COMMONWEALTH OF MASSACHUSETTS
HEALTH POLICY COMMISSION

TECHNICAL APPENDIX B5
WASTEFUL SPENDING: READMISSIONS AND EMERGENCY DEPARTMENT USE

ADDENDUM TO 2014 COST TRENDS REPORT

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1 Emergency department utilization

The data for our analyses of emergency department (ED) utilization in Massachusetts include all outpatient emergency department visits, including Satellite Emergency Facility visits, by patients whose visits result in neither an outpatient observation stay nor an inpatient admission at the reporting facility from FY 2009 to FY 2012. The study population includes patients who presented at the ED and were discharged as outpatients within 24 hours. This data is submitted by hospitals to the Center for Health Information and Analysis. The HPC adjusted for age and sex when examining regional ED rate variation.

Our ED utilization analyses utilize the Emergency Department Algorithm developed by John Billings and colleagues at New York University. NYU has developed software for applying the algorithm using three different software applications: SAS, SPSS, and ACCESS – the HPC was able to transfer the algorithm data into STATA coding. The main purpose of the NYU ED Algorithm is to identify emergency department visits for primary care treatable conditions - i.e., visits that could have been provided in primary care setting or emergencies that could have been avoided if primary care had been delivered at earlier stage of illness. The NYU algorithm assigns the probability that each ICD-9 diagnosis code associated with an ED visit falls into one of the four categories: (1) non-emergent; (2) an emergency for a problem requiring contact with the medical system within 12 hours but treatable in an office visit (primary care treatable); (3) an emergency not treatable in an office visit but preventable or avoidable; and (4) an emergency that is not preventable or avoidable.

The ED algorithm provides an estimate of the number of avoidable ED visits within a dataset of ED visits. Following the NYU's ED algorithm, avoidable ED utilization in this report is defined as ED visits that are preventable or avoidable with timely and effective primary care, including three categories: (1) non-emergent; (2) emergency but primary care treatable; and (3) emergency (ED care needed) but preventable/ avoidable. We applied the algorithm to ED visits from 2010 - 2012 from CHIA's ED database.

Table B5.1 shows detailed data on outpatient ED visits per capita, by region.

Table B5.1: Outpatient ED visits per capita, by region, 2010 and 2012

Region of residence*	Outpatient ED visits			Avoidable ED visits as a percentage of all outpatient ED visits (2012)
	Per 1,000 persons (2010)	Per 1,000 persons (2012)	Average Annual Percent Change (2010-2012)	
Fall River	566	566	0%	51%
Cape and Islands	551	549	0%	50%
Berkshires	542	529	-1%	47%
New Bedford	458	474	2%	50%
East Merrimack	449	449	0%	52%
Metro South	412	421	1%	50%
Pioneer Valley / Franklin	423	417	-1%	49%
Central Massachusetts	354	362	1%	47%
Metro Boston	340	357	2%	50%
Lower North Shore	359	354	-1%	46%
Upper North Shore	363	347	-2%	46%
Metro West	326	338	2%	48%
South Shore	332	330	0%	46%
Norwood / Attleboro	285	289	1%	46%
West Merrimack / Middlesex	270	273	1%	46%

* Regions as defined in Technical Appendix: Regions of Massachusetts
Source: HPC analysis of Centers for Health Information and Analysis Outpatient ED database, FY2010-FY2012