COMMONWEALTH OF MASSACHUSETTS
HEALTH POLICY COMMISSION

TECHNICAL APPENDIX C2
POST-ACUTE CARE

ADDENDUM TO 2019 COST TRENDS REPORT

Contents

1 Summary

This appendix describes the Health Policy Commission's (HPC) approach to examining post-acute care in the **"Post-Acute Care"** chartpack of the 2019 Cost Trends Report.

2 Comparing post-acute care use in Massachusetts and the U.S.

2.1 Data

For **Exhibit I: PAC discharges, all DRGs, all payers, 2016** HPC used the Healthcare Cost and Utilization Project's (HCUP) 2016 Massachusetts State Inpatient and National Inpatient Sample to create a dataset that included patients discharged to routine care or some form of post-acute care (PAC). Using HCUP's discharge destinations, HPC created the following categories:

1. Routine: ("routine")
2. Home health care: ("home health care")
3. Institutional: ("skilled nursing facilities (SNF)", "intermediate care facility (ICF)" and "another type of facility" such as an inpatient rehabilitation facility.)

2.2 Analysis

HPC evaluated the distribution of discharges by total discharges and also grouped results by payer: Medicaid, Medicare, and Commercial. The following discharge destinations were excluded in the analysis: short term hospitals, unknown destination, patients deceased, and left against medical advice.

3 Comparing PAC use in Massachusetts over time

3.1 Data

For **Exhibit II: Adjusted percentage of discharges to post-acute care, all DRGs, 2010-2018,** HPC used the Center for Health Information and Analysis' (CHIA) Hospital Inpatient Discharge Database (HIDD) 2010-2018 to compare rates of PAC discharges. HPC limited the sample to Massachusetts residents who were at least 18 years of age with the following discharge destinations in Case Mix: home/routine, long-term care hospital, rehabilitation facility or hospital, rehabilitation hospital, skilled nursing facility, intermediate care facility, home health agency, and home/IV therapy. Discharges from hospitals that closed and specialty hospitals, except New England Baptist, were excluded. Due to coding inconsistencies in certain years, UMass Memorial Medical Center, Clinton, Marlborough, Cape Cod, and Falmouth hospitals were removed from the time trend analyses. HPC also limited the analysis to DRGs that had at least ten discharges in every year from 2011 to 2018. Based on input from providers, HPC concluded that distinctions between discharges to "skilled nursing facility" versus "inpatient rehabilitation facility" versus "long-term care hospital" were not coded accurately enough to

ensure meaningful results by this level of provider type. Therefore, HPC grouped Case Mix discharges into the following categories:

1. Routine: ("home/routine")
2. Home health care: ("home health agency" and "home/IV therapy")
3. Institutional: ("long-term care hospital" / "rehabilitation facility or hospital" and "rehabilitation hospital"/ "skilled nursing facility"/"intermediate care facility")

3.2 Analysis

For the adjusted PAC rate per year, HPC adjusted for change in case mix over time. To do so, HPC used ordinary least squares (OLS) to estimate a time trend, controlling for age, sex, and changes in the mix of diagnosis-related groups (DRGs) over time. Time effects were modeled on a per-year basis.

4 Comparing PAC discharges from high volume hospitals in Massachusetts

4.1 Data

To estimate institutional PAC discharges by hospital (**Exhibit III: Adjusted institutional discharge rates for 30 highest volume hospitals, 2018**), HPC used the Center for Health Information and Analysis' (CHIA) Hospital Inpatient Discharge Database (HIDD) 2018 to compare rates of institutional PAC discharges.

4.2 Analysis

HPC ranked the 30 hospitals with the highest volume of discharges by percentage of discharges to institutional post-acute care in 2018. HPC used OLS to adjust for major diagnostic category, age, sex, admission source and primary payer. Several acute care hospitals (UMass Memorial Medical Center, Clinton Hospital, Cape Cod Hospital, Falmouth Hospital, Marlborough Hospital) were excluded due to data irregularities.