COMMONWEALTH OF MASSACHUSETTS
HEALTH POLICY COMMISSION

TECHNICAL APPENDIX B2
HOSPITAL OUTPATIENT

ADDENDUM TO 2015 COST TRENDS REPORT

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1 Summary

This section describes the Health Policy Commission's (HPC) approach to measuring hospital outpatient spending in Massachusetts.

1.1 Data

We used the Massachusetts All Payer Claims Database (APCD) for calendar years 2011-2013 for our analysis. Our sample included data from the three major commercial payers, Blue Cross Blue Shield, Harvard Pilgrim Health Plan, and Tufts Health Plan. Expenditures do not capture pharmacy costs or payments outside the claims system.

2 Surgical procedures

The goal of the surgical cross-over exhibits was to identify total volume, spending, price per procedure, and differences in cost across settings of care for procedures that can be performed either in hospital inpatient or hospital outpatient settings. 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 a hospital outpatient setting. Total spending includes insurer and enrollee payments for the facility portion of the surgical procedure; the physician portion billed on a separate professional claim is not included. Inpatient procedure costs include the hospital payment for the entire stay associated with the surgery. Outpatient procedure costs include the hospital payment for all lines on the outpatient claim for the surgery. The five procedures are laparoscopic cholecystectomy (CPT procedure code 47562 for outpatient surgeries and ICD-9 procedure code 5123 for inpatient surgeries), laparoscopic appendectomy (CPT 44970 and ICD-9 procedure code 4701), arthrodesis (CPT 22845 and 22551; and ICD-9 procedure code 8102), laparoscopic total hysterectomy (CPT 58570, 58571, 58572, and 58573; and ICD-9 procedure code 6841), and laparoscopic vaginal hysterectomy (CPT 58552, 58553, and 58554; and ICD-9 procedure code 6841).

Table 1: Change in volume for five major cross-over surgical procedures performed in acute care hospitals, 2011 – 2013

		2011	2013
Volume	Inpatient	3,800	2,167
	Outpatient	3,501	5,174
Spending	Inpatient	$45.6 M	$32.5 M
	Outpatient	$19.8 M	$33.6 M
Total ($ in million)		$65.5 M	$66.1 M

3 Spending per procedure between hospital outpatient and non-hospital settings

The goal of these exhibits was to identify total spending on common outpatient services and service categories according to the setting in which the services were performed. To calculate this metric, we linked professional and outpatient facility claim lines for services provided to the same patient, on the same day, with the same procedure code. Spending was calculated as the sum of the facility and professional portions of the covered medical service, on all claim lines for the same patient on the same date with the same CPT procedure code. Procedure codes were mapped to service categories as shown below.

Table 2: Procedure Codes for Categories in Point-of-Service Exhibits

Category	HCPCS procedure codes
Imaging	70010-79999; R0070-R0076
Diagnostic tests	44360-44397, 45300-45392, 91110, 91111, 43239
Lab	80047-89398; P2028-P9615
Chemotherapy	96401-96425
Office E&M visit	99211-99215

Services were assigned to a setting of care—either hospital outpatient department (HOPD), community, or other—based on the file type, site of service, and procedure code modifiers present on each claim line. The following claims were assigned to the HOPD category:

- If one or both claim lines were submitted on a facility claim by an outpatient hospital
- If one or both claim lines were submitted on a professional claim with a site of service equal to ‘22’ (hospital outpatient) or ‘23’ (emergency room)

The remaining procedures were assigned to the community category if they met any of the following criteria:

- One or both claim lines were submitted on a facility claim by a freestanding outpatient facility
- One or both claim lines were submitted on a professional claim with the procedure modifier ‘SG’ (ambulatory surgical center)
- One or both claim lines were submitted on a professional claim with the site of service equal to ‘11’ (office), ‘20’ (urgent care), ‘17’ (walk-in retail clinic), ‘24’ (ambulatory surgical center), ‘49’ (independent clinic), ‘50’ (FQHC), ‘71’ (public health clinic), ‘72’ (rural health clinic), or ‘81’ (independent lab).

Procedures that did not meet any of the criteria above were categorized as “all other and unknown settings.” The all other and unknown setting category accounted for 2 percent of chemotherapy procedures, 4 percent of diagnostic and laboratory tests, 7 percent of evaluation and management (E&M) visits, and 9 percent of imaging claims. This category includes all professional claims for services delivered to hospital inpatients and residents of nursing facilities or other residential care facilities.

Table 3: Changes in site of care for chemotherapy administration and E&M visits, 2011 – 2013

Procedures per 1,000 member months		2011	2013	Percent Change
Chemotherapy	Hospital Outpatient	3.3	3.6	9.9%
	Non-hospital	1.1	1.0	-9.0%
Evaluation & Management Visits	Hospital Outpatient	37.8	40.1	5.9%
	Non-hospital	180.3	164.9	-8.6%

Table 4: Comparison of spending per procedure between hospital outpatient and non-hospital settings, 2013

	Imaging		Diagnostic Tests	
	Knee MRI		Colonoscopy	Upper GI endoscopy
CPT Code	**73721**		**45378**	**43239**
Distribution of spending per procedure				
Mean				
Hospital outpatient	$862		$1,489	$1,417
Non-hospital	$652		$923	$908
Ratio	1.32		1.61	1.56
10th percentile				
Hospital outpatient	$566		$443	$695
Non-hospital	$373		$519	$444
Ratio	1.52		0.85	1.56
25th percentile				
Hospital outpatient	$632		$1,106	$921
Non-hospital	$534		$696	$620
Ratio	1.18		1.59	1.49
Median				
Hospital outpatient	$782		$1,470	$1,421
Non-hospital	$613		$945	$930
Ratio	1.27		1.55	1.53
75th percentile				
Hospital outpatient	$976		$1,832	$1,711
Non-hospital	$734		$1,233	$1,187
Ratio	1.33		1.49	1.44
90th percentile				
Hospital outpatient	$1,341		$2,363	$2,317
Non-hospital	$829		$1,359	$1,290
Ratio	1.62		1.74	1.80

4 Common Lab Tests

4.1 Data

We used the Massachusetts All Payer Claims Database (APCD) for calendar years 2012 for our analysis. Our sample included data from the three major commercial payers, Blue Cross Blue Shield, Harvard Pilgrim Health Plan, and Tufts Health Plan. Expenditures do not capture pharmacy costs or payments outside the claims system.

4.2 Analysis

We looked at outpatient laboratory tests for the following CPT procedure codes, based on a study examining variation in hospital charges for ten common laboratory tests in California hospitals[i].

Test	Test Code
Basic Metabolic Panel	**80048**
Comprehensive Metabolic Panel	**80053**
Lipid Panel	**80061**
Creatine Kinase Total	**82550**
Thyroid Stimulating Hormone	**84443**
Quantitative Troponin Test	**84484**
Thromboplastin Time	**85730**
CBC with Differential WBC Count	**85025**
Complete Blood Count (CBC)	**85027**
Prothrombin Time	**85610**

We excluded all claim lines that did not include an allowed amount. All claims that did not belong to a hospital outpatient department were grouped into the following physician systems using the SK&A database:

Atrius Health	Physician Office
Baystate Health System	Physician Office
Berkshire Health System	Physician Office
Boston University School Med	Physician Office
Cape Cod Healthcare	Physician Office
Care Group Healthcare System	Physician Office
Lahey Health System	Physician Office
Partners Healthcare System	Physician Office
Signature Healthcare	Physician Office
Southcoast Health System	Physician Office
Steward Health Care System	Physician Office
Tenet Healthcare Corporation	Physician Office
UMass Memorial Health Care	Physician Office
Other	Physician Office

The "Other" Category represents claims that could be considered "missing data" or data that has a National Provider Identification, but cannot be grouped into a recognizable physician system or a hospital outpatient department, such as a physician in an independent practice. In the

[i] Hsia RY, Anti YA, Nath JP. Variation in charges for 10 common blood tests in California hospitals: a cross-sectional analysis. BMJ Open 2014; 4(8).

calculation averages, we only included organizations that had greater than 15 claims before reporting their average price per claim.