by July 2013, 50 percent by July 2014, and 80 percent by July 2015. The GIC requires its plans to cover at least 75 percent of GIC members under risk-based contracts by FY2016 through its Integrated Risk-Bearing Organizations (IRBO) model. Further, state-funded insurance programs are required to give preferential contracting to providers in accountable care organizations (ACOs) or patient-centered medical homes (PCMHs), meeting standards set by the Health Policy Commission (HPC).

In its 2014 Cost Trend Report, the HPC noted that the expansion of APM coverage had stalled in the commercial sector, and called for payers and providers to continue to focus on increasing adoption of APMs, and increasing the effectiveness of APMs in promoting high-quality, efficient care, identifying the two specific goals:

- **APMs for HMO patients.** All commercial payers should increase the use of global APMs to pay for at least 60 percent of their HMO-covered lives in 2016.
- **APMs for PPO patients.** Market participants should begin introducing APMs for PPO with the goal of reaching at least one-third of their PPO lives in 2016.

In addition, the HPC encouraged payers and providers to develop and adopt arrangements to include behavioral health spending in APM budgets, and to agree on and institute a common methodology for risk adjustment.

NATIONAL DEVELOPMENTS IN APMs

In early 2015, the U.S. Department of Health and Human Services set the goal of linking 30 percent of FFS Medicare payments to value through APMs by the end of 2016, and tying 50 percent of payments to these models by the end of 2018.[1] Centers for Medicare and Medicaid Services' (CMS) leading ACO programs that meet these payment model requirements are the Medicare Shared Savings Program (MSSP) and the Pioneer ACO Program—both available to providers caring for patients in Original Medicare.

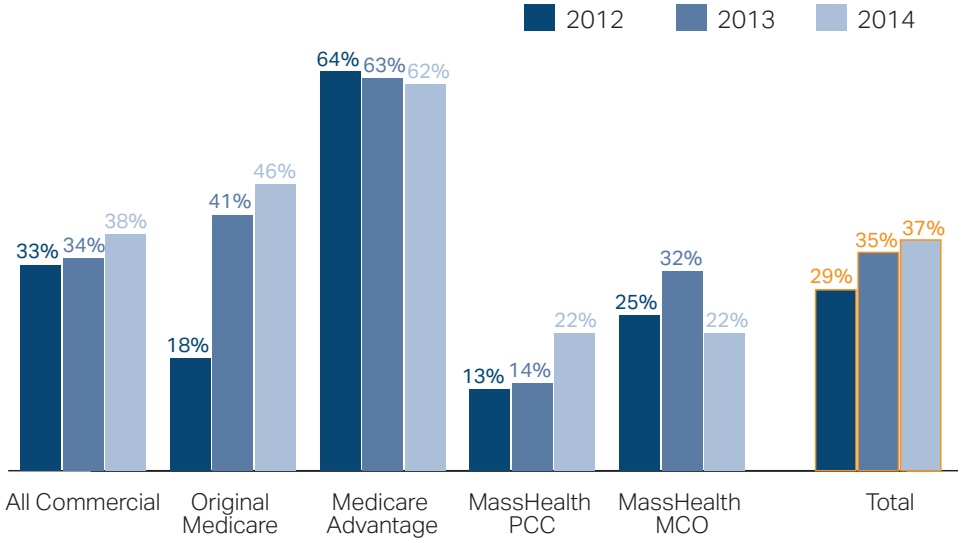
At present, more than 400 physician organizations have joined the MSSP. Among them, 11 MSSP provider organizations are primarily located in Massachusetts, and another five MSSP ACOs are located in neighboring states but operate in Massachusetts. In addition, 32 advanced provider systems joined the Pioneer program at its inception in 2012, with 19 remaining after three years. Three Massachusetts providers (Atrius, Beth Israel Deaconess Care Organization (BIDCO), and Partners) have participated in the program for four years, while two (Mount Auburn Cambridge IPA (MACIPA) and Steward), joined the program in 2012 but dropped out in 2015. Both MACIPA and Steward plan to join CMS' Next Generation model, the newest ACO model from CMS, which offers a higher level of provider risk, new beneficiary engagement possibilities, and the ability to switch to a capitated payment model in later years.[2]

In addition to its ACO programs, Medicare launched two bundled-payment initiatives—one voluntary and one mandatory. The Bundled Payments for Care Improvement Initiative (BCPI) is a voluntary program that began in 2013. Participating providers choose to receive a bundled payment for one or more episodes of care (ranging from congestive heart failure to diabetes to joint replacement) and also choose the extent of the bundle (inpatient only, inpatient plus post-acute care (PAC), PAC only, inpatient plus professional).[3,4] Sixty-two provider groups or organizations in Massachusetts participate in the BPCI, including Signature Healthcare Brockton Hospital, Lawrence General Hospital, and Steward Health System. The Comprehensive Care for Joint Replacement (CCJR) payment model requires hospitals in 75 geographic regions to accept bundled payments for inpatient hip and knee replacements for five years starting January 1, 2016. None of the mandatory service areas are in Massachusetts.

RECENT DEVELOPMENTS IN OTHERS STATES

As ACO contracts have become increasingly prevalent among commercial and Medicare contracts, they are also becoming more common among state Medicaid programs.[5] To date, nine states have launched Medicaid ACO programs.[6] These programs vary in their specific target populations, contracting arrangements, and care-integration plans, such as inclusion of mental and behavioral health under their managed care contracts.[7] Evidence of their impact is limited, but several states, including Minnesota and Colorado, have reported encouraging results thus far.[8,9,10]

Exhibit 11.1: APM coverage by payer type, 2012 – 2014



Source: HPC analysis of Center for Health Information and Analysis Annual Report: Alternative Payment Methods Data Book; Centers for Medicare & Medicaid Services, 2012-2014

LEVELS AND TRENDS OF APMs IN MASSACHUSETTS

In Massachusetts, 37 percent of plan members across all public and private payers were covered by APMs in 2014, essentially unchanged from 35 percent in 2013 (see **Exhibit 11.1**). In the commercial sector, the rate of APM coverage increased from 34 to 38 percent between 2013 and 2014, after increasing from 33 to 34 percent between 2012 and 2013. Virtually all of the commercial and Medicare members covered under APMs were covered by global-payment contracts. MassHealth's 2014 APM approach was bundled payment for primary care, combined with the opportunity to share in savings (optional downside risk) and to earn quality incentive payments.[ii]

Commercial payers

Commercial payers have been very successful in introducing APMs into their HMO contracts. In fact, in 2014, all three major commercial carriers already met the HPC's target: that 60 percent of HMO members receive care via an APM contract by 2016. Blue Cross Blue Shield of Massachusetts' (BCBS) Alternative Quality Contract (AQC), a global-budget contract for HMO patients with significant downside risk, leads the market, with 91 percent of HMO members in an APM (see **Exhibit 11.2**), while Harvard Pilgrim Health Care (HPHC) was the only major payer to substantially improve its APM coverage between 2013 and 2014, due to a focused effort to extend APM coverage within self-insured HMO accounts. The percentage of BCBS' HMO members covered by APMs has been stable at about 90 percent for two years now, suggesting that 90 percent may be the current ceiling on coverage and that the remaining providers may not have scale to take on the AQC.

ii The available data do not indicate either the extent to which other payment methods (limited budget or bundled payments) occurred in conjunction with the global payment, or how the incentives in these contracts reached the individual provider level.

Exhibit 11.2: APM coverage by HMO and PPO, commercial payers, 2014

	HMO members as percent of all members	Percent of HMO members covered by APMs	PPO members as percent of all members	Percent of PPO members covered by APMs	Percent of all members covered by APMs
BCBS	53%	* 91%	47%	0%	48%
HPHC HPI	71%	* 65%	27%	0%	46%
Tufts/ Network	67%	* 60%	33%	11%	43%
Other	40%	33%	47%	2%	15%
Total	**55%**	**68%**	**42%**	**2%**	**38%**

Source: HPC analysis of Center for Health Information and Analysis Annual Report: Alternative Payment Methods Data Book, 2014

* Met HMO coverage goal from 2014 Cost Trends Report

In 2014, APMs were largely confined to HMO-insurance products.[iii] Employing global APMs in preferred provider organization (PPO) products is more complex than in HMOs, as PPOs do not require members to select a primary care physician (PCP). In addition, the majority of PPO accounts are self-insured and thus bear the full cost of the APM. Given that employers often enter into annual contracts with insurance companies, they often resist the initial up-front costs of an APM despite the promise of savings in later years.[iv] Indeed, coverage rates in PPO products were low in 2014: 2 percent, all of which were members of GIC plans.

The three major payers vary in the extent to which their global-budget APMs include some downside risk: BCBS, always; Tufts Health Plan for 85 percent of members; HPHC for 67 percent.[v]

In contrast to the widespread use of global budget contracts in Massachusetts, bundled payments covering episodes of care have not yet taken hold among commercial payers in Massachusetts—despite their potential to strengthen and broaden incentives for efficient care. In pre-filed testimony, HPHC reported that its bundled-payment program for tonsillectomy had led to cost savings in 2015, and they planned to expand the bundled payment program to include additional procedures and partners in 2016. Tufts Health Plan is also exploring bundled payments, but BCBS is currently directing all efforts toward global-budget contracts. Bundled payments may have a positive effect on quality and expenditures by creating the incentive for hospitals and specialists to deliver care efficiently. But bundled payments also redistribute the financial gains from improved efficiency from the primary risk-holder in the global budget contract, typically the PCP, to the hospital or specialist, and thereby reduce the incentives and resources available to the primary care team.

iii As described in the Alternative Payment Methods Supplement of the Center for Health Information and Analysis' 2014 Annual Report on the Performance of the Massachusetts Health Care System, Tufts Health Plan did report the use of global payments for 3 percent of their PPO members in 2013. All of those members were enrolled in a GIC plan.

iv In testimony at the 2015 Cost Trends Hearings, BCBS noted that in order to extend APMs to PPOs, they had to create a product that offered employers savings in the first year.

v HPC analysis of CHIA APM data, supplemental file.

Medicare

As a result of Massachusetts providers' robust participation in Medicare's MSSP and Pioneer ACO programs, the percentage of individuals with Original Medicare (as opposed to individuals enrolled in Medicare Advantage plans) covered by APMs in Massachusetts was 41 percent in 2013 and rose to 46 percent in 2014. The state's level of coverage via Pioneer and MSSP is high relative to the U.S. as a whole, as 16 percent of Original Medicare members nationwide were covered by one of these two payment initiatives. Among Medicare Advantage members, APM coverage was essentially flat: 62 percent were covered under an APM in 2014, compared to 63 percent in 2013.

MassHealth

In 2014, MassHealth launched the Primary Care Payment Reform Initiative (PCPRI), a delivery- and-payment model oriented toward comprehensive, patient-centered care. PCPRI combined a capitated payment for primary care with shared savings based on total cost of care, and places a particular emphasis on behavioral health integration with primary care. As of March 2014, 28 practices were enrolled in PCPRI, with eight opting to include some outpatient behavioral health services in the capitated payment; approximately 22 percent of the PCC population was covered by this initiative. In 2014 and 2015, MassHealth continued this progress by launching an extensive stakeholder engagement process to help develop an ACO payment and support model. In MassHealth's commercial MCOs, APM coverage declined from 32 percent of members in 2013 to 22 percent in 2014. Declines occurred in four of six MCOs, including the three largest (BMC, Neighborhood, and Network Health/Tufts), and were likely related to MCOs expanding their provider networks and entering new geographic areas in response to ACA enrollment increases; new contracts often use fee-for-service payment initially and shift to APMs over time.

EXTENDING APMs

Extending APMs to PPO products and within HMO products

An important step towards extending APMs is to offer the payment model to providers for members enrolled in PPO products and on behalf of self-insured employers. At the HPC's 2015 Cost Trends Hearings, BCBS announced that it had signed global-budget risk contracts for PPO members with four provider systems in the Commonwealth (Lahey Health, Partners Community Healthcare Inc., Steward Healthcare, and MACIPA) to start in 2016; approximately one-third of BCBS' PPO lives will be covered by an APM as a result of these agreements. In developing this arrangement, BCBS and the providers relied upon the shared principles for attributing patients to providers that were developed by a coalition of Massachusetts payers and providers in 2014. Neither HPHC nor Tufts Health Plan have yet committed specifically to using APMs for PPO members. In their testimony for the HPC's annual Cost Trends Hearings, these plans noted that while providers seek to align payment across lines of business, they are often reluctant to assume risk for patients with whom they do not have a formalized PCP relationship. These plans noted other more general challenges to expanding APMs, such as difficulty predicting costs, an issue exacerbated by rising drug spending, and that some providers are not qualified to take on risk due to small patient panels.

GIC's Integrated Risk-bearing Organizations (IRBO) program, which requires GIC-participating carriers to meet targets relative to percentage of GIC members covered under a risk contract, has been an important catalyst in driving PPO-based risk contracting as well. However, in July 2015, HPHC and Tufts Health Plan converted their GIC PPO plans to Point of Service (POS) plans, thereby requiring members to select a PCP, although the benefit design remained akin to a PPO product. As a result, measured levels of APM coverage within PPO will drop in 2015.

Extending APMs in MassHealth

A second important step for Massachusetts to extend the reach and impact of APMs statewide would be for MassHealth to continue increasing the share of its members covered by APMs. Supporting accountable care organizations with appropriate APMs is a top priority for the Executive Office of Human Services, and, in 2015, MassHealth initiated an intensive stakeholder engagement and policy development process with the intention of launching a range of ACO models at scale over the next one to two years. Integration of both behavioral health and long-term services and supports are core components of the proposed ACO models. One component of the process was a series of work groups in 2015 to establish guiding principles and a payment framework to support a MassHealth ACO and thereby to support providers in integrating and coordinating care, enhancing population health, and taking responsibility for the total cost of

MassHealth members' care.[vi] In 2016, MassHealth also plans to propose a five-year 1115 waiver agreement with CMS that would bring in significant federal investment to accelerate and support the adoption of ACOs and real changes in the delivery of care.[vii]

Cultivating APMs

The great progress in implementing APMs across public and private payers in the Commonwealth has resulted in a diverse assortment of payment models, including diverse approaches to measuring and rewarding the quality of care. Further, the data and reporting that comes along with the models is equally varied in quality and timeliness. As a result, provider systems are developing multiple governance structures as well as financial and quality analytic processes. Providers are managing a different set of quality measures, risk adjustment and attribution methodologies, financial benchmarks, and set of reports from each payer with whom they accept a global budget contract. In testimony at the 2015 Cost Trends Hearings, providers emphasized that their contracts' varied approaches to spending and quality have made it challenging to change their care delivery practices in whole, and that financing the necessary infrastructure has been expensive, especially for smaller providers. Ultimately, APMs must be structured in a way that allows providers to succeed, if they are to reach a broader share of the population and influence care delivery in the manner desired.

Aligning APMs across payers

Alignment of the technical aspects of APMs is necessary to enable care-delivery transformation at scale. Promisingly, a coalition of the three major payers and four large providers came together to develop shared principles for attributing PPO patient to providers. The group released its final report, Consensus Guidelines for Commercial Non-HMO Patient Attribution Methodology, in August 2015 and payers have committed to using the guidelines in future contracts. The extent to which the carriers are actually using the Consensus Guidelines is unknown.

Several opportunities exist to increase alignment and to thereby increase the effectiveness of APMs. First, whenever possible and appropriate, MassHealth could make the elements of its ACO consistent with corresponding aspects of commercial and Medicare global-budget models. Such alignment both enables MassHealth to benefit from the experience of more mature APMs and makes participation simpler, and potentially more attractive, for providers.

Second, private payers could work to align other technical aspects of their global-budget contracts—especially, risk-adjustment methods, quality measures, and reports. Many stakeholders, including the HPC, have also called for a statewide standard for risk adjustment to add consistency, transparency, and efficiency. At the 2015 Cost Trends Hearings, the representatives of both HPHC and Tufts Health Plan Health Plan indicated that they believed that the market could agree on a common approach to risk adjustment, as it had for attribution, and that their organizations would participate if a coalition were formed for this purpose.

At the Cost Trends Hearings in 2013, 2014, and 2015, providers have also consistently called for statewide alignment on quality measures, both to simplify reporting and to create clear direction for focusing quality-improvement efforts. The Statewide Quality Advisory Committee (SQAC) is a public-private body, managed by CHIA, with expertise in quality measurement, which could provide guidance toward aligning the quality measures used in global-budget contracts. While such work is outside of the statutory charge of the committee, it is a reasonable extension of the committee's responsibilities to establish a shared set of measures for tiered-product design and public reporting at the plan and provider level.

Improvement in APM design and implementation

In pre-filed testimony for the 2015 Cost Trends Hearing and in other public statements, many providers have highlighted the limitations of the methods used to establish APM budgets and of the data and reporting they currently receive from payers. In particular, the risk-adjustment methods used by the plans in setting budgets are not uniform, and the variation impedes providers' ability to effectively manage patients within budgets. In addition, the methods in wide use do not account for socio-economic disparities, which influence the need for medical care, and do not accurately account for the resources required for pediatric patients. Finally, most APM budgets are based on historical spending and thus perpetuate historical inequities in spending between different provider groups and service categories (e.g., behavioral health and preventive

vi Chapter 224 requires 50 percent of MassHealth members to be covered by APMs by July 2014 and 80 percent by July 2015, but does not require global APMs or otherwise specify the nature of the APMs..

vii Section 1115 waivers give states additional flexibility to design and improve their Medicaid and children's health insurance programs.

services). The HPC plans to convene stakeholders early in 2016 to seek consensus on a common risk-adjustment methodology and an approach that better accounts for social and demographic factors.

A second concern, consistently voices by providers, is that the data they receive for payers is not sufficient to fully support their success in new payment models. Often, providers do not receive information about their own performance on quality, clinical outcomes, and patient experience or any benchmarking information until at last a year after the services are rendered. Financial data are a bit more current; however, providers often do not know how their performance compares to their budget or to relevant trends until well after the performance period. Highlighting the importance of progress in this area, HPHC improved various aspects of its provider reports, as well as its internal infrastructure, in conjunction with its 2015 APM expansion.

A final area for refinement and improvement is the treatment of behavioral health care. When behavioral health is fully incorporated into contracts, providers have the incentive and the mandate to fully integrate behavioral health and medical care and to give both equal attention and resources. With integrated payment, providers benefit financially when the treatment of a behavioral health condition produces cost offset in the use of medical services. BCBS and Tufts Health Plan generally include behavioral health in their APM contracts, but HPHC and many other Massachusetts payers do not.

Payers that not only exclude behavioral health from risk contracts but also subcontract with managed behavioral health organizations to manage behavioral health claims, may create structures and incentives that weaken efforts to foster accountability for total cost of care. Under these arrangements, behavioral health care provided by behavioral health providers is reimbursed by the subcontracted entity, while behavioral health care provided by medical providers (such as PCPs) is reimbursed by the payer. The payer bears no risk for the majority of behavioral health costs, and the subcontracted payer bears no risk for medical costs; neither has reason to encourage providers to coordinate and streamline a patient's care.

At the same time, many PCPs may find it difficult to assume financial accountability for behavioral health care, given their lack of experience with integrated care, the gaps in the delivery system, and the shortcomings of the available data. While federal privacy regulation imposes some limits on the use and distribution of behavioral health data, most notably data on substance use disorder treatment, it does not bar payers from distributing de-identified or aggregate reports to contracted providers.[11] Thus, efforts to develop APMs that include behavioral health are closely tied – and critical to - other efforts to shore up improve the integration of the delivery system for patients with behavioral health needs.

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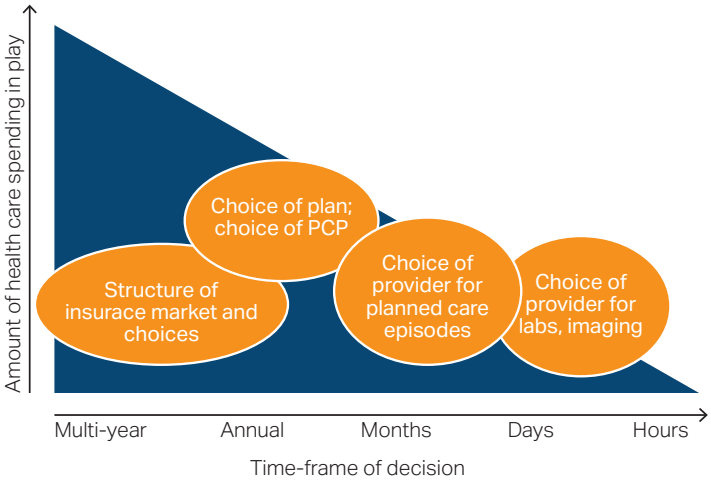
SECTION IV: PROGRESS IN ALIGNING INCENTIVES

Demand-Side Incentives

12

A well-functioning healthcare market should reward providers of care for making cost-effective care decisions, such as using alternative payment methods (APMs) to shift incentives to better align with delivery system goals (see **Chapter 11**: **"Alternative Payment Methods"**). It should also reward *purchasers of care* (including employers, payers, and consumers; the "demand side") for choosing high-value providers and high-value modes of care (see **Chapter 5**: "**Hospital Outpatient"**). Such strategies are complementary and both should be pursued to achieve a well-balanced, high value health care system.

Exhibit 12.1: A framework for demand-side incentives



Different demand-side strategies can be used at different points along the continuum of care (see **Exhibit 12.1**), and have different impacts on healthcare spending. At the left of the diagram, employers have an opportunity to offer employees a menu of plans with incentives to choose lower-cost plans. If employees do respond to such incentives and choose lower-cost plans (or select Primary Care Physicians (PCPs) within lower-cost health systems), they can be rewarded with lower monthly premiums. Once a plan has been chosen (toward the middle of the diagram), when patients face choices of providers for non-emergency procedures, for example, incentives such as reference pricing or tiering can steer patients toward high-value hospitals or provider groups. These choices can result in reduced copays when choosing preferred providers. On the far right of the diagram, though fewer health care dollars are ultimately at play, pointed incentives such as cash-back rebates can help steer employees to low-cost providers of imaging or blood tests, resulting in immediate savings.

In addition to saving money for employees, these incentives can have ripple effects throughout the health care system. When employees have stronger incentives to choose lower-cost plans, high-cost plans are pressured to adopt measures to reduce costs (such as eliminating high-cost providers from networks) to compete for patient volume. When employees choose lower-cost providers, responding to incentives in tiered network products or cash-back programs, they place pressure on high-cost providers to lower their costs to compete for patient volume.

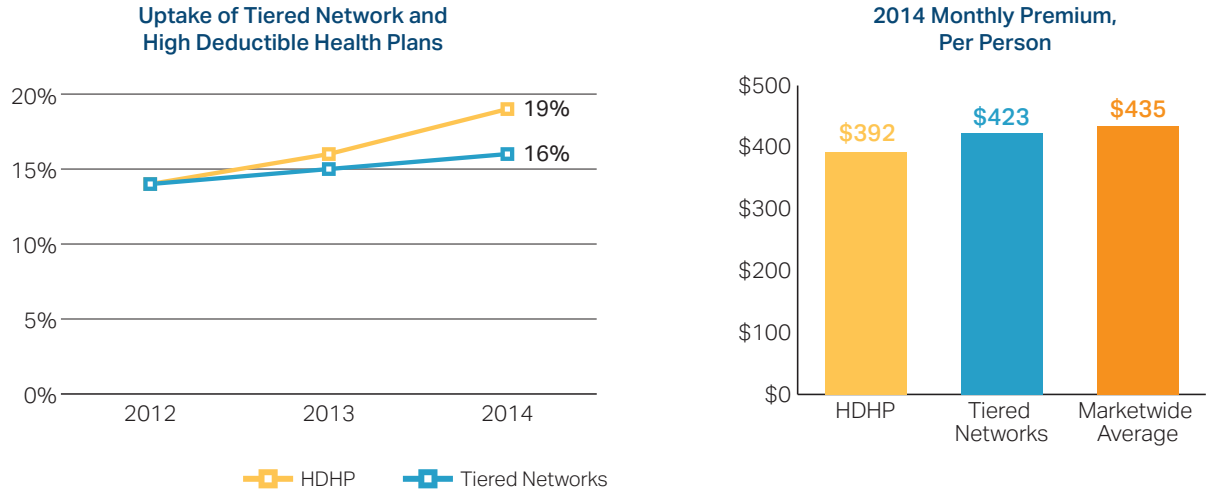
The 2014 Cost Trends Report discussed broadly many of the demand-side strategies that fall at different places along the continuum in **Exhibit 12.1**. In this chapter, the HPC provides an update on two areas of focus for the Commonwealth, tiered network products and price transparency (which supports a host of strategies along the continuum). The HPC is currently undertaking a study of the structure of insurance offerings by employers, public and private exchanges, and the role of brokers. The HPC plans to return to a discussion of these issues at a later date. A preliminary finding is that many employers, especially smaller ones, lack the expertise or resources to offer multiple plan choices to their employees and to provide them with strong incentives to seek high-value plans, though they are supportive of these concepts in principle. While the Massachusetts Health Connector (for smaller firms) and private exchanges embed many of these features, many firms are unaware of these options and face information and complexity hurdles in availing themselves of these options.

TIERED NETWORK PRODUCTS

Tiered network plans seek to direct care to high-value providers through the use of financial incentives. Plans place providers (e.g. hospitals) in different tiers based on cost and quality information and impose higher cost-sharing when enrollees seek care from providers in higher-cost (non-preferred) tiers. A recent study on patients enrolled in tiered Blue Cross Blue Shield (BCBS) products in Massachusetts found that the tiered structure did result in movement away from low-value hospitals (defined by BCBS) in the case of planned admissions. Results implied that if all members were in tiered products, the proportion of planned admissions taking place at low-value hospitals would drop by 7.6 percentage points.[1]

Tiered products have not resulted in an overall net shift of members toward lower-cost providers in Massachusetts over the last few years,[2] though this is not surprising given the limited penetration of these products in the Massachusetts market overall (tiered products made up 16 percent of the commercial market in 2014, up from 14.5 percent in 2013 – see **Exhibit 12.2**). Low growth in take-up of tiered products, particularly in contrast with the higher growth in high-deductible plans, could be due to lesser premium savings in tiered products compared to high deductible plans[i].

Exhibit 12.2: Tiered and high-deductible products in Massachusetts, 2012 – 2014



Note: Premiums include fully insured market only and are net of rebates and scaled to account for partial benefits. Market penetration percentages include both fully and self-insured markets.
Source: Center for Health Information and Analysis, 2015

i The figure of $423 in per member premium payments shown in **Exhibit 12.2** compared to the marketwide average represents a 3% difference, while high-deductible plans were $43 (10%) lower per member per month. When controlling for other factors such as group size and enrollee demographics, however tiered network products were 12% cheaper than non-tiered products (CHIA Tiered product report, January 2016). This suggests that tiered products have thus far enrolled disproportionately higher-risk enrollees.

The issues of limited effectiveness and limited take-up could be mutually reinforcing. If tiered products do not significantly reduce premiums by effectively steering volume to lower-cost providers, they may not be perceived as attractive enough to be offered by employers (and selected by employees) – especially given the downside of limiting employee choice of provider and the complexity of explaining the structure to employees. To increase effectiveness, the Attorney General's Office (AGO) has recommended that plans increase the cost-sharing differentials across tiers.[2] This recommendation is supported by a series of focus groups conducted on behalf of the HPC in 2014 around factors influencing patient choice of providers.[ii] That study suggested that small cost differences would not likely sway patient choices of hospital, and that PCPs' referrals and recommendations weighed heavily in such choices (consistent with prior literature findings).[3] Building on the strength of physician referrals in directing subsequent care, the AGO also recommended introducing a financial incentive at the point where individuals choose a PCP. This strategy could effectively drive patient volume to high-value health systems (as shown earlier in this report, most PCPs are affiliated with health systems) by moving decision-making further upstream (see **Exhibit 12.1**) – when patients may be better able to respond to financial incentives rather than when in the midst of a health issue.

Another strategy that could supplement tiered-network products is offering cash rebates for choosing low-cost providers. While tiered products offer reduced cost-sharing in exchange for choosing low-cost providers, some payers (including Fallon and Harvard Pilgrim Health Care (HPHC)) have begun offering consumers direct cash rebates upon choice of a provider from higher-value tiers. These programs overcome the problem of patients having exceeded their out-of-pocket maximum (after which cost-sharing differentials have no impact). Furthermore, the prospect of receiving a check in the mail may be particularly attractive to some enrollees (versus paying less in cost-sharing). To increase participation, these programs use proactive outreach strategies – for example, contacting patients who have been pre-authorized for an imaging service to inform them of low-cost providers in their area (and facilitating switching a pre-existing appointment) or contacting patients who have recently used a high-cost service vendor about how much they could save by using another provider for a future use of that service.

ii Health Policy Commission, Community Hospital Study (forthcoming), 2016.

PRICE TRANSPARENCY

To the extent that employers and individuals are motivated to seek high-value care through incentives, available price and quality information are helpful. Availability of price and quality information is associated with lower total claims payments for health care services, such as imaging services and clinician office visits and lower costs and use of hospital-based facilities for MRI scans.[4,5] Price transparency has been a focus of Chapter 224 of the Acts of 2012, which required that all health plans and third-party administrators offer a toll-free number and website with accessible price information for enrollees as of October 1, 2014. The law also requires providers to disclose the allowed amount or charge for procedures and services within two business days. Types of procedures highlighted by payers as frequently requested included lab tests and imaging, pregnancy-related procedures, colonoscopies, mammography, and shoulder and knee arthroscopies. These tools were the subject of inquiry in theHPC's 2015 Health Care Cost Trends Hearing. Although all major payers active in Massachusetts cite that they have met the requirements of Chapter 224 in establishing the sites and offering information across a wide spectrum of domains, the use of these sites thus far has been limited to fewer than 50 inquiries per 1,000 members per year for the largest three payers in Massachusetts.[6,iii]

It is unclear whether the low usage rate has been due to poor usability or low consumer awareness of the sites, but the rates are consistent with national rates.[7] In 2015, Health Care for All created a report card on the consumer cost estimation tools built by BCBS, HPHC, and Tufts Health Plan.[8] These tools were graded in terms of effectiveness in assisting with consumer decision-making as well as their general level of accessibility and comprehensiveness. BCBS received a "C-" grade while the other two payers received a "C" grade. Health Care for All reported that price information was generally difficult to find, cost data was not presented in conjunction with easily understandable quality information, and high-value choice options were not highlighted.

Chapter 224 also required providers to make price information available for consumers. A study by the Pioneer Institute involved 22 hospitals and 10 free-standing clinics in Massachusetts that were contacted for cost informa-

iii That is, BCBS, Tufts Health Plan and HPHC. Aetna, an insurer with a relatively small market presence in Massachusetts, reported far more price inquiries per 1,000 members, though it is not entirely clear if those included inquiries made by out-of-state residents.

tion regarding a relatively common procedure: an MRI of the knee without contrast.[9] Investigators found that obtaining price information from clinics was a relatively straightforward process. However, while 21 out of 22 hospitals were able to eventually provide investigators with price information, "persistence and diligence" was often required on behalf of the investigators. Investigators reported confusion from some hospitals as to how to obtain the requested information, with no apparent systems in place to respond to such inquiries. The average time to obtain requested price information was between two to four days.

Overall, demand-side incentives can support supply-side incentives (such as provider payment reform) to help foster an efficient health care delivery system in Massachusetts. These incentives can act across the continuum of the health care systems when engaged patients or enrollees, informed with sufficient cost and quality information, have the ability to choose efficient providers and be rewarded for such choices. Although these options, in themselves, are not sufficient to reform the health care system, they offer promise in supporting supply-side incentives and the HPC encourages continued steps to strengthen them.

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SECTION V: CONCLUSION AND RECOMMENDATIONS

Conclusion and Recommendations

13

The HPC publishes an annual report describing health care cost trends, documenting the health sector's performance relative to the statewide growth benchmark, and identifying opportunities for improvement in cost, quality, and access. In light of the findings presented in this 2015 Cost Trends Report, as well as other analytic and policy work throughout the year, the HPC has developed recommendations for market participants, policy makers, and other government agencies.

DASHBOARD OF KEY HPC METRICS

In keeping with a recommendation from the 2014 Cost Trends Report, the HPC has developed a set of measures to track health system performance (see **Exhibit 13.1**), drawing upon findings for the 2015 Cost Trends Report. This set of key metrics, or "dashboard," is intended to track Massachusetts health system performance in areas identified by the HPC as priorities for ongoing attention and improvement. For the dashboard, the HPC selected measures with a credible, regular, and up-to-date data source to present trend over time in Massachusetts and to compare performance in the Commonwealth to a national benchmark, where available. For some measures, the HPC will also track performance against targets for improvement.

RECOMMENDATIONS

Consistent with past reports, the recommendations are organized into four primary areas of opportunity for improving the health care system in Massachusetts:

1. **Fostering a value-based market** in which providers and payers openly compete to provide services, and in which consumers and employers have appropriate information and incentives to make high-value choices for their coverage and care options
2. **Promoting an efficient, high-quality delivery system** with patients and primary care providers at the center in which providers efficiently deliver coordinated care that integrates behavioral health and physical health and produces better outcomes and improved health status
3. **Advancing alternative payment methods** that support and equitably reward providers for delivering high-quality care while holding them accountable for slowing the rate of health spending across the Commonwealth
4. **Enhancing transparency and data availability** necessary for providers, payers, purchasers, and policy makers to successfully implement reforms and evaluate progress over time.

FOSTERING A VALUE-BASED MARKET

A transparent and competitive health care market that rewards high-value providers is essential for constraining growth in health care costs and meeting the health care cost growth benchmark in the future. As documented in this Report, the majority of care in the Commonwealth is provided by a relatively small number of large provider systems, and both hospitals and physicians have continued to align with large systems. This degree of consolidation in the marketplace can impact health care costs, quality, and access. The HPC finds that price and spending variation among providers has persisted, and the share of patient volume served by high-cost providers continues to be significantly higher than that of lower-cost providers.

In the insurance market, enrollment in high-deductible health plans increased from 14 percent of the market in 2012 to 19 percent in 2014, while enrollment in tiered network plans grew more slowly (from 14 percent to 16 percent). In 2014, Massachusetts payers launched online price information tools, but consumer use of these tools was low.

To advance the goal of a more value-based market in 2016, in which consumers, armed with information on cost and quality, have meaningful options and are rewarded for making high-value coverage and care choices, the HPC recommends:

1. Payers and employers should continue to enhance strategies that enable consumers to make high-value choices, including increasing the transparency of comparative prices and quality. Specifically:

a. Payers should continue to improve value-oriented products such as tiered and limited plan designs that create incentives, such as financial rewards for choosing high-value services and providers, through strategies including:
   i. Using transparent, aligned methods to tier providers.
   ii. Increasing the cost-sharing differentials between preferred and non-preferred tiers to better reflect value-based differences among providers.
   iii. Improving educational and outreach efforts to help employers and employees better understand the products and their benefits and tradeoffs.
   iv. Exploring limited network products that are associated with one or more high performing accountable care organizations (ACOs).

b. Payers should continue to innovate and provide new mechanisms that reward consumers for making high value choices, through strategies including:
   i. Providing cash-back rebates for choosing low-cost providers.
   ii. Offering members incentives at the time of primary care provider (PCP) selection, with the level of incentives tied to differences in the total cost of care associated with this PCP.

c. When feasible, employers should offer employees a choice of plans and use defined-contribution and other strategies to reward employees for choosing lower-cost plans. In particular, employers who offer high-deductible health plans should pair them with health savings accounts (HSAs) or health reimbursement accounts (HRAs) and should also offer a choice of other value-based insurance products in addition to these plans. All such plans should be monitored to ensure that they do not impose an undue and unavoidable cost-sharing burden on members, especially lower income members.

d. Information, coupled with incentives and choice, is an essential element of a well-functioning market for health care. Payers should continue to improve the use and usability of online price and quality information available to members and should link that information with opportunities and incentives to make high-value choices.

2. The Commonwealth should enhance transparency of drug prices and spending, and payers should consider opportunities to maximize value. Given the current national regulatory framework, many aspects of drug spending are outside the direct control of payers and providers in Massachusetts, and change would require Federal action. However, levers for action are available at the state level, some requiring new legislation. In addition, public and commercial payers should consider opportunities to maximize value. Specifically, to address spending growth associated with pharmaceuticals:

a. All payers should pursue the use of value-based benchmarks when negotiating prices and consider opportunities for the use of risk-based contracting with manufacturers.

b. The Legislature should require increased transparency in drug pricing and manufacturer rebates.

c. The Legislature should add pharmaceutical and medical device manufacturers to the list of mandatory market participant witnesses at the HPC's Annual Health Care Cost Trends Hearing.

d. Public and commercial payers and purchasers should consider a range of opportunities for group purchasing and joint negotiation.

e. State and federal lawmakers should advocate for legislation to allow Medicare to negotiate prescription drug prices.

In addition, payers and providers should work to ensure efficient utilization of prescription drugs:

f. Stakeholders should work together to develop and use treatment protocols and guidelines that make appropriate use of lower-cost drugs when available and to achieve consensus on appropriate use when new high cost drugs enter the market.

All such policies should be developed in a manner that ensures patients' access to necessary therapies.

3. The Commonwealth should take action to implement safeguards for consumers and improve market function related to out-of-network billing. Consumers may face high charges from out-of-network hospitals and physicians in certain circumstances, including in emergency situations and when services are received at in-network facilities but provided by out-of-network providers without the consumer's informed agreement. These high out-of-network charges can create financial burdens for consumers and also raise significant challenges to healthy market functioning. Drawing on models from other states (such as New York), the Legislature should require providers to inform consumers whether they are in- or out-of-network before services are delivered. The Legislature should also require that carriers hold their members harmless in cases of out-of-network emergency services and enhance consumer awareness of existing "surprise billing" protections. Finally, the Legislature should establish a maximum reasonable price for such services, to ensure that these protections for consumers do not increase overall spending or have other unintended consequences.

4. The Commonwealth should take action to equalize payments for the same services for similar patients between hospital outpatient departments and physician offices. In some cases, the same service can be provided in different settings of care. In particular, hospital outpatient department rates can be substantially higher than physician office rates for the same service, encouraging providers to provide services in hospital outpatient departments unnecessarily. The following proposals would improve financial incentives to provide care efficiently:

a. **The Legislature should limit the types of provider locations that can bill payers and patients as a hospital outpatient department.** The ability to earn higher payment rates as a hospital outpatient department rather than as a physician practice has incentivized hospitals to acquire physician practices and enable those practices to bill as hospital outpatient departments. These higher payments for services, due to the addition of hospital facility fees, may inappropriately increase total medical spending for payers and patients, as well as cause confusion for patients who may face increased cost-sharing. All payers should monitor such billing practices. Following recent Congressional action limiting eligibility for hospital outpatient department payments in Medicare from providers within 250 yards of a hospital's main campus, the Legislature should similarly limit the definition of those providers eligible for hospital outpatient payments and require all payers to adopt these policies, at a minimum, for both newly licensed hospital outpatient departments and existing sites.

b. **Payers should implement site neutral payments for select services for similar patients.** The Medicare Payment Advisory Commission has recommended that the Medicare program equalize payment rates of hospital outpatient departments with lower physician office rates for evaluation and management visits and a select set of other services. Payers in Massachusetts should identify select appropriate services and implement site neutral payments for these services.

5. The Commonwealth should act to reduce unwarranted variation in provider prices. Extensive variation in prices paid to health care providers for the same sets of services is a persistent issue in the Commonwealth, driving increased health care spending and perpetuating inequities in the distribution of health care resources. However, unwarranted variation in provider prices is not likely to decrease absent direct policy action. To inform the necessary action, the HPC will undertake additional research and analyeses and will engage with stakeholders (including the HPC Advisory Council) to discuss specific, data-driven policy options for consideration by the Legislature, other policy makers, and market participants in the first half of 2016.

CARE DELIVERY

Over its three-year history and in the current report, the HPC's research has highlighted Massachusetts' high levels of spending and high use of hospital and post-acute care. Within the state, the HPC has also noted variation among providers and communities in spending and practice patterns. Moreover, the HPC has identified ongoing opportunities to improve quality and efficiency in the areas of care coordination and clinical integration across settings, identifying and managing high-cost patients, screening and treatment of behavioral health conditions, caring for patients in efficient and community settings, and leveraging technology to support these efforts. The HPC continues to support providers in addressing these opportunities through investment, technical assistance, and certification programs. The increased adoption of effective APMs should further align provider incentives around quality and efficiency in care delivery

To advance the goal of an efficient, high-quality care delivery system in 2016, the HPC recommends:

6. The Commonwealth should continue to focus on enhancing community-based, integrated care and reducing the unnecessary utilization of costly acute settings. As part of this focus, the Commonwealth should develop the necessary strategies and apply the necessary resources to attain the following:

a. **Reductions in all-cause 30-day hospital readmissions:** The Commonwealth should achieve a 20 percent reduction in all-cause, all-payer 30-day hospital readmissions relative to the 2013 level, attaining an all-payer readmission rate below 13 percent by 2019. In particular, action should be focused on patients who frequently utilize hospital services, who represented 59 percent of all readmissions in 2013.

b. **Increased use of the patient-centered medical home model:** In 2015, 25 percent of Massachusetts primary care providers were practicing within patient-centered medical home (PCMH) practices recognized by the National Committee on Quality Assurance (NCQA). A third of all primary care providers should be practicing within NCQA-recognized PCHMs by 2017 and 20 percent of all primary care providers should be practicing within a HPC-certified PCMH PRIME practice (medical homes with integrated behavioral health) by 2017.

7. To improve access to low-cost, high-quality care, particularly for low income and underserved populations, the Massachusetts Legislature should remove scope of practice restrictions for Advanced Practice Registered Nurses (APRNs). The Legislature should consider adopting models used in other states that allow for such providers to practice to the full extent of their license and training.

8. The Commonwealth should be a national leader in the use of enabling technologies to advance care delivery transformation through the expanded adoption of health information exchange, telehealth, and other digital health innovations. Market participants should adopt technology tools that enhance access to care, including behavioral health care; keep more patients in community settings; support real-time information exchange; and enable effective care coordination, care transitions, and other activities of population health management. As part of this focus, the Commonwealth should examine and address policy and payment barriers to increased use of telehealth. Finally, Massachusetts payers, providers, and the health care innovation community should partner together to develop, test, and leverage the technology and service advances pioneered by Massachusetts-based start-up companies and established firms.

ALTERNATIVE PAYMENT METHODS (APMS)

Effective APMs offer incentives that support value-based and patient-centered care. Between 2012 and 2014, the statewide rate of APM coverage increased eight percentage points, but the market should extend APMs to preferred provider organizations (PPO) in order to achieve continued gains in commercial APM coverage. APMs should be made more comprehensive and aligned to attain the desired benefits. In addition, global budgets alone may not be sufficient to alter the incentives facing many hospitals and specialists, sectors which are essential to health system transformation and cost containment.

To advance the goal of expanded adoption of effective APMs in 2016, the HPC recommends:

9. Payers and providers should continue to focus on increasing the adoption of alternative payment methods (APMs) and on increasing the effectiveness of APMs in promoting high quality, efficient care. Market participants should advance the following:

a. **APMs for HMO patients**. All commercial payers should increase the use of APMs with the goal of having 80 percent of the state HMO population in APMs by 2017.

b. **APMs for PPO patients**. Commercial payers should also seek to increase the use of APMs for members enrolled in PPO plans, with the initial goal of having one third of the state PPO population in APMs by 2017.

c. **Bundled payment**. As a complement to global payment APMs, payers and providers should follow the lead of the Centers for Medicare and Medicaid Services (CMS) and implement bundled payments for common and costly episodes of care, such as joint replacement, acute myocardial infarction, cancer treatment, and maternity stays. These bundles should include care provided both within and outside of the hospital in an appropriate clinical window.

d. **Disparities in payment levels**. As part of a strategy to reduce spending, payers should develop plans to

lessen the unwarranted disparity in global budgets paid to different providers by establishing stricter targets for spending growth for highly paid providers or by moving away from historical spending as the basis of global budgets.

e. **Include behavioral health and long-term services and support**. Payers should include behavioral health services in their global budget models, and develop plans for including long-term supports and services in such models where applicable to the patient population.

f. **The Group Insurance Commission (GIC) should make payment reform a core component of its next health plan procurement as it continues to increase the number of GIC members covered by APMs**. The GIC launched the Integrated Risk Bearing Organizations (IRBO) program in its 2013 procurement, requiring plans to meet targets for increasing percentages of GIC members seen by a provider in this ACO-type model. The HPC encourages the GIC to use its upcoming health plan procurement process to closely align with the HPC certification standards and reporting requirements for ACOs.

10. The Commonwealth should develop alternative payment models to catalyze delivery system reform in MassHealth. Developing a comprehensive care delivery and payment reform model that promotes coordination of care, improves population health, and enhances accountability for total cost of care is a top priority for the Executive Office of Health and Human Services. In developing this strategy, MassHealth has initiated an intensive stakeholder engagement and policy development process with the goal of launching a range of ACO models at scale over the next one to two years.

The HPC strongly supports these efforts and believes such reforms, paired with broad federal support, will accelerate overall health care system transformation in Massachusetts. Furthermore, the HPC specifically encourages MassHealth to consider the following design elements:

a. A payment model the supports the integration of behavioral health and long term supports and services with medical care, and incentivizes the development of cross-continuum partnerships, especially with existing high-performing community-based providers;

b. A payment model that moves away from historically-based spending targets that entrench price variation toward an absolute performance benchmark;

c. Mechanisms to increase member engagement (e.g., active member selection, member incentives to maintain care in ACO), as patient engagement is a critical part of achieving better outcomes; and,

d. Alignment, where appropriate, with commerical payers and CMS on technical elements of their payment model such as quality measures, risk adjustment, reporting, and attribution logic.

Finally, the HPC encourages MassHealth to consider prioritizing state and federal funds to support care redesign and capacity building at the safety-net and community-based providers who predominantly serve Medicaid members. Provider investments should be subject to system governance reform, as well as progress on reducing unnecessary utilization of costly acute settings, reallocation of spending within the total cost of care, and optimizing capacity to support the new care delivery models.

11. Payers and providers should seek to align technical aspects of their global budget contracts, including quality measures, risk adjustment methods, and reports to providers. The HPC plans to convene stakeholders early in 2016 to continue this important work.

DATA AND MEASUREMENT FOR TRANSPARENCY AND ACCOUNTABILITY

The importance of transparency and data availability surface throughout the discussions of spending trends, care delivery, APMs, and demand-side incentives. Data are essential to all aspects of system transformation, including setting priorities, harnessing the power of consumer choice, strengthening care delivery, designing and succeeding in new payment models, and monitoring progress.

To advance the goal of greater transparency and data availability in 2016, the HPC recommends:

12. The Commonwealth should develop a coordinated quality strategy that is aligned across public agencies and market participants. Relevant and credible quality measures are essential for many system goals, including value-based product design, payment, and consumer choice. Measures that pertain to behavioral health, long-term services and supports, and measures derived from patient reported outcomes are especially needed. The Legislature should refine the current process for developing the Standard Quality Measure Set (SQMS) to allow for the designation of limited sets of high priority measures for specific uses such as global budgets, consumer transparency,

and tiered or limited network product design, and should better define the role of the Statewide Quality Advisory Committee (SQAC) in providing input and guidance on the Commonwealth's overall strategy for quality measurement, improvement, and alignment.

13. To support transformation and accountability, CHIA should continue to improve and document its data resources and develop key spending measures. Specifically:

a. **Behavioral health data**. CHIA should continue efforts to collect discharge data from freestanding psychiatric and substance use disorder hospitals.

b. **Data on drug rebates**. CHIA should explore options to collect aggregate drug rebate amounts and reflect this information in estimates of total health care expenditures.

c. **Data on "discount arrangements**." As required by statute, CHIA should consider requiring reporting of agreements through which a provider offers to another provider a discount, rebate, or any other type of payment that is in any way related to the provision of health care services.

d. **The All-Payer Claims Database (APCD)**. The APCD is a critical tool for evaluating and monitoring system performance and represents a significant investment on the part of the state's payers. To enhance the return on this asset, by the end of 2016, CHIA should:

   i. Implement a master provider index in connection with the HPC Registration of Provider Organization programs.

   ii. Work with MassHealth to establish and publish a credible method to use APCD data to calculate enrollment, spending, and other essential measures for the MassHealth population and for key segments within it.

   iii. Attribute patients to providers and develop additional measures of spending.

   iv. Seek to make data, including data from public payers, available in a more timely fashion.

e. **Total Medical Expenditures for PPO populations**. CHIA should prioritize the development of a total medical expenditure measure for PPO populations that draws upon the APCD and uses the consensus attribution algorithm to identify accountable provider organizations. As an interim step, CHIA should consider collecting aggregate data on TME for PPO populations directly from payers in a manner that parallels the current HMO reporting.

f. **Provider-level measures of spending growth**. In 2016, CHIA should work with the HPC and other stakeholders to develop and implement measures of spending growth for hospitals and specialist physician groups, adding other provider types as necessary and feasible.

g. **Cross-payer pricing comparisons**. In order to facilitate comparisons of payer performance in the health care market, CHIA should refine its relative price methodology to allow for cross-payer comparison.

In the coming year, the HPC will pursue the activities noted above and work collaboratively with the Baker-Polito Administration, the Legislature, the Massachusetts health care industry, employers, consumers, and other stakeholders to advance the goals of a more affordable, effective, and transparent health care system in Massachusetts.

Dashboard of HPC System Performance Metrics

Exhibit 13.1: Dashboard of HPC system performance metrics

Key Area	Measure	MA Time Trend		Direction of Change	U.S. Comparison (1 = best)	MA relative to U.S.	Target
Benchmark and spending	**1. Growth of THCE per capita (performance assessed relative to 3.6% benchmark)**	2.4% (2012-2013)	4.8% (2013 - 2014)	■	4.2% (2013-2014)	■	<3.6%
	2. Growth in premiums	Family: 1.7% Single: 2.8% (2012-2013)	Family: 1.6% Single: 0.9% (2013-2014)	▲	Family: 3.9% Single: 4.7% (2013-2014)	▲	
	2a. Level of premiums	Family: $17,424 Single: $6,290 (2013)	Family: $17,702 Single: $6,348 (2014)	N/A	Family: $16,655 Single: $5,832 (2014)	■	
	3. Individuals with high out-of-pocket spending relative to income	N/A	11% (2013 and 2014 average)	N/A	MA ranked 2nd out of 51 (US = 15%) (2013 and 2014 average)	▲	
Efficient, high-quality care delivery	**4. Readmission rate (Medicare 65+)**	19.4% (2010) 18.2% (2012)	17.4% (2013)	▲	MA ranked 39th out of 51 (US = 17.0%) (2013)	■	
	4a. Readmission rate (All payer)	15.9% (2011)	15.0% (2013)	▲	N/A	N/A	<13% by 2019
	5. ED utilization (per 1,000 persons)	361 (2010) 357 (2013)	349 (2014)	▲	MA ranked 35th out of 51 (2013)	■	
	5a. Behavioral health ED utilization (per 1,000 persons)	21(2010) 24 (2013)	25 (2014)	■	N/A	N/A	
	6. Percentage of inpatient cases discharged to institutional PAC	20.6% (2013)	20.8% (2014)	●	MA = 20.4% (2012) US = 16.7% (2012)	■	
	7. At-risk adults without a doctor visit	7% (2013)	7% (2014	●	13% (2014)	▲	
	8. Percentage of primary care physicians practicing in certified PCMHs	1,580 20.3% of all PCPs (2014)	2,024 25.3% of all PCPs (2015)	▲	15.2% of all PCPs (2015)	▲	33% by 2017; 20% in Prime practice by 2017

▲ Better performance

● Similar performance

■ Worse performance

Key Area	Measure	MA Time Trend		Direction of Change	U.S. Comparison (1 = best)	MA relative to U.S.	Target
APMs	**9. Percentage of original Medicare members in APMs**	41% (2013)	46% (2014)	▲	16% (2014)	▲	
	10. Percentage of commercial HMO members in APMs	61% (2013)	68% (2014)	▲	N/A	N/A	80% by 2017
	11. Percentage of commercial PPO members in APMs	~1% (2013)	2% (2014)	●	N/A	N/A	33% by 2017
	12. Percentage of MassHealth members in APMs	PCC: 14% (2013) MCO: 32% (2013)	PCC: 22% (2014) MCO: 22% (2014)	●	N/A	N/A	
Value-based markets	**13. Enrollment in tiered network products**	Tiered: 14.5% (2013)	Tiered: 16.0% (2014)	●	N/A	N/A	
	14. Percentage of discharges in top 5 systems	51% (2012) 53% (2013)	56% (2014)	■	N/A	N/A	
	15. Percentage of discharges from hospitals with relative price of 1.0 or above	69% (2010) 72% (2013)	73% (2014)	■	N/A	N/A	

Note: THCE = total health care expenditures; ED = Emergency Department; HMO = health maintenance organization; PPO = preferred provider organization; APM = alternative payment method; PCMH = patient-centered medical home.

Source:

Measure 1-MA: Centers for Health Information and Analysis Annual Report, 2015

Measure 1-US: Centers for Medicare and Medicaid Services National Health Expenditure Data, 2013-2014

Measures 2,2a: HPC analysis of Medical Expenditure Panel Survey data, 2012-2014

Measure 3: Commonwealth Fund Scorecard on State Health System Performance, 2015

Measure 4: Institute of Medicine analysis of CMS Medicare Geographic Variation Data Files, 2015

Measure 4a: Center for Health Information and Analysis Hospital-Wide Adult All-Payer Readmissions in Massachusetts: 2011-2013 (Report)

Measures 5, 5a-MA: HPC analysis of Center for Health Information and Analysis Emergency Department Data Base , 2010-2014

Measures 5-US and MA comparison: Kaiser Family Foundation State Health Facts, accessed 2015

Measure 6-MA: HPC analysis of Center for Health Information and Analysis Hospital Discharge Database, 2013-2014

Measure 6-US and MA comparison: HPC analysis of HCUP Nationwide Inpatient Sample and State Inpatient Database, 2012

Measure 7: Commonwealth Fund Scorecard on State Health System Performance, 2015

Measure 8: HPC analysis of National Commission on Quality Assurance Clinician Directory and of American Association of Medical Colleges State Physician Workforce Database, 2014-2015

Measure 9: HPC analysis of Centers for Medicare and Medicaid Services ACO performance data , 2013-2014

Measure 10,11: HPC analysis of Center for Health Information and Analysis 2015 Annual Report: 2013-2014 Data Book

Measure 12: MassHealth personal communication, 2014 and HPC analysis of Center of Health Information and Analysis 2015 Annual Report: 2013-2014 Data Book

Measure 13: HPC analysis of Center for Health Information and Analysis 2015 Annual Report: 2013-2014 Data Book

Measure 14: HPC analysis of Center for Health Information and Analysis Hospital Discharge Database, 2012-2014

Measure 15: HPC analysis of Center for Health Information and Analysis Relative Price Data Book, 2009-2014

List of Technical Appendices

A: Acute Care Hospitals in Massachusetts by Type of Hospital

B1: Trends in spending and care delivery

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Acknowledgments

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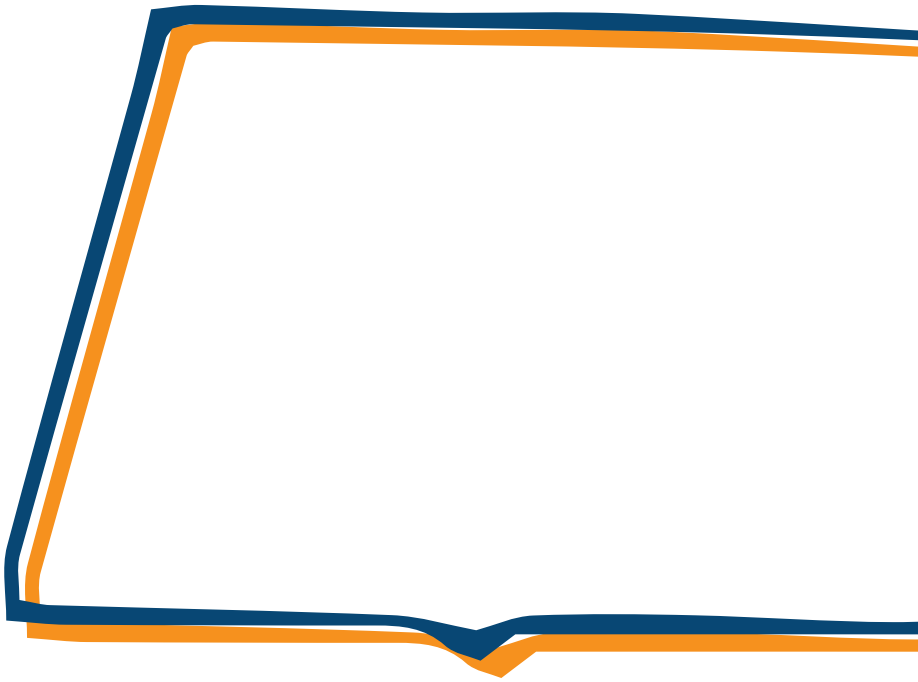

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