

**COMMONWEALTH OF MASSACHUSETTS  
HEALTH POLICY COMMISSION**

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**TECHNICAL APPENDIX 6  
POST-ACUTE CARE**

**ADDENDUM TO 2022 COST TRENDS REPORT**

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## 1 Summary

This appendix describes the Health Policy Commission’s (HPC) approach to examining post-acute care (PAC) in the **Post-Acute Care** chartpack.

## 2 Comparing PAC use in Massachusetts and the U.S.

### 2.1 Data

For the exhibit **Use of post-acute care in Massachusetts and the U.S., all DRGs, 2019**, the HPC used the Healthcare Cost and Utilization Project’s (HCUP) 2019 Massachusetts State Inpatient and National Inpatient Sample to create a dataset that included patients discharged to routine care or a form of 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, patient deceased, and left against medical advice.

## 3 Tracking PAC use in Massachusetts over time

### 3.1 Data

For the exhibit **Post-acute care in Massachusetts following hospital discharge, all DRGs, 2010-2021**, the HPC used the Center for Health Information and Analysis’ (CHIA) Hospital Inpatient Discharge Database (HIDD) CY 2010-2021 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 HIDD: 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 were excluded from specialty hospitals, except New England Baptist. Due to coding inconsistencies in certain years, UMass Memorial Medical Center, Clinton Hospital, Cape Cod Hospital, Falmouth Hospital, and Marlborough Hospital were removed from the time trend analyses. Sturdy Memorial Hospital was excluded due to missing data in 2020 and 2021. COVID-19 field hospitals were excluded due to small discharge size. The HPC also limited the analysis to DRGs that had at least ten discharges in every year from 2010 to 2020. 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, the 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”/ “rehabilitation hospital”/ “skilled nursing facility”/“intermediate care facility”)

### 3.2 Analysis

For the adjusted PAC rate per year, HPC adjusted for change in HIDD 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 Tracking PAC discharges following a major hip and knee replacement

### 4.1 Data

For the exhibit **Post-acute care in Massachusetts following a major hip and knee replacement (DRG 470), 2010-2021**, the HPC used CHIA’s HIDD data from CY 2010-2021.

### 4.2 Analysis

HPC evaluated the distribution of PAC discharges for DRG 470 by the following discharge destinations: Routine, Home health care, Institutional (similar to the exhibit **Post-acute care in Massachusetts following hospital discharge, all DRGs, 2010-2021**) The data sample was limited to Massachusetts residents who were at least 18 years of age. Discharges were excluded from hospitals that closed and from specialty hospitals, except New England Baptist. UMass Memorial Medical Center, Clinton Hospital, Cape Cod Hospital, Falmouth Hospital, and Marlborough Hospital were excluded due to coding irregularities. Sturdy Memorial Hospital was excluded due to missing data in 2020 and 2021. COVID-19 field hospitals were excluded due to small discharge size.

## 5 Tracking PAC discharges after a COVID-19-related hospitalization

### 5.1 Data

For the exhibit **Post-acute care in Massachusetts after a COVID-19-related hospitalization 2020-2021**, the HPC used CHIA’s HIDD data for CY 2020 and 2021.

### 5.2 Analysis

This analysis included in-state adult residents who had either a primary or secondary COVID-19 diagnosis (ICD-10 diagnosis code U07.1). PAC discharge destinations were defined in the same manner as prior exhibits detailed in sections 3 & 4. The HPC used OLS to adjust for age, sex, admission source, primary payer and DRGs over time. Specialty hospitals, except New England Baptist, were excluded. Several hospitals (UMass Memorial Medical Center, Clinton Hospital,

Cape Cod Hospital, Falmouth Hospital, Marlborough Hospital) were excluded due to coding irregularities in the database. Sturdy Memorial Hospital was excluded due to missing data. COVID-19 field hospitals were excluded due to small discharge size.