Databook for 2013 Cost Trends Report
Health Policy Commission

List of tables in 2013 cost trends report by Health Policy Commission

Table 1.1: Contribution to difference from U.S. per capita average by category of service

Percent of difference in per capita spending, 2009

	All payers	Medicare	Medicaid
Total difference in per capita spending	$2,463	$1,452	$912
Hospital	42%	90%	31%
Long-term care and home health*	31%	53%	73%
Professional services†	24%	-35%	5%
Drugs and other medical non-durables	3%	-2%	-11%
Medical durables	0%	-5%	2%

* Includes nursing home care, home health care, and other health, residential, and professional care.

† Includes physician and clinical services, dental services, and other professional services.

Source: Centers for Medicare & Medicaid Services; HPC analysis

Table 1.2: Hospital utilization and commercial prices compared to U.S. average

Per 1,000 persons, 2011 except where noted

	MA	U.S.	Difference (%)
Hospital inpatient			
Inpatient admissions (indexed to U.S., age-adjusted)*	1.10	1.00	10%
Inpatient average length-of-stay	5.0	5.4	-7%
Inpatient days	631	600	5%
Inpatient surgeries†	32	32	0%
Hospital outpatient			
Emergency department (ED) visits	468	415	13%
Outpatient visits, excluding ED‡	2,907	1,691	72%
Outpatient surgeries†	71	56	27%
Commercial prices§			
All services	--	--	3%
Common inpatient services¤	--	--	5%

* Inpatient admissions were indexed to the U.S. average and adjusted for age differences in order to allow for cross-state comparisons.

† Values for inpatient and outpatient surgeries are from 2010.

‡ Outpatient hospital visits include all clinic visits, referred visits, observation services, outpatient surgeries, and emergency department visits.

§ Values for commercial prices are from 2007-09.

¤ Common inpatient services are defined as those DRGs which had at least 50 occurrences in every hospital referral region.

Source: Kaiser Family Foundation; American Hospital Association; Medical Expenditure Panel Survey; Analysis by Chapin White of a report from the 1995-2009 Truven Health Analytics MarketScan® Commercial Claims and Encounters Database (copyright © 2011 Truven Health Analytics, all rights reserved); Harvard University research conducted for Institute of Medicine; HPC analysis

Table 1.3: Annual growth of health care expenditures and the economy

Per capita compound annual growth rate

	1991-2001	2001-2009	2009-2012
*Growth of health care expenditures**			
MA	5.4%	6.5%	3.1%
U.S.	5.2%	5.5%	3.1%
Growth of economy †			
MA	5.5%	2.9%	3.7%
U.S.	4.5%	2.8%	3.2%
Excess growth ‡			
MA	-0.1%	3.5%	-0.5%
U.S.	0.7%	2.7%	-0.1%

* CMS personal health care estimates are used through 2012 for U.S. and 2009 for MA. CMS state estimates end in 2009; HPC estimates are used for 2009-2012 MA growth.

† Growth of economy defined as GDP growth for U.S. and GSP growth for MA.

‡ Excess growth defined as health care growth less economic growth. A positive value means health care grew faster than the economy.

Source: Centers for Medicare & Medicaid Services; Bureau of Economic Analysis; Center for Health Information and Analysis; MassHealth; Census Bureau; HPC analysis

Table 1.4: Annual growth of health care expenditures by category of service

Per capita compound annual growth rate, 2001-2009

	Overall		Medicare		Medicaid	
	MA	U.S.	MA	U.S.	MA	U.S.
Total	6.5%	5.5%	6.4%	6.8%	0.7%	2.3%
Hospital	7.1%	5.8%	4.2%	4.2%	0.8%	3.1%
Long-term care and home health*	6.1%	5.7%	7.9%	10.4%	2.3%	2.7%
Professional services†	6.5%	5.1%	5.2%	5.5%	1.1%	4.5%
Drugs and other medical non-durables	6.0%	6.0%	46.4%	36.9%	-12.8%	-5.8%
Medical durables	4.3%	3.3%	2.1%	4.6%	6.8%	3.0%

* Includes nursing home care, home health care, and other health, residential, and professional care.

† Includes physician and clinical services, dental services, and other professional services.

Source: Centers for Medicare & Medicaid Services; HPC analysis

Table 1.5: HPC estimates of recent growth of health care expenditures by payer type

Compound annual growth rate, 2009-2012

	Enrollment	Per capita spending
Total	0.3%	3.1%
Medicare	2.7%	1.5%
Medicaid	4.7%	0.8%
Commercial	-1.0%	2.8%

Source: Centers for Medicare & Medicaid Services; Bureau of Economic Analysis; Center for Health Information and Analysis; MassHealth; Census Bureau; HPC analysis

Table 1.6: Trends in hospital utilization and commercial prices from 2001-2009

Per 1,000 persons compared to U.S. average

	2001	2009	Change
Overall per capita spending	26%	36%	+10 p.p.
Hospital inpatient			
Inpatient admissions	1%	7%	+6 p.p.
Hospital outpatient			
Emergency department (ED) visits	14%	14%	0 p.p.
Outpatient visits, excluding ED*	66%	65%	-1 p.p.
Commercial prices†			
Common inpatient services‡	-5%	5%	+10 p.p.

* Outpatient hospital visits include all clinic visits, referred visits, observation services, outpatient surgeries, and emergency department visits.

† Values for commercial prices are from 2007-09.

‡ Common inpatient services are defined as those DRGs which had at least 50 occurrences in every hospital referral region.

Source: Kaiser Family Foundation; American Hospital Association; Analysis by Chapin White of a report from the 1995-2009 Truven Health Analytics MarketScan® Commercial Claims and Encounters Database (copyright © 2011 Truven Health Analytics, all rights reserved); HPC analysis

Table 1.7: Hospital composition compared to U.S.

Percent of acute hospitals, 2011

	MA	U.S.
Major teaching hospitals	23%	5%
Critical access hospitals	4%	27%
By profit status		
For-profit hospitals	17%	21%
Not-for-profit hospitals	81%	58%
Public hospitals	3%	21%

Source: Medicare Payment Advisory Commission; Kaiser Family Foundation; HPC Massachusetts acute hospital list

Table 1.8: Health care system capacity compared to U.S.

Per 1,000 persons, 2011

	MA	U.S.	Difference
Number of acute hospitals	0.012	0.016	-26%
Hospital beds	2.4	2.6	-8%
Health care practitioners and technical occupations	34.6	24.1	+43%

Source: Kaiser Family Foundation; American Hospital Association; Bureau of Labor Statistics Occupational Employment Statistics Survey; American Community Survey; HPC analysis

Table 1.9: Health insurance coverage by insurance type compared to U.S.

Percent of population, 2011

	MA	U.S.
Employer	58%	49%
Individual	5%	5%
Medicaid	16%	13%
Medicare	13%	13%
Dual-eligible	4%	3%
Other public	<1%	1%
Uninsured	3%	16%

Source: Kaiser Family Foundation; Center for Health Information and Analysis; HPC analysis

Table 1.10: Selected population risk factors and disease prevalence compared to U.S.

Percent of population, 2011

	MA	U.S.	MA rank	Best state
Population risk factors				
Adults who are current smokers	18.2%	21.2%	9	11.8% (UT)
Overweight or obese (BMI > 25.0)	59.3%	63.5%	5	55.7% (HI)
Participated in physical activity in the past month	76.5%	73.8%	15	83.5% (CO)
Disease prevalence				
Diabetes	8.0%	9.5%	6	6.7% (CO)
Angina / coronary heart disease	3.8%	4.1%	15	2.5% (CO)
Cancer	12.0%	12.4%	21	9.2% (HI)
Depression	16.7%	17.5%	22	10.6% (HI)
Asthma	15.4%	13.6%	15	10.4% (TN)

Source: Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance Survey

Table 1.11: Condition and procedure quality measures compared to the U.S.

Units vary by measure, 2009-2011

	MA	U.S.	90th percentile	Year
Prevention and population health				
Childhood immunization status	76%	61%	72%	2010
Low birth weight rate	8%	8%	7%	2010
Rate of older adults receiving flu shots	73%	70%	75%	2010
Rate of female adolescents receiving HPV vaccine	41%	24%	42%	2010
Chronic care				
Rate of cholesterol management for patients with cardiovascular conditions	92%	89%	94%	2010
Rate of controlling high blood pressure	71%	63%	74%	2010
Rate of diabetes short-term complications admissions (adult)	48 per 100,000	58 per 100,000	39 per 100,000	2009
Number of admissions for CHF	374 per 100,000	338 per 100,000	199 per 100,000	2009
Number of adults admitted for asthma*	140 per 100,000	114 per 100,000	57 per 100,000	2009
Number of COPD admissions	247 per 100,000	199 per 100,000	112 per 100,000	2009
Hospital readmission rates†				
Acute myocardial infarction readmission rate	20%	20%	N/A	2011
Pneunmonia readmission rate	19%	18%	N/A	2011
Heart failure readmission rate	26%	25%	N/A	2011
Hospital mortality rates†				
Acute myocardial infarction mortality rate	15%	16%	N/A	2011
Pneunmonia mortality rate	11%	12%	N/A	2011
Heart failure mortality rate	10%	11%	N/A	2011
Patient safety				
Rate of iatrogenic pneumothorax (risk-adjusted)	0.41 per 1,000	0.42 per 1,000	N/A	2009-2011
Rate of postoperative respiratory failure	6.6 per 1,000	8.3 per 1,000	N/A	2009-2011
Rate of central venous catheter-related blood stream infections	0.28 per 1,000	0.39 per 1,000	N/A	2009-2011
Patient experience				
Patients at each hospital who reported that "yes" they were given information about what to do during recovery	87%	85%	88%	2011
Patients who reported that staff "always" explained about medicines before giving it to them	64%	64%	67%	2011
Patients who reported that their pain was "always" well controlled	71%	71%	73%	2011
Patients who reported that their nurses "always" communicated well	79%	78%	81%	2011

* Admissions for asthma per 100,000 population, age 18 and over. NQF measure counts all discharges of age greater than 18 and less than 40 years old.

† Readmission and mortality rates are for Medicare population only.

Source: Massachusetts Health Quality Partners; Kaiser Family Foundation; Agency for Healthcare Research and Quality; Massachusetts Immunization Action Partnership; Centers for Disease Control and Prevention; Centers for Medicare & Medicaid Services; Center for Health Information and Analysis; HPC analysis

Table 1.12: Health care access measures in Massachusetts

Units vary by measure

	2009	2010	2011
Structural accesss			
Residents without a doctor's visit in last 12 months	12%	12%	12%
Residents without a preventive care visit in last 12 months	22%	21%	22%
Residents with an ED visit	26%	25%	26%
ED visits that were non-emergent	34%	34%	31%
Residents with a non-emergent visit	9%	9%	8%
Residents with difficulty in obtaining care in last 12 months	23%	22%	22%
Financial access			
Average premiums	$384	$400	$421
Avoided care due to cost in last 12 months	21%	23%	24%
Having difficulty paying medical bills in last 12 months	15%	18%	18%

Source: Center for Health Information and Analysis

Table 3.1: Estimates of wasteful spending in the U.S. health care system

Percent of U.S. health care spending in year of estimate

Organization	Year	Estimate	Types of wasteful spending examined	Approach
PricewaterhouseCoopers	2005	54%	Behavioral, clinical, and operational inefficiencies	Literature review, interviews with health industry executives and government officials, and survey of 1,000 U.S. consumers
RAND Corporation	2008	50%	Administrative, operational, and clinical	Meta-analysis of research on waste
McKinsey Global Institute	2008	31%	Spending in excess of expected level of spending based on national wealth	Comparison of health care spending and income by country
Institute of Medicine	2012	30%	Unnecessary services, delivery inefficiencies, high prices, unnecessary administrative costs, missed prevention opportunities, and fraud and abuse	Meta-analysis of literature; expert interviews
Berwick and Hackbarth JAMA article	2011	27%	Overtreatment, failures of care delivery, failures of care coordination, pricing failures, administrative complexity, and fraud and abuse	Meta-analysis of literature
NEHI	2008	27%	Emergency department overuse, antibiotic overuse, patient medication non-adherence, vaccine underuse, hospital readmissions, hospital admissions for ambulatory care sensitive conditions, and medical errors	Meta-analysis of expert interviews, case studies, and a review of relevant literature

Source: PricewaterhouseCoopers; RAND Corporation; McKinsey & Company; Institute of Medicine; Journal of the American Medical Association; NEHI; HPC analysis

Table 3.2: Selected examples of wasteful spending in Massachusetts

Dollars

Example of wasteful spending	Estimate	Year	Definition of category
Opportunities for coordinated action across care settings			
Preventable acute hospital readmissions	$700M	2009	Hospital readmissions that could have been prevented through quality care in the initial hospitalization, adequate discharge planning, adequate post--discharge follow-up, or improved coordination between inpatient and outpatient health care teams
Unnecessary ED visits	$550M	2010	Visits to the emergency room that could have been avoided with timely and effective primary care
Opportunity for hospital action			
Health care-associated infections	$10 to $18M	2011	Infections contracted while patients are in a hospital receiving health care treatment for other conditions
Opportunities for physician and patient action			
Early elective inductions	$3 to $8M	2012	Elective inductions before 39 weeks, which increase the health risks for newborn babies and dramatically raise the likelihood of those infants being admitted to neonatal intensive care
Inappropriate imaging for lower back pain	$1 to $2M	2011	Diagnostic imaging (X-rays, CT scans, and MRIs) used against clinical guidelines in office visits for lower back pain

Source: Massachusetts Division of Health Care Finance and Policy; Department of Public Health; Massachusetts All-Payer Claims Database; Choosing Wisely; Leapfrog Group, American Journal of Obstetrics and Gynecology; Journal of the American Medical Association Internal Medicine; HPC analysis

Table 4.1: Spending concentration in Massachusetts

Claims-based expenditures (excluding pharmacy spending), dollars, 2010

	Medicare		Commercial	
	Expenditure threshold*	Percent of total expenditures	Expenditure threshold*	Percent of total expenditures
Top 1%	$99,600	15.3%	$48,900	22.4%
Top 5%	$45,800	42.0%	$16,500	45.0%
Top 10%	$26,900	60.1%	$9,600	58.6%
Top 20%	$11,000	78.1%	$4,900	73.3%
Top 50%	$2,600	94.5%	$1,600	91.8%

* Minimum expenditures for patient in that group.

Note: The sample was limited to patients who had at least six months of enrollment in both 2010 and 2011 and costs of at least $1 in each year. Figures do not capture pharmacy costs, payments outside the claims system, Medicare cost-sharing, or end-of-life care for patients who died in 2010 or 2011.

Source: All-Payer Claims Database; HPC analysis

Table 4.2: Prevalence of selected clinical conditions*

Percent of population; ratio of prevalence between high-cost patients and the rest of the population, 2010

	Medicare		Commercial	
	Overall prevalence	Prevalence among high-cost	Overall prevalence	Prevalence among high-cost
Arthritis	28%	1.6x	10%	3.0x
Asthma	13%	2.1x	7%	1.9x
Cardiology	21%	2.1x	7%	3.3x
Diabetes	23%	1.7x	5%	2.7x
Endocrinology	12%	4.0x	5%	4.3x
Hematology	9%	3.3x	3%	4.1x
Hepatology	4%	3.3x	2%	5.6x
High-cost cardiology	21%	3.0x	2%	7.4x
High-cost gastroenterology	8%	4.7x	3%	6.7x
High-cost pulmonary conditions	4%	9.8x	0%	21.2x
Hyperlipidemia	24%	0.6x	10%	1.2x
Hypertension	45%	0.7x	14%	1.9x
Infectious diseases	2%	14.2x	0%	17.5x
Malignant neoplasms (cancer)	11%	1.9x	3%	7.6x
Mental health	14%	2.6x	7%	2.1x
Mood disorders	9%	3.4x	2%	5.4x
MS & ALS	1%	2.6x	0%	5.5x
Neoplastic blood diseases and leukemia	2%	4.4x	0%	12.4x
Neurology	21%	2.8x	6%	3.7x
Poisoning and toxic drug effects	3%	5.8x	2%	3.6x
Renal Failures	8%	5.7x	1%	11.5x
Substance Abuse	5%	2.2x	3%	3.2x
Urology	7%	5.2x	2%	5.8x

* Clinical conditions as defined by Lewin's ERG grouper. 23 clinical conditions selected for presentation include common chronic conditions and conditions particularly prevalent among high-cost patients.

Notes: (A) High-cost patients defined as 5% of patients with highest claims-based medical expenditures (excluding pharmacy spending) in a given year. (B) The sample was limited to patients who had at least six months of enrollment in both 2010 and 2011 and costs of at least $1 in each year. Figures do not capture pharmacy costs, payments outside the claims system, Medicare cost-sharing, or end-of-life care for patients who died in 2010 or 2011.

Source: All-Payer Claims Database; HPC analysis

Table 4.3: Effect of selected clinical conditions on the likelihood of being high-cost and persistently high-cost*

Odds ratio

	High-cost in 2010		Persistent in 2011†	
Clinical conditions in 2010	Medicare	Commercial	Medicare	Commercial
Arthritis	1.2x	2.5x	1.0x	1.2x
Asthma	1.3x	1.6x	1.3x	1.2x
Cardiology	1.7x	2.6x	1.1x	1.1x
Diabetes	1.2x	1.3x	1.2x	1.2x
Endocrinology	2.2x	2.3x	1.2x	1.2x
Hematology	2.1x	2.3x	1.4x	1.1x
Hepatology	1.6x	3.4x	1.1x	1.0x
High-cost cardiology	4.2x	7.3x	1.1x	1.3x
High-cost gastroenterology	2.1x	4.9x	1.0x	1.5x
High-cost pulmonary conditions	3.1x	5.4x	1.1x	1.3x
Hyperlipidemia	0.7x	0.8x	0.7x	0.8x
Hypertension	1.3x	1.8x	0.9x	1.0x
Infectious diseases	2.9x	4.4x	1.2x	1.6x
Malignant neoplasms (cancer)	2.1x	8.6x	1.2x	2.2x
Mental health	1.6x	1.8x	1.1x	1.2x
Mood disorders	2.3x	3.3x	1.1x	1.4x
MS & ALS	2.2x	4.0x	1.6x	3.1x
Neoplastic blood diseases and leukemia	4.2x	8.8x	1.8x	3.1x
Neurology	2.2x	2.4x	1.1x	1.3x
Poisoning and toxic drug effects	2.5x	2.6x	1.3x	1.3x
Renal Failures	2.7x	2.6x	1.8x	1.8x
Substance Abuse	1.2x	1.9x	1.2x	1.3x
Urology	1.6x	3.0x	1.0x	1.1x

* Clinical conditions as defined by Lewin's ERG grouper. 23 clinical conditions selected for presentation include common chronic conditions and conditions particularly prevalent among high-cost patients.

† Of patients who were high-cost in 2010.

Notes: (A) Results control for age, sex, region of residence, income, other clinical conditions, and interactions among conditions. (B) High-cost patients defined as 5% of patients with highest claims-based medical expenditures (excluding pharmacy spending) in a given year. (C) The sample was limited to patients who had at least six months of enrollment in both 2010 and 2011 and costs of at least $1 in each year. Figures do not capture pharmacy costs, payments outside the claims system, Medicare cost-sharing, or end-of-life care for patients who died in 2010 or 2011.

Source: All-Payer Claims Database; HPC analysis

Table 4.4: Effect of patient residence on likelihood of being high-cost and persistently high-cost

Odds ratio relative to Pioneer Valley / Franklin

	High-cost in 2010		Persistent in 2011†	
Region of residence*	Medicare	Commercial	Medicare	Commercial
Berkshires	1.4x	1.6x	1.2x	1.1x
Cape and Islands	1.4x	1.6x	1.5x	1.2x
Central Massachusetts	1.3x	1.1x	1.4x	1.2x
East Merrimack	1.4x	1.2x	1.5x	1.2x
Fall River	1.2x	1.1x	1.5x	1.2x
Lower North Shore	1.2x	1.4x	1.4x	1.2x
Metro Boston	1.5x	1.3x	1.7x	1.2x
Metro South	1.5x	1.1x	1.6x	1.1x
Metro West	1.2x	1.2x	1.6x	1.2x
New Bedford	1.3x	1.1x	1.4x	1.1x
Norwood / Attleboro	1.4x	1.2x	1.6x	1.2x
Pioneer Valley / Franklin	1.0x	1.0x	1.0x	1.0x
South Shore	1.4x	1.2x	1.5x	1.1x
Upper North Shore	1.3x	1.1x	1.5x	1.2x
West Merrimack / Middlesex	1.3x	1.1x	1.5x	1.2x

* Regions as defined in Technical Appendix B3: Regions of Massachusetts

† Of patients who were high-cost in 2010.

Notes: (A) Results control for clinical conditions, interactions among conditions, age, sex, and income. (B) High-cost patients defined as 5% of patients with highest claims-based medical expenditures (excluding pharmacy spending) in a given year. (C) The sample was limited to patients who had at least six months of enrollment in both 2010 and 2011 and costs of at least $1 in each year. Figures do not capture pharmacy costs, payments outside the claims system, Medicare cost-sharing, or end-of-life care for patients who died in 2010 or 2011.

Source: All-Payer Claims Database; HPC analysis

Table 4.5: Concentration of high-cost and persistently high-cost patients by income group

Percent difference from statewide average

	High-cost in 2010		Persistent in 2011†	
Community income*	Medicare	Commercial	Medicare	Commercial
Less than $35,000	3.4%	-0.7%	13.7%	0.6%
$35,000 to $50,000	9.5%	5.4%	21.6%	4.2%
$50,000 to $75,000	-0.6%	3.1%	-2.9%	4.2%
$75,000 to $100,000	-1.5%	-1.2%	-5.5%	-1.9%
Greater than $100,000	-7.2%	-7.0%	-12.9%	-7.8%

* Patient income is not directly available in the APCD. We used median household income in a patient's zip code of residence as a proxy for individual income.

† Of patients who were high-cost in 2010.

Notes: (A) High-cost patients defined as 5% of patients with highest claims-based medical expenditures (excluding pharmacy spending) in a given year. (B) The sample was limited to patients who had at least six months of enrollment in both 2010 and 2011 and costs of at least $1 in each year. Figures do not capture pharmacy costs, payments outside the claims system, Medicare cost-sharing, or end-of-life care for patients who died in 2010 or 2011.

Source: All-Payer Claims Database; HPC analysis