AGENDA

- HPC Year in Review and Program Updates
- Select Findings from the 2018 Cost Trends Report
2018 Year in Review: Public Engagement

26 public meetings
(board, committee, advisory council, special events, hearings, listening sessions)

> 50 hours
of public meetings on the HPC YouTube channel

Health Care Cost Growth Benchmark Modification Hearing (March)
Partnering to Address the Social Determinants of Health: What Works? (May)
2018 Cost Trends Hearing (October)

Twitter

612,200 impressions
(potential views by unique Twitter users)

26,227 profile visits

574 mentions

430 unique articles about the HPC’s work

33.3k unique visits to the HPC’s website

450 in-person attendees

>2,000 live stream viewers

6th Annual Health Care Cost Trends Hearing
2018 Year in Review: Market Oversight and Transparency

- **26** total publications
- **$4.8** billion identified as *Opportunities for Savings in Health Care*
- **56** provider organizations registered
- **5** online *DataPoints Briefs*
- **26** providers and payers reviewed for a potential *Performance Improvement Plan*
- **40** exhibits included in the *2017 Annual Cost Trends Report* and Chartpack
- **10** material change notices reviewed
- **329** total pages of *Cost and Market Impact Review* reports
### 2018 Year in Review: Care Delivery and Transformation

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New practices</strong></td>
<td>21 new practices participating in the HPC’s Patient-Centered Medical Home (PCMH) program</td>
</tr>
<tr>
<td><strong>HPC-Certified ACOs</strong></td>
<td>17 HPC-Certified ACOs</td>
</tr>
<tr>
<td><strong>ACO Profiles published</strong></td>
<td>17</td>
</tr>
<tr>
<td><strong>ACO Policy Briefs issued</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Office of Patient Protection (OPP)</strong></td>
<td>280 external appeals processed</td>
</tr>
<tr>
<td><strong>MassChallenge HealthTech</strong></td>
<td>Strategic partner of MassChallenge HealthTech, working to identify promising digital health start-ups</td>
</tr>
<tr>
<td><strong>Funding</strong></td>
<td>$10 million authorized for 15 awards in the SHIFT-Care Challenge</td>
</tr>
<tr>
<td></td>
<td>$17 million distributed among 45 grants to support innovative care delivery models in the CHART and HCII Programs</td>
</tr>
<tr>
<td><strong>External appeals processed</strong></td>
<td>280</td>
</tr>
<tr>
<td><strong>Enrollment waivers processed</strong></td>
<td>826</td>
</tr>
</tbody>
</table>

Strategic partner of MassChallenge HealthTech, working to identify promising digital health start-ups.
## HPC Collaboration with MassChallenge HealthTech (MCHT)

<table>
<thead>
<tr>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 1 Year: ~$170k commitment to support MCHT’s operating costs and provide pilot funds to startups to test innovations in community-based provider systems</td>
</tr>
</tbody>
</table>

### Collaboration Areas

<table>
<thead>
<tr>
<th>Collaboration Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participate as a “Champion” in MCHT’s Core Program</strong>&lt;br&gt;As a Champion, the HPC may engage with one or more startups as a Dedicated Advisor, Product Validator, and/or Clinical Validator.</td>
</tr>
<tr>
<td><strong>Promoting partnerships with community-based providers</strong>&lt;br&gt;The HPC will promote partnerships between digital health startups and community-based providers through a scholarship program and through community-building events.</td>
</tr>
<tr>
<td><strong>Develop marketplace resources</strong>&lt;br&gt;The HPC and MCHT will co-author resource guides to advance the ability of digital health startups to validate their products in a variety of provider settings in the Massachusetts health care system.</td>
</tr>
</tbody>
</table>
MCHT 2019 Cohort: HPC Matches

HPC will be working with three startups in the 2019 cohort as a Dedicated Advisor.

- **Buoy**: A chat bot that has been clinically trained to converse with people to help make decisions about where to seek care (e.g. urgent care, ED, PCP office)
- **Marigold Health**: Mobile app for anonymous text-based group psychotherapy for patients in substance use disorder care, moderated by a peer/clinician
- **DynamiCare Health**: Monitoring and rewarding recovery from substance use disorders
The HPC’s care delivery transformation vision is that providers and payers are patient-centered and accountable for high-value care across a patient’s medical, behavioral, and health-related social needs.

ACO Certification Program Values

- Support the HPC’s care delivery vision through certification standards-setting
- Encourage ACOs to work with non-medical providers in the community as needed to support the full spectrum of patient needs
- Commit to regular assessment of the program to ensure continuous improvement and market value
- Increase public transparency while balancing administrative burden for providers in Massachusetts
Overview of Proposed 2019 ACO Certification Requirements

Background information

Attestation or updates to 2017 standards

Assessment Criteria

- Governance structure
- Patient/consumer representation
- Performance improvement activities
- Population health management programs
- Cross-continuum care

Supplemental questions

Optional new performance-based distinction program
Proposed New Distinction Program for HPC-certified ACOs

A new, voluntary addition to basic ACO Certification, this program would recognize ACOs that have achieved performance improvements in the domains of the Triple Aim — **health outcomes, care, and cost** — plus **health equity**, and make commitments to continue improving.
<table>
<thead>
<tr>
<th>Date Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 15-Sept 14, 2018</td>
<td>HPC drafts initial ACO criteria proposal for stakeholder review</td>
</tr>
<tr>
<td>Sept 17-Oct 5, 2018</td>
<td><strong>Stakeholder engagement phase 1</strong>: One-on-one meetings with ACOs, state agencies, and ACO convening with MHA to gather input</td>
</tr>
<tr>
<td>Oct 5-Oct 29, 2018</td>
<td>HPC revises proposal per phase 1 stakeholder input</td>
</tr>
<tr>
<td>Oct 29-Nov 28, 2018</td>
<td><strong>Stakeholder engagement phase 2</strong>: One-on-one meetings with ACOs, state agencies, and consumer groups to gather additional input</td>
</tr>
<tr>
<td>Nov 28-Dec 17, 2018</td>
<td>HPC releases final proposal for public comment</td>
</tr>
<tr>
<td>Dec 17, 2018-Feb 2019</td>
<td><strong>Stakeholder engagement phase 3</strong>: public comment period</td>
</tr>
<tr>
<td>January 23, 2019</td>
<td>HPC listening session on ACO certification standards</td>
</tr>
<tr>
<td>February, 2019</td>
<td>Final ACO Certification criteria launch for 2019</td>
</tr>
</tbody>
</table>
AGENDA

- HPC Year in Review and Program Updates
- Select Findings from the 2018 Cost Trends Report
# 2018 Cost Trends Report: Presentation Outline

<table>
<thead>
<tr>
<th>Topics</th>
<th>Overview</th>
<th>Utilization</th>
<th>Price</th>
<th>Total Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>▪ Trends in spending, affordability, and care delivery</td>
<td>▪ Trends</td>
<td>▪ Oncology drug prices</td>
<td>▪ Total Medical Expenses by Provider Group</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Low value care</td>
<td>▪ Commercial prices compared to Medicare prices</td>
<td>▪ Provider organization cohort study</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Admissions from the ED</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Overview**

- Trends in spending, affordability, and care delivery

**Utilization**

- Trends
- Low value care
- Admissions from the ED

**Price**

- Oncology drug prices
- Commercial prices compared to Medicare prices

**Total Spending**

- Total Medical Expenses by Provider Group
- Provider organization cohort study
Select Findings from the 2018 Cost Trends Report

<table>
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<th>Total Spending</th>
</tr>
</thead>
</table>

Trends in spending, premiums, affordability, and payment methods
Growth in THCE per capita was 1.6% from 2016-2017, significantly below the health care cost growth benchmark.

Annual growth in total health care expenditures per capita in Massachusetts

<table>
<thead>
<tr>
<th>Year Range</th>
<th>Annual Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>2.4%</td>
</tr>
<tr>
<td>2013-2014</td>
<td>4.2%</td>
</tr>
<tr>
<td>2014-2015</td>
<td>4.8%</td>
</tr>
<tr>
<td>2015-2016</td>
<td>3.0%</td>
</tr>
<tr>
<td>2016-2017</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

Notes: 2016-2017 spending growth is preliminary. Sources: Center for Health Information and Analysis Annual Report, 2018.

Annual growth averaged 3.2% between 2012 and 2017.
In 2017, total health care spending growth in Massachusetts was well below the national rate, continuing a multi year trend.

Annual growth in per-capita health care spending, MA and the U.S., 2000 – 2017

Notes: US data include Massachusetts.
Hospital outpatient and pharmacy spending were the fastest-growing categories in 2016 and 2017

Rates of spending growth in Massachusetts in 2016 and 2017 by category, all payers

<table>
<thead>
<tr>
<th>Category</th>
<th>2015-2016 Growth</th>
<th>2016-2017 Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Inpatient</td>
<td>2.8%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Hospital Outpatient</td>
<td>5.6%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Physicians and other professionals</td>
<td>3.7%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>4.3%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Other Medical</td>
<td>5.3%</td>
<td>-3.1%</td>
</tr>
<tr>
<td>Non-Claims</td>
<td>-2.6%</td>
<td>-2.8%</td>
</tr>
<tr>
<td>Total Expenditures</td>
<td></td>
<td>4.1%</td>
</tr>
</tbody>
</table>

Notes: Total expenditures exclude net cost of private health insurance, VA and Health Safety Net. Pharmacy spending is net of rebates. Other medical category includes long-term care, dental and home health and community health. Non-claims spending represents capitation-based payments.

Source: Payer reported TME data to CHIA and other public sources; appears in Center for Health Information and Analysis Annual Report, 2018
Insurance premiums for large Massachusetts employers are 10\textsuperscript{th} highest in the U.S. (down from 2\textsuperscript{nd} highest in 2013), though premiums for small employers have risen recently.

Annual premiums for single coverage in the employer market and average annual unsubsidized benchmark premium for a 40-year-old in the ACA Exchanges, MA and the U.S., 2013-2018

Notes: US data include Massachusetts. Employer premiums are based on the average premium according to a large sample of employers within each state. Small employers are those with less than 50 employees; large employers are those with 50 or more employees. Exchange data represent the weighted average annual premium for the second-lowest silver (Benchmark) plan based on county level data in each state. These plans have an actuarial value of 70%, compared to 85%-90% for a typical employer plan, and are thus not directly comparable to the employer plans without adjustment.

Characteristics of the Massachusetts small group insurance market: limited plan choice, rising deductibles, growing administrative costs, and declining enrollment

Notes: Small, mid-size, large and jumbo firms are defined as those with 1-50 employees, 51-100 employees, 101-499 employees, and 500+ employees, respectively. High deductible health plans (HDHPs) are defined as those with an individual deductible greater than or equal to $1,300 for 2015-2017 (for the most preferred network or tier, if applicable). Premiums are pre Medical Loss Ratio rebates adjustment, as those are a component of administrative costs. Administrative costs for individual purchasers and small group are before 3R transfers. 3R transfers do not apply to larger groups.

Sources: Agency for Healthcare Research and Quality Medical Expenditure Survey (insurance offer rates 2015 - 2017); Center for Health Information and Analysis Coverage and Costs Databook 2018
Commercially insured residents experienced a sharp increase in out-of-pocket spending between 2015 and 2017.

Out-of-pocket spending per year for enrollees with commercial insurance, 2014, 2015 and 2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Out-of-pocket Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>$1,675</td>
</tr>
<tr>
<td>2015</td>
<td>$1,733</td>
</tr>
<tr>
<td>2017</td>
<td>$2,131</td>
</tr>
</tbody>
</table>

Notes: Out-of-pocket spending is defined as the amount of health care costs a respondent paid in the past 12 months, that was not covered by any insurance or special assistance they may have. Averages shown are conditional on having non-zero out of pocket spending to maintain data consistency across years of survey data.

Sources: HPC analysis of Massachusetts Health Interview Survey, 2014-2017
Select Findings from the 2018 Cost Trends Report

Topics

Utilization

Overview

Price

Total Spending

Trends

Low value care

Admissions from the ED
Overall Massachusetts inpatient hospital use is unchanged since 2014 and continues to exceed the U.S. average

Inpatient hospital discharges per 1,000 residents, Massachusetts and the U.S., 2001-2017

Notes: US data include Massachusetts. Massachusetts’ 2017 data is based on HPC’s analysis of Center for Health Information and Analysis discharge data.

Sources: Kaiser Family Foundation analysis of American Hospital Association data (U.S., 2001-2016), HPC analysis of Center for Health Information and Analysis Hospital Inpatient Database (MA 2017)
Inpatient hospital use has declined 8% among commercially-insured residents since 2014.

Inpatient hospital discharges per 1,000 enrollees by payer, 2014 - 2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Medicare</th>
<th>Medicaid</th>
<th>Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>59.4</td>
<td>116.6</td>
<td>295.3</td>
</tr>
<tr>
<td>2015</td>
<td>57.7</td>
<td>122.0</td>
<td>301.9</td>
</tr>
<tr>
<td>2016</td>
<td>55.6</td>
<td>130.9</td>
<td>294.3</td>
</tr>
<tr>
<td>2017</td>
<td>54.7</td>
<td>132.9</td>
<td>296.4</td>
</tr>
</tbody>
</table>

Notes: Out of state residents are excluded from the analysis.
After the formation of Beth Israel Lahey Health, the top five health systems will account for 70% of all commercial inpatient stays statewide, continuing a multi-year trend of increasing concentration.

Share of commercial inpatient discharges in the five largest hospital systems in each year, 2011 - 2017

Notes: Percentages represent each system's share of commercial inpatient hospital discharges provided in Massachusetts for general acute care services. Discharges for normal newborns, non-acute services, and out-of-state patients are excluded. Sources: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database (2011-2017)
Select Findings from the 2018 Cost Trends Report

Topics

- Overview
- Utilization
- Price
- Total Spending

- Trends
- Low value care
- Admissions from the ED
Low Value Care (LVC) in the Commonwealth: Background

**Background:** Choosing Wisely, an initiative of the American Board of Internal Medicine (ABIM) Foundation, convened specialist organizations in 2012 to select procedures in their fields that had little to no value to patients.

**Aim:**
- Identify instances of provision of certain low-value care services in the Massachusetts APCD
- Quantify the extent of these services, overall and by provider group

<table>
<thead>
<tr>
<th>Unnecessary screening tests</th>
<th>Unnecessary Imaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin D deficiency screening</td>
<td>Head imaging for uncomplicated headache</td>
</tr>
<tr>
<td>Homocysteine screening</td>
<td>Back imaging for patients with non-specific low back pain</td>
</tr>
<tr>
<td>Carotid artery disease screening for those at low-risk</td>
<td>Head imaging in the evaluation of syncope</td>
</tr>
<tr>
<td>Pap smears for women under 21</td>
<td>Electroencephalogram (EEG) for uncomplicated headache</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unnecessary pre-operative testing</th>
<th>Unnecessary Imaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac stress test before low-risk, non-cardiac surgery</td>
<td>Imaging for diagnosis of plantar fasciitis/heel pain</td>
</tr>
<tr>
<td>Pulmonary function test (PFT) for low and intermediate risk surgery</td>
<td>Neuroimaging in children with simple febrile seizure</td>
</tr>
<tr>
<td></td>
<td>Sinus CT for simple sinusitis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unnecessary procedures</th>
<th>Unnecessary Imaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinal injections for low-back pain</td>
<td>Abdominal CT with and without contrast</td>
</tr>
<tr>
<td>Arthroscopic surgery for knee osteoarthritis</td>
<td>Thorax CT with and without contrast</td>
</tr>
<tr>
<td></td>
<td><strong>Inappropriate prescribing</strong></td>
</tr>
<tr>
<td>IVC Filters</td>
<td>Inappropriate antibiotics for sinusitis, pharyngitis, supplicative otitis media, and bronchitis</td>
</tr>
</tbody>
</table>

Low Value Care: Key Findings

Among the three major commercial health plans in the Commonwealth:

- **485,377** of 2.36 million members (20.5%) received at least one low value care service in a 2-year time period
- All 19 low value care procedures accounted for **$80.0 million ($12.2 million out of pocket)** in health care spending in the 2 year period between 2013-2015*

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Total LVC encounters for 19 measures, commercial APCD 2013-15

- 83% screenings
- 4% imaging
- 2% preop
- 11% procedures

Total LVC spending for 19 measures, commercial APCD 2013-15

- 43% procedures
- 33% screenings
- 13% imaging
- 11% preop

---

*n=626,015 encounters

Notes: This timeframe was selected because much of the literature is based on ICD-9 diagnoses and several measures required a "look-back" period. *For thorax and abdomen CT with and without contrast, only the marginal cost of the procedure was counted that was in excess of either with or without contrast.

Sources: HPC analysis of Massachusetts All-Payer Claims Database, 2013-2015
Variation in rates of low value care by provider organization are driven primarily by low value screening

- 1.6 million members were attributed to one of the top 14 largest provider organizations based on their primary care provider.
- Members experiencing at least one low value care service by attributed provider organization varied from 15.5% (Atrius) to 32.7% (Lahey).
- If low value screening is excluded, member rates of receiving low value care ranged from 2.2% (BMC) to 3.7% (Southcoast).

Attributed members with at least one low value care service by provider organization

<table>
<thead>
<tr>
<th>Provider Organization</th>
<th>At least one LVC service</th>
<th>LVC service not screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lahey</td>
<td>30.1%</td>
<td>2.6%</td>
</tr>
<tr>
<td>BIDCO</td>
<td>26.0%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Southcoast</td>
<td>23.6%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Partners</td>
<td>22.6%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Steward</td>
<td>21.0%</td>
<td>2.9%</td>
</tr>
<tr>
<td>UMass</td>
<td>21.0%</td>
<td>2.8%</td>
</tr>
<tr>
<td>CMIPA</td>
<td>20.9%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Average</td>
<td>20.6%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Wellforce</td>
<td>19.8%</td>
<td>2.7%</td>
</tr>
<tr>
<td>MACIPA</td>
<td>19.1%</td>
<td>2.4%</td>
</tr>
<tr>
<td>South Shore</td>
<td>18.6%</td>
<td>2.8%</td>
</tr>
<tr>
<td>BMC</td>
<td>16.5%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Reliant</td>
<td>15.4%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Baystate</td>
<td>14.3%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Atrius</td>
<td>13.1%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Notes: Analysis uses HPC provider attribution methodology to assign patients to a provider organization. A total of 1.6 million members were attributed to 1 of the 14 top provider organizations. See CTR 2017 for more information on this methodology.
Sources: HPC analysis of Massachusetts All-Payer Claims Database, 2013-2015.
Select Findings from the 2018 Cost Trends Report

Topics

Overview

Utilization

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Trends

Low value care

Admissions from the ED
Hospital Admissions from the Emergency Department (ED): Background

- ED visits are the main gateway to an inpatient admission, where the decision to admit a patient is made by an ED’s attending physicians and other personnel and can be influenced by social and administrative as well as clinical factors. Nationally, ~50% of inpatient stays originate in the ED.

- Research shows that there is significant variation by hospital and by condition in admission rates. This literature, recent controversy (see notes), as well as discussions with stakeholders indicate that this variation may be a source of potentially avoidable health care costs.

- The cost difference between an average ED visit and an inpatient admission is significant, typically a factor of 10 or more (~$10,000-20,000 vs ~$1,000-$1,500).

By exploring inpatient admissions from the ED among Massachusetts hospitals, the HPC aims to identify variation in admission by hospital, hospital type, and condition in order to understand if there is the potential for reducing unnecessary inpatient stays.

Notes: Beginning In 2011, Health Management Associates, Inc. of Naples, FL (“HMA”) was accused of using admissions quotas (15-20% overall; 50% for Medicare patients) at the hospitals they managed in order to boost their profitability. This led to a class-action suit on behalf of stock holders, a 60 Minutes expose, as well as a DOJ investigation and eventual criminal charges. In September 2018, HMA’s parent organization settled with the DOJ for more $260 million. The investigation also found that HMA had paid physicians various forms of kickbacks in exchange for medical referrals.
Whether hospitals admit ED patients for inpatient stays varies widely by medical condition

Distribution of ED admission rates by hospital for selected conditions, 2016

- Percentage point (p.p.) difference between 75th and 25th percentile (Interquartile range)

Notes: All admission rates are adjusted for patient characteristics (age, gender, race, payer, income, and drive time to nearest ED). Whiskers in the box plot are defined as the highest observed value that is within the 75th percentile plus 1.5 times the interquartile range on the upper end and similar for the lower end. Dots represent outliers whose values fall outside of the whiskers. Admission rates include transfers to other hospitals and observation stays greater than 48 hours.

Sources: HPC analysis of Center for Health Information and Analysis discharge data (HIDD, EDD, OOD, 2016)
Hospital Admissions from the ED: Key Findings

- In 2016, **23% of all medical ED visits** in Massachusetts resulted in either a transfer, long observation stay, or inpatient admission.

- Admission rates by hospital varied considerably - from **12% to 30%**.

- Within certain clinical groupings, such as septicemia, there was little variation in whether a patient would be admitted.

- Other conditions, such as **chest pain and Chronic Obstructive Pulmonary Disease (COPD)**, had significant variation indicating that there may be more discretion in admitting practices or other unobserved factors.

- Hospitals with high admission rates for some conditions tended to have **high rates for other conditions**.

- Hospitals with low admission rates **did not** tend to have more frequent revisit rates among those patients.
Select Findings from the 2018 Cost Trends Report

Topics

Overview
Utilization

Price

Total Spending

Oncology drug prices
Commercial compared to Medicare
Oncology Drug Prices: Background

Oncology Drug Costs

- Oncology drugs represent the highest drug expenditure by therapeutic class in both Massachusetts and the U.S.
  - $700 million in Massachusetts in 2014, up 12% from 2013
- Spending is expected to increase as hundreds of late phase oncology therapies are currently in the global pipeline

Injection Chemotherapy Drug Pricing

- Chemotherapy drugs are typically administered by injection and thus, are typically covered under a patient’s *medical benefit*, rather than the *pharmacy benefit*
- The provider purchases a stock of the drug from the manufacturer or wholesaler and administers the drug to the patient in a hospital or physician office. The payer reimburses the provider for both the acquisition and administration of the drug.
  - Prices are negotiated between the provider and the payer
The HPC examined variation in prices and utilization of injectable chemotherapy drugs.

The HPC analyzed hospital drug prices and utilization for the highest volume injectable chemotherapy drugs in 2016, defined as drugs for which there were more than 10 claims in at least 10 hospitals in 2016, among two of the state’s largest commercial payers, Blue Cross Blue Shield of Massachusetts and Tufts Health Plan.

- Harvard Pilgrim Health Care was excluded due to data anomalies.
- This definition resulted in a set of 15 injectable chemotherapy drugs.
Prices vary substantially for the most common chemotherapy drugs, with volume concentrated in the highest priced hospitals

Variation by hospital in drug unit prices and volume for commonly used chemotherapy drugs, 2016

Notes: Data include Blue Cross Blue Shield of Massachusetts and Tufts Health Plan claims. Sample includes all injectable chemotherapy drugs for which there were more than 10 claims in at least 10 hospitals in 2016. Each bubble represents one hospital in Massachusetts. The area of each bubble is scaled by the volume in total number of units administered by each hospital. Prices represent volume-weighted averages of claims. Claims from Harvard Pilgrim Health Care were excluded due to coding anomalies.

Sources: HPC analysis of Massachusetts All-Payer Claims Database, 2016
Oncology Drug Prices: Key Findings

- For 14 of the 15 drugs examined, the price per unit at the highest-priced hospital was more than **double the price** per unit at the lowest-priced hospital.

- Volume was skewed towards the highest priced hospitals:
  - 40% of units administered were priced more than 50% above the median price per drug.
  - The two hospitals that billed the largest volume of these drugs consistently received the highest prices. For the 15 drugs examined, these two hospitals billed 55% of total units and 54% of total claims.
  - On average, these two hospitals had prices per unit that were **71% and 92% higher** than the median drug price, respectively.
Select Findings from the 2018 Cost Trends Report

Topics

Overview  Utilization  Price  Total Spending

Oncology drug prices  Commercial compared to Medicare
Commercial Prices: Background and Approach

- **Background:** Medicare prices serve as an important anchor in price comparisons, negotiations and in some cases, out of network prices. Commercial prices relative to Medicare prices facilitate comparisons with the rest of the US. Commercial price **growth** is a key factor in premium growth and meeting the state’s benchmark.

- **Aim:** Understand differences in commercial prices relative to Medicare prices in the Commonwealth, both at a point in time, and trends over time.

- **Approach:** Compare prices for common services in the Massachusetts APCD (2014-2016 data) to Medicare payments for the same services.

- **Data:** 2014-2016 APCD data from Blue Cross, Tufts, and Harvard Pilgrim compared to Medicare administered prices. Data were adjusted for outlier payments and outlier claims or those with invalid prices were excluded.

By comparing commercial prices to Medicare using the APCD, the HPC aims to quantify the sometimes significant differences in payment for comparable services. By identifying commercial price growth over time, the HPC aims to highlight the impact of price growth on total spending.
MA has much higher utilization of teaching hospitals, contributing to average Medicare hospital prices that are among the highest in the country.

- 42% of Medicare discharges in Massachusetts were in major teaching hospitals in 2016.
- 18% of Medicare discharges in the U.S. were in major teaching hospitals in 2016.

- Massachusetts has the 6th highest average Medicare inpatient prices of all states, 21% above the U.S. average.
- Massachusetts has the 4th highest average Medicare outpatient prices, 12% above the U.S. average.
Inpatient prices: Average commercial prices for inpatient care are substantially higher than Medicare and vary more

Distribution of average hospital facility payments per discharge, commercial and Medicare, 2016

Notes: Analysis includes facility payments only, excluding professional services. Analysis excludes claims with invalid payment codes and excludes outlier claims at each hospital. Excludes some maternity claims for which discharge of mother and newborn cannot be distinguished. Commercial average payment per discharge is adjusted for case weight across hospitals; Medicare averages are calculated according to Medicare payment rules, including DSH and teaching hospital adjustments, and assume the same acuity and patient distribution as commercial discharges. Excludes hospitals not paid under Medicare’s Inpatient Prospective Payment System, including Critical Access Hospitals and certain specialty hospitals.

Sources: HPC analysis of Massachusetts All-Payer Claims Database, 2016; Medicare Impact File 2016 and FY 2016 Final Rules Tables, Table 1A-1E.
Although commercial inpatient utilization has declined, inpatient spending has continued to increase, driven by increasing prices and average acuity.

Change in average commercial inpatient prices, utilization, acuity, and spending, 2014-2016

- Inpatient spending: +5.3%
- Inpatient price: +5.2%
- Average acuity: +4.2%
- Commercial discharges per 1000 members: -6.6%

General inflation over this period was only 1%

Notes: Price analysis includes facility portion only, adjusted for changes in acuity and provider mix over time, and excludes claims with invalid payment codes, outlier claims at each hospital, and some maternity claims for which discharge of mother and newborn cannot be distinguished. Commercial TME trend represents facility payments to the three largest commercial payers in MA, acuity trend was calculated for all commercial discharges using Medicare DRG case weights, and discharge trend is per 1000 commercial members for all commercial payers.

Sources: HPC analysis of All-Payer Claims Database, 2016; CHIA hospital discharge data sets for 2014-2016; CHIA Total Medical Expense files.
**Commercial Prices: Key Findings**

- In 2016, Massachusetts commercial prices were far above Medicare prices for comparable services across a variety of service lines and settings
  - Commercial price for inpatient care was **57% higher** than Medicare
  - Commercial price for a hip or knee replacement was **52% higher** than Medicare
  - Commercial price for a routine office visit was **77% higher** than Medicare
  - Commercial price for a brain MRI was **129% higher** than Medicare
- Variation in commercial prices across providers is substantially greater than variation in Medicare prices for comparable services
- Between 2014 and 2016, Massachusetts commercial prices for inpatient care grew **5.2%**. This commercial price growth outpaced:
  - General inflation (1%)
  - Medicare price growth (3.3%)
- During the same time period, the average payment for an Emergency Department (ED) visit **increased 12%**
- Commercial price increases are a key driver in overall health care spending, preventing the Commonwealth from realizing net savings as a result of declining inpatient utilization
Select Findings from the 2018 Cost Trends Report

Topics
- Overview
- Utilization
- Price

Total Spending

TME by Provider Group
Provider organization cohort study
Annual per member total medical expenses (TME) varies more than $2k by attributed primary care provider group, and is diverging over time.

Annual total spending per attributed member insured with either BCBS, THP, or HPHC

Notes: TME = total medical expenses; PCP = primary care provider. For members insured with either BlueCrossBlueShield of Massachusetts, Tufts Health Plan, or Harvard Pilgrim Health Plan, analysis includes 10 largest PCP groups as identified by the Center for Health Information and Analysis in terms of member months: Partners Community Physicians Organization (Partners); New England Quality Care Alliance (NEQCA), a corporate affiliate of Wellforce; Beth Israel Deaconess Care Organization (BIDCO); Steward Health Care Network (Steward); Atrius Health (Atrius); Lahey Clinical Performance Network (Lahey); Mount Auburn Cambridge Independent Physician Association (MACIPA); UMass Memorial Medical Group (UMass Memorial); Boston Medical Center Management Services (BMC); Baystate Health Partners (Baystate).

Sources: HPC analysis of Center for Health Information and Analysis 2016, 2017, and 2018 Annual Report TME Databook
Unadjusted TME grew 10% between 2015 and 2017 yet health-status adjusted TME grew just 0.5%; risk scores grew 9.5%

Total growth in TME from 2015 to 2017 per attributed commercial member with BCBS, THP, or HPHC

Notes: Analysis includes the ten largest PCP groups and three large payers as identified by CHIA in terms of member months and noted on the previous slide. Health-status adjusted TME uses risk scores as reported by the payers for each provider group as described in previous HPC reports.

Sources: HPC analysis of Center for Health Information and Analysis 2018 Annual Report TME Databook
Select Findings from the 2018 Cost Trends Report

Topics

Overview | Utilization | Price | Total Spending

TME by Provider Group | Provider organization cohort study
In the 2017 Cost Trends Report, the HPC attributed 1.4 million patients in the Massachusetts APCD to provider organizations in order to compare spending and utilization across organizations.

- Members with PCPs in AMC-anchored organizations tended to have higher spending than those with PCPs in physician-led groups.
  - This finding is consistent with a growing body of research finding better performance of ACOs that do not include hospitals\(^1\).
  - *Hospital outpatient* spending accounted for most of the variation.

Provider Organization Cohort Study: Approach

- **Aim**: Develop further understanding of why spending differs

- **Approach**: Identify *clinically similar* groups of patients (‘cohorts’) to better isolate the impact of provider organizations’ practice and pricing patterns
  - Decompose spending difference across organizations into **price**, **site of service**, and **utilization**
  - Compare quality of care among settings

- **Data**: 2015 APCD including commercially-insured members of Blue Cross Blue Shield, Tufts Health Plan, and Harvard Pilgrim Health Care attributed to provider organizations
Constructing clinically similar cohorts with more comparable patients between provider groups nonetheless shows significant spending differences

**Cohort study**

**Characteristics of patients attributed to physician-led groups and AMC-led groups**

<table>
<thead>
<tr>
<th></th>
<th>Members (N)</th>
<th>Risk Score</th>
<th>Average Age</th>
<th>% Female</th>
<th>% HMO/POS</th>
<th>Total Spend</th>
<th>% Difference in Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMC-anchored</td>
<td>488,662</td>
<td>0.90</td>
<td>44.1</td>
<td>51.1%</td>
<td>65.8%</td>
<td>$4,398</td>
<td>23.3%</td>
</tr>
<tr>
<td>Physician-led</td>
<td>170,406</td>
<td>0.85</td>
<td>42.7</td>
<td>52.5%</td>
<td>70.6%</td>
<td>$3,566</td>
<td></td>
</tr>
<tr>
<td><strong>Healthy Cohort</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMC-anchored</td>
<td>368,104</td>
<td>0.59</td>
<td>41.4</td>
<td>52.0%</td>
<td>67.1%</td>
<td>$2,659</td>
<td>25.6%</td>
</tr>
<tr>
<td>Physician-led</td>
<td>131,994</td>
<td>0.57</td>
<td>40.1</td>
<td>53.4%</td>
<td>71.6%</td>
<td>$2,118</td>
<td></td>
</tr>
<tr>
<td><strong>Cardio Metabolic Cohort</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMC-anchored</td>
<td>120,558</td>
<td>1.81</td>
<td>52.2</td>
<td>48.5%</td>
<td>61.7%</td>
<td>$9,706</td>
<td>13.7%</td>
</tr>
<tr>
<td>Physician-led</td>
<td>38,412</td>
<td>1.80</td>
<td>51.8</td>
<td>49.2%</td>
<td>67.3%</td>
<td>$8,540</td>
<td></td>
</tr>
<tr>
<td><strong>Diabetes Cohort</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMC-anchored</td>
<td>7,633</td>
<td>1.35</td>
<td>51.7</td>
<td>41.6%</td>
<td>62.5%</td>
<td>$7,926</td>
<td>19.3%</td>
</tr>
<tr>
<td>Physician-led</td>
<td>2,770</td>
<td>1.35</td>
<td>51.2</td>
<td>42.3%</td>
<td>66.6%</td>
<td>$6,642</td>
<td></td>
</tr>
</tbody>
</table>

Notes: HMO is health maintenance organization. POS is point of service plan. AMC-anchored includes BIDCO, Partners, UMass, Wellforce; Physician-led includes Atrius, CMIPA, and Reliant. BMC was not included in the AMC category due to data abnormalities and its role as a high-public-payer hospital. Individuals included in the study population were able to be attributed to a provider organization, had at least 1 year of continuous enrollment, an ACG risk score <5, and ages 18+. Individuals were excluded from study if sex was undetermined based on the member eligibility file. Percent difference is the percentage by which spending for patients attributed to AMC-anchored groups exceeds that of patients attributed to physician-led groups.

Sources: HPC analysis of Massachusetts All-Payer Claims Database, 2015
Spending is higher in AMC-anchored provider organizations compared to those in physician-led organizations for all cohorts

*Per member per year (PMPY) risk-adjusted overall spending, 2015*

Notes: These spending totals are risk-adjusted using the ACG risk score. Sources: HPC analysis of Massachusetts All-Payer Claims Database, 2015
Hospital outpatient spending is the largest driver of spending differences

Per member per year (PMPY) spending by category, 2015

Notes: Some minor categories of spending included in earlier totals, such as post-acute and long-term care, are omitted from this figure.

Sources: HPC analysis of Massachusetts All-Payer Claims Database, 2015
Common ambulatory services are much more likely to be provided in hospital outpatient departments in AMC-anchored groups

Diabetes Cohort: Percentage of services delivered in a hospital outpatient department (HOPD) setting

Notes: Figure is limited to results for the Diabetes Cohort, which follows aforementioned inclusion criteria, and includes only those individuals with diabetes, and no other chronic disease indicators. All x-axis categories reflect a single CPT code: 99213, 80061, 83036, 97710, 45378, 43239, 73721, 82043, respectively.

Sources: HPC analysis of Massachusetts All-Payer Claims Database, 2015
Utilization is generally higher in AMC-anchored organizations, with the exception of PCP visits and preventive visits

Comparison of AMC-anchored utilization with physician-led utilization by cohort

<table>
<thead>
<tr>
<th>Health Condition</th>
<th>AMC-anchored Utilization</th>
<th>Physician-led Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Inpatient Stays</td>
<td>24%</td>
<td>-8%</td>
</tr>
<tr>
<td>ED Visits</td>
<td>30%</td>
<td>24%</td>
</tr>
<tr>
<td>Potentially Avoidable ED</td>
<td>41%</td>
<td>39%</td>
</tr>
<tr>
<td>Preventive Visits</td>
<td>15%</td>
<td>-2%</td>
</tr>
<tr>
<td>PCP Visits</td>
<td>-26%</td>
<td>-31%</td>
</tr>
<tr>
<td>Non-PCP Visits</td>
<td>16%</td>
<td>18%</td>
</tr>
<tr>
<td>Total Rx</td>
<td>10%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Notes: "Non-PCP visits" are any visits with a physician or other licensed care provider that have not been identified as primary care. This could include physician specialists as well as other providers such as occupational therapists. "PCP Visits" are not mutually exclusive from the "Preventive Visits" category. "Preventive Visits" include CPT codes 99381-99387, 99391-99397, 99401-99404, 99429, G0402.

Sources: HPC analysis of Massachusetts All-Payer Claims Database, 2015
Diabetes Cohort: AMC-led providers do not score better on two measures of quality diabetes care

Diabetes-related quality metrics for AMC-anchored and physician-led organizations, 2014

Notes: Most current available data source is from 2014. Analysis selected two representative process measures from a larger set of quality measures for diabetes care. These measures are process measures rather than A1C control measures.

Sources: HPC analysis of “A Focus on Provider Quality Databook 2018,” CHIA April 2018
Once we isolated to similar groups of patients, spending was still ~20% higher for patients attributed to AMC-anchored organizations vs. those attributed to physician-led organizations

- **Hospital outpatient spending** continued to be a key driver, with more than 50% higher spending for patients in AMC-anchored groups for outpatient surgery, labs and pathology, and radiology
  
  - **Site of service**: Patients in AMC-anchored groups typically received routine services (such as labs, tests, procedures) in more expensive hospital outpatient departments; patients in physician-led groups received them in physician offices
  
  - **Price**: Patients in AMC-anchored groups often paid 30-60% more for the same services
  
  - **Utilization**: Patients in AMC-anchored groups had more ED visits and more office visits to non-PCPs. They had fewer visits to PCPs.

- **Quality and provision of recommended care** was not superior at AMC-anchored groups for diabetes patients
**Presentation Topics and potential areas for recommendations**

<table>
<thead>
<tr>
<th>Topics</th>
<th>Overview</th>
<th>Utilization</th>
<th>Price</th>
<th>Total Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overview</strong></td>
<td>▪ Trends in spending, affordability, and care delivery</td>
<td>▪ Trends</td>
<td>▪ Oncology drug prices</td>
<td>▪ TME by provider group</td>
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<td></td>
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<td>▪ Low value care</td>
<td>▪ Commercial prices compared to Medicare prices</td>
<td>▪ Provider organization cohort study</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Admissions from the ED</td>
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</tr>
</tbody>
</table>

**Themes from the 2018 Cost Trends Hearing and Policy Recommendations**
Variation and complexity in health care payment systems increases administrative burden and impedes transparency.

Health care cost savings are not being passed to consumers in the form of more affordable insurance products.

Price is a primary driver of health care spending.

Inpatient readmissions rates remain high.

Rising pharmaceutical costs are a driving factor of cost growth.

Telehealth and interoperable electronic medical records can increase access to high-quality behavioral health care.

The future of the healthcare workforce is uncertain, but there are efforts to develop new roles and focus on patient-centered care.

There has been limited adoption and alignment of alternative payment methodologies.

Spending to address social determinants of health will improve upstream intervention and health care quality.
Reflecting on the findings presented today from the 2018 Cost Trends Report, discussion at the 2018 Cost Trends Hearing, and other work over the past year, what other topics should the HPC consider for inclusion in this year’s policy recommendations and/or for further examination in 2019?
2019 Public Meeting Calendar

**Board Meetings**

- Wednesday, February 13
- Wednesday, March 13 – Benchmark Hearing
- Wednesday, May 1 (1:00 PM)
- Wednesday, July 24
- Wednesday, September 11
- Wednesday, December 11

**2019 Cost Trends Hearing**

**Day One:** Tuesday, October 22

**Day Two:** Wednesday, October 23

**Committee Meetings**

- Wednesday, February 27
- Wednesday, June 5
- Wednesday, October 2
- Wednesday, November 20

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△ Board meetings begin at 12:00 PM, unless otherwise noted.

† Market Oversight and Transparency (MOAT) Committee meets at 9:30 AM and Care Delivery and Transformation (CDT) Committee meets at 11:00 AM, unless otherwise noted.