



MASSACHUSETTS HEALTH POLICY COMMISSION REVIEW OF

**Beth Israel Deaconess Care Organization's
Proposed Contracting Affiliation with New
England Baptist Hospital and New England
Baptist Clinical Integration Organization
(HPC-CMIR-2015-1)**

AND

**Beth Israel Deaconess Care Organization's
Proposed Contracting Affiliation and Beth Israel
Deaconess Medical Center's and Harvard Medical
Faculty Physicians' Proposed Clinical Affiliation
with MetroWest Medical Center
(HPC-CMIR-2015-2 and HPC-CMIR-2016-1)**

About the Health Policy Commission

The Health Policy Commission (HPC) is an independent state agency established through Chapter 224 of the Acts of 2012, the Commonwealth's landmark cost-containment law. The HPC, led by an 11-member board with diverse experience in health care, is charged with developing health policy to reduce overall cost growth while improving the quality of care and monitoring the health care delivery and payment systems in Massachusetts. The HPC's mission is to advance a more transparent, accountable, and innovative health care system through independent policy leadership and investment programs. The HPC's goal is better health and better care at a lower cost across the Commonwealth.

INTRODUCTION

Among the Massachusetts Health Policy Commission's (HPC) key responsibilities are fostering innovative health care delivery and payment models as well as monitoring and reviewing the impact of changes within the health care marketplace.¹ These dual values of **innovation** and **accountability** are at the core of the HPC's mission, and both are necessary to advance the goal of a more affordable and effective health care system.

One of the ways in which the HPC promotes these values is through monitoring and evidence-based reporting on the evolving structure and composition of the provider market. Health care provider market changes, including consolidation and alignments between providers under new care delivery and payment models, can impact health care market functioning and the performance of the health care system in delivering high quality, cost effective care. Yet, due to confidential payer-provider contracts and limited information about provider organizations, the mechanisms by which market changes impact the cost, quality, and availability of health care services have not historically been apparent to government, consumers, and businesses which ultimately bear the costs of the health care system.

Through the filing of notices of material change by provider organizations, the HPC now tracks the frequency, type, and nature of changes in our health care market.² The HPC may also engage in a more comprehensive review of particular transactions anticipated to have a significant impact on health care costs or market functioning. The result of such "cost and market impact reviews" (CMIRs) is a public report detailing the HPC's findings. In order to allow for public assessment of the findings, the transactions may not be finalized until the HPC issues its Final Report. Where appropriate, such reports may identify areas for further review or monitoring, or be referred to other state agencies in support of their work on behalf of health care consumers.³ This first-in-the-nation public reporting process is a unique opportunity to enhance the transparency of significant changes to our health care system and can inform and complement the many important efforts of other agencies, such as the Attorney General's Office, the Center for Health Information and Analysis, the Department of Public Health, and the Division of Insurance, in monitoring and overseeing our health care market.

The HPC conducts its work during a period of dynamic change among provider organizations, including accelerating consolidation, new contractual and clinical alignments, and the increased presence of alternative payment models focused on promoting accountable care. The CMIR process allows us to improve our understanding and increase the transparency

¹ MASS. GEN. LAWS ch. 6D, § 5.

² See MASS. GEN. LAWS ch. 6D, § 13 (requiring health care providers to notify the HPC before making material changes to their operations or governance). See also 958 CODE MASS. REGS. §§ 7.00. (2015), Notices of Material Change and Cost and Market Impact Reviews, available at <http://www.mass.gov/courts/docs/lib/900-999cmr/958cmr7.pdf>.

³ For example, MASS. GEN. LAWS ch. 6D, §13(f) requires referral of the CMIR report to the state Attorney General's Office if the HPC finds that a provider under review (1) has a dominant market share in its service area, (2) charges prices that are materially higher than the median prices in its service area for the same services, and (3) has a health status adjusted total medical expense that is materially higher than the median in its service area.

of these trends, the opportunities and challenges they may pose, and their impact on short and long term health care spending, quality, and consumer access. In addition, our reviews enable us to identify particular factors for market participants to consider in proposing and responding to potential future organizational changes. Through this process, we seek to encourage providers and payers alike to evaluate and take steps to minimize negative impacts and enhance positive outcomes of any given material change.

This document is the HPC's fourth CMIR report, examining two proposed contracting affiliations: one between the Beth Israel Deaconess Care Organization (BIDCO) and New England Baptist Hospital and its affiliates, and the second between BIDCO and MetroWest Medical Center. This report also examines the related clinical affiliation between MetroWest Medical Center and Beth Israel Deaconess Medical Center (BIDMC) and its affiliated physicians, Harvard Medical Faculty Physicians at BIDMC. Based on criteria articulated in Chapter 224 and informed by the facts of these transactions, we analyzed the likely impact of these new alignments, relying on the best available data and information. Our work included review of the parties' stated goals for the transactions and the information they provided in support of how and when these alignments would result in efficiencies and care delivery improvements.

Consistent with Chapter 224 and the mission of the HPC, we now release this report to contribute important and evidence-based information to the public dialogue as providers, payers, government, consumers and other stakeholders strive to develop a more affordable, effective, and accountable health care system.

TABLE OF CONTENTS

Introduction	
Acronyms and Abbreviations	ii
Naming Conventions	iii
Executive Summary	1
I. Analytic Approach and Data Sources	6
II. Overview of the Parties and the Transactions	10
III. Analysis of Parties' Baseline Performance (2010 – 2015)	26
IV. Impact Projections (2017 onward)	61
V. Conclusion	81
Acknowledgements	
Exhibit A: Beth Israel Deaconess Care Organization, Beth Israel Deaconess Medical Center, Harvard Medical Faculty Physicians at Beth Israel Deaconess Medical Center, MetroWest Medical Center, and New England Baptist Hospital and New England Baptist Clinical Integration Organization's Response to Preliminary Report	
Exhibit B: HPC Analysis of Parties' Response to Preliminary Report	

ACRONYMS AND ABBREVIATIONS

AGO	Massachusetts Attorney General's Office
AHRQ	Agency for Healthcare Research and Quality
AMC	Academic Medical Center
APCD	All-Payer Claims Database
Chapter 224	Chapter 224 of the Acts of 2012
CHIA	Massachusetts Center for Health Information and Analysis
CHIP	Children's Health Insurance Program
CMIR	Cost and Market Impact Review
CMS	Centers for Medicare and Medicaid Services
DOJ	United States Department of Justice
DRG	Diagnosis-Related Group
EHR	Electronic Health Records
FTC	Federal Trade Commission
GPSR	Gross Patient Service Revenue
HEDIS	Healthcare Effectiveness Data and Information Set
HHI	Herfindahl-Hirschman Index
HMO	Health Maintenance Organization
HPC	Health Policy Commission
HSN	Health Safety Net
IPA	Independent Practice Association
IQI	Inpatient Quality Indicator
MHQP	Massachusetts Health Quality Partners
NPSR	Net Patient Service Revenue
OB/GYN	Obstetrics / Gynecology
PCP	Primary Care Physician
PHO	Physician Hospital Organization
POS	Point of Service
PPO	Preferred Provider Organization
PSA	Primary Service Area
PSI	Patient Safety Indicator
RPO	Registration of Provider Organizations
SNF	Skilled Nursing Facility
TME	Total Medical Expenses

NAMING CONVENTIONS

Parties and Related Organizations	
APG	Affiliated Physicians Group
Anna Jaques	Anna Jaques Hospital
BIDCO	Beth Israel Deaconess Care Organization
BIDMC	Beth Israel Deaconess Medical Center
BIDPO	Beth Israel Deaconess Physician Organization
BID-Milton	Beth Israel Deaconess Hospital - Milton
BID-Needham	Beth Israel Deaconess Hospital - Needham
BID-Plymouth	Beth Israel Deaconess Hospital - Plymouth
CHA	Cambridge Health Alliance
CRMA	Charles River Medical Associates
HMFP	Harvard Medical Faculty Physicians at Beth Israel Deaconess Medical Center
Hospital LLC	BIDCO Hospital LLC
Lawrence General	Lawrence General Hospital
MWAHO	MetroWest Accountable Health Care Organization
MetroWest	VHS Acquisition Subsidiary Number 9, Inc., d/b/a MetroWest Medical Center
MWPS	MetroWest Physician Services
NEBCIO	New England Baptist Clinical Integration Organization
NEBH	New England Baptist Hospital
Physician LLC	BIDCO Physician LLC
Tenet	Tenet Healthcare Corporation
Payers	
BCBS	Blue Cross Blue Shield of Massachusetts
HPHC	Harvard Pilgrim Health Care
THP	Tufts Health Plan
Other Providers	
Atrius	Atrius Health
BMC	Boston Medical Center
BWH	Brigham and Women's Hospital
Children's Hospital	Boston Children's Hospital
Hallmark	Hallmark Health System
Lahey	Lahey Health System
Mt. Auburn	Mount Auburn Hospital
NEQCA	New England Quality Care Alliance
Newton-Wellesley	Newton-Wellesley Hospital
Partners	Partners HealthCare System
Signature Brockton	Signature Healthcare Brockton Hospital
Steward	Steward Health Care System
Tufts MC	Tufts Medical Center
UMass	UMass Memorial Health Care

EXECUTIVE SUMMARY

The Beth Israel Deaconess Care Organization (BIDCO) was founded by Beth Israel Deaconess Medical Center (BIDMC) and Beth Israel Deaconess Physician Organization, including Harvard Medical Faculty Physicians at BIDMC (HMFP). In the past three and a half years, an additional six hospitals and four large physician groups have become members of, and have started contracting through, BIDCO. BIDCO is now the second largest hospital contracting network in the state, among the largest physician contracting networks, and one of Massachusetts' largest accountable care organizations (ACOs).⁴ In the fall of 2015, BIDCO proposed adding two additional hospitals and certain affiliated physicians to its ACO and contracting network.

In September 2015, BIDCO and New England Baptist Hospital (NEBH), the Commonwealth's only orthopedic specialty hospital, executed affiliation agreements under which NEBH and its owned physician group, New England Baptist Clinical Integration Organization (NEBCIO), would become members of BIDCO.⁵ In October 2015, BIDCO entered into a similar agreement with MetroWest Medical Center (MetroWest),⁶ a community hospital owned by Tenet Healthcare Corporation, with campuses located in Framingham and Natick. As BIDCO members, NEBH, NEBCIO, and MetroWest would participate in BIDCO's clinical integration programs, and BIDCO would establish payer contracts on their behalf. In connection with joining BIDCO, MetroWest also entered into a clinical affiliation agreement in January 2016 with BIDMC and HMFP,⁷ whose presidents co-chair BIDCO's board of

⁴ BIDCO does not own its members. Rather, the BIDCO member hospitals and physician groups govern BIDCO and pay membership fees, and BIDCO establishes payer contracts on their behalf. See Section II.A and note 27, *infra*, for a full discussion of BIDCO's roles.

⁵ BETH ISRAEL DEACONESS CARE ORGANIZATION (BIDCO), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Oct. 2, 2015), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/20151002-bidco-nebh-nebcio.pdf>; NEW ENGLAND BAPTIST HOSPITAL (NEBH), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Oct. 2, 2015), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/20151002-nebh-bidco-nebcio.pdf>; NEW ENGLAND BAPTIST CLINICAL INTEGRATION ORGANIZATION (NEBCIO), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Oct. 2, 2015), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/20151002-nebcio-nebh-bidco.pdf> (collectively BIDCO-NEBH-NEBCIO NOTICE OF MATERIAL CHANGE).

⁶ BETH ISRAEL DEACONESS CARE ORGANIZATION (BIDCO), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Oct. 30, 2015), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/20151030-notice-of-material-change-bidco-mwmc.pdf>; VHS SUBSIDIARY NUMBER 9, INC. D/B/A METROWEST MEDICAL CENTER, NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Oct. 30, 2015), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/20151030-mwmc-notice-of-material-change.pdf> (collectively BIDCO-METROWEST NOTICE OF MATERIAL CHANGE).

⁷ BETH ISRAEL DEACONESS MEDICAL CENTER (BIDMC), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Jan. 14, 2016), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/20160114-bidmc-mw-hmfp.pdf>; HARVARD MEDICAL FACULTY PHYSICIANS (HMFP), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Oct. 2, 2015), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/20160115-hmfp-bidmc-mwmc-2.pdf>; VHS SUBSIDIARY NUMBER 9, INC. D/B/A METROWEST

directors. Under the clinical affiliation, the parties would collaborate on certain clinical programs and MetroWest would designate BIDMC and HMFP as its preferred referral partner for most tertiary and quaternary services.⁸

Following 30-day initial reviews, the HPC determined that these transactions and the resulting continued growth of the BIDCO network were likely to have a significant impact on costs and market functioning in Massachusetts and warranted further review.⁹ Due to the interrelated questions posed by the transactions, the similar timelines of our reviews, and a desire to minimize administrative burden, the HPC has elected to present its reviews of the transactions together. On July 27, 2016, the HPC issued a Preliminary Report presenting our analysis and key findings from our reviews.¹⁰ Following a 30-day opportunity for the parties to respond to these findings, the HPC now issues this Final Report. The parties' response to our findings is attached as Exhibit A (Parties' Response),¹¹ and the HPC's analysis of this response is attached as Exhibit B.

This report is organized into five parts. Part I outlines our analytic approach and the data we utilized. Part II describes the parties to these CMIRs and their goals and plans for undertaking the transactions. Parts III and IV then present our findings. Part III reports on the parties' baseline performance leading up to the transactions, and Part IV reports on the

MEDICAL CENTER, NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Oct. 2, 2015), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/20160114-metrowest-bidmc-hmfp-mcn.pdf> (collectively BIDMC-HMFP-METROWEST NOTICE OF MATERIAL CHANGE).

⁸ Tufts Medical Center (Tufts MC) would remain MetroWest's preferred tertiary referral partner for pediatric medicine.

⁹ See MASS. HEALTH POLICY COMM'N, MINUTES OF THE HEALTH POLICY COMM'N (Dec. 16, 2015), *available at* <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/public-meetings/board-meetings/20160120-commission-document-board-minutes-for-december-16-2015.pdf> (approving continuation of the Cost and Market Impact Reviews of the BIDCO-NEBH-NEBCIO contracting affiliation and BIDCO-MetroWest contracting affiliation); MASS. HEALTH POLICY COMM'N, MINUTES OF THE HEALTH POLICY COMM'N (Mar. 2, 2016), *available at* <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/public-meetings/board-meetings/20160302-board-minutes.pdf> (approving continuation of the Cost and Market Impact Review of the BIDMC-HMFP-MetroWest clinical affiliation).

¹⁰ MASS. HEALTH POLICY COMM'N, REVIEW OF BETH ISRAEL DEACONESS CARE ORGANIZATION'S PROPOSED CONTRACTING AFFILIATION WITH NEW ENGLAND BAPTIST HOSPITAL AND NEW ENGLAND BAPTIST CLINICAL INTEGRATION ORGANIZATION (HPC-CMIR-2015-1) AND BETH ISRAEL DEACONESS CARE ORGANIZATION'S PROPOSED CONTRACTING AFFILIATION AND BETH ISRAEL DEACONESS MEDICAL CENTER'S AND HARVARD MEDICAL FACULTY PHYSICIANS' PROPOSED CLINICAL AFFILIATION WITH METROWEST MEDICAL CENTER (HPC-CMIR-2015-2 AND HPC-CMIR-2016-1), PURSUANT TO M.G.L. C. 6D, § 13 PRELIMINARY REPORT (July 27, 2016), *available at* <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/material-change-notices-cost-and-market-impact-reviews/bidco-preliminary-cmir.pdf> [hereinafter Preliminary Report].

¹¹ RESPONSE ON BEHALF OF BETH ISRAEL DEACONESS CARE ORGANIZATION, BETH ISRAEL DEACONESS MEDICAL CENTER HARVARD MEDICAL FACULTY PHYSICIANS AT BETH ISRAEL DEACONESS MEDICAL CENTER, METROWEST MEDICAL CENTER, AND NEW ENGLAND BAPTIST HOSPITAL AND NEW ENGLAND BAPTIST CLINICAL INTEGRATION ORGANIZATION TO THE COST AND MARKET IMPACT REVIEW PRELIMINARY REPORT ISSUED BY THE HEALTH POLICY COMMISSION REGARDING HPC-CMIR-2015-1, HPC-CMIR-2015-2, AND HPC-CMIR-2016-1 (Aug. 19, 2016) [hereinafter Parties' Response].

projected impact of the proposed transactions on that baseline. We conclude in Part V. Below is a summary of the findings presented in Parts III and IV:

1. **Cost and Market Baseline Performance:** BIDCO has significant market share both statewide and in its local service areas, and it has grown rapidly in recent years. BIDCO is now the second largest hospital network in the state, although its commercial inpatient market share statewide is only slightly over one-third (36%) that of the largest provider system, Partners HealthCare System (Partners). NEBH has very large market share for orthopedic and musculoskeletal services, with its inpatient share of these services rivaling that of Partners. While MetroWest continues to be an important local provider, it has lost significant commercial volume in recent years. In the most recent available data, BIDCO, MetroWest, and NEBH/NEBCIO had low to mid-range hospital and physician prices and comparatively efficient medical spending. However, these data may not yet fully reflect the recent growth of the BIDCO network, and it will be important to continue to monitor the parties' prices and spending levels going forward.
2. **Care Delivery and Quality Baseline Performance:** All of the parties have sought to develop structures to support care delivery and quality improvement initiatives, although their approaches vary significantly, with BIDCO focused on supporting members' risk contract performance, NEBH focused on optimizing patient care processes, and MetroWest implementing targeted quality improvement programs using data analytics provided by its parent corporation. On most standard quality measures, both BIDCO hospitals and physician groups tend to be at or above the state's average performance, but performance across BIDCO hospitals and physician groups on individual measures varies significantly. NEBH performs exceptionally well on measures most relevant to its core orthopedic and musculoskeletal services, both compared to state averages and to the BIDCO hospitals. MetroWest generally performs close to the state average, with some strengths and weaknesses relative to BIDCO hospitals and local comparators.
3. **Access Baseline Performance:** The BIDCO community hospitals and MetroWest are important safety net providers for their communities, providing greater shares of services to Medicaid and Medicare patients than many other local community hospitals. In contrast, both BIDMC and NEBH serve lower proportions of government payer patients than most comparators, and NEBH provides a very low percentage of orthopedic and musculoskeletal services to Medicaid patients based on the most recent available data. MetroWest and some of the BIDCO community hospitals (e.g., Cambridge Health Alliance and Anna Jaques Hospital) are also significant providers of behavioral health services to their communities.
4. **Cost and Market Impact:** These transactions would increase market concentration and solidify BIDCO's position as the Commonwealth's second largest hospital network. The NEBH transaction would make BIDCO the state's largest provider network for certain inpatient orthopedic and musculoskeletal services, and the MetroWest transactions would expand the BIDCO network westward. These changes could strengthen BIDCO's ability to leverage higher prices and other favorable contract

terms in negotiations with commercial payers. As NEBCIO physicians join BIDCO contracts, we anticipate small to moderate increases to health care spending of up to \$4.5 million annually for the three largest commercial payers combined; changes in MetroWest physician prices are not anticipated to significantly impact spending. To the extent that BIDCO both retains its historically low to mid-range prices and is successful in redirecting volume from higher-priced systems to BIDCO hospitals and physician groups, there is the potential to reduce health care spending. However, BIDCO has had limited success to date in significantly redirecting commercially insured patients from higher-priced systems.

5. **Care Delivery and Quality Impact:** BIDCO's focus on supporting its members' risk contract performance has resulted in a set of targeted care delivery reform programs, but uniform quality improvement across BIDCO providers is not evident in the most recent available data. It is therefore not yet clear that joining BIDCO will result in measurable quality improvement for MetroWest, NEBH, or NEBCIO. NEBH's strong quality performance for orthopedic and musculoskeletal care suggests that BIDCO hospitals could benefit from adopting NEBH's care delivery systems, but the parties have not yet developed details of their plans for collaboration. While MetroWest's performance on most quality measures is already comparable to that of many BIDCO community hospitals, MetroWest's clinical affiliation with BIDMC and HMFP has the potential to improve patient experience and clinical quality for specific services that the parties have committed to enhance.
6. **Access Impact:** The parties have stated a commitment to increase access to NEBH's high-quality orthopedic and musculoskeletal care for Medicaid patients; however, the timeline for expanding Medicaid access is not yet clear. The service enhancements contemplated in the MetroWest transactions may increase access to certain needed services in MetroWest's service area. The parties have also stated a commitment to maintain MetroWest's status as an important provider of behavioral health services to the communities it serves.

In summary, we find that these transactions are anticipated to increase market concentration, solidify BIDCO's position as the second largest hospital network in the state, and could strengthen BIDCO's ability to leverage higher prices and other favorable contract terms. However, BIDCO's market share will remain far smaller than the dominant system in the state for most services. We also anticipate a small to moderate increase in spending (up to \$4.5 million annually) from changes to physician prices as the NEBCIO physicians shift to BIDCO rates.

To the extent that BIDCO retains its position as a low- to mid-priced provider network and is successful in redirecting care from higher-priced systems, there is some potential for savings. However, BIDCO has had limited success to date in significantly redirecting commercially insured patients from higher-priced systems. We also find that the MetroWest transactions may increase access to certain services, and that there is some potential for quality and care delivery improvement for both the NEBH and MetroWest transactions. The likelihood of such quality improvement will largely depend on the extent to which the parties capitalize

on their respective strengths and make sufficient resource commitments to execute on their stated plans.

Recognizing the potential for both positive and negative impacts from these transactions, the HPC finds ongoing monitoring of the parties' performance necessary, including the parties' progress on stated goals of the transactions.¹² The HPC will assess the parties' performance over time through its authority to monitor the health care market including, but not limited to, its authority to require specific written and oral testimony in connection with the HPC's annual cost trends hearings (M.G.L. c. 6D, § 8), to evaluate future transactions in light of the parties' historic performance (c. 6D, § 13), and to potentially require a performance improvement plan or cost and market impact review if a party is identified by CHIA as having excessive health care cost growth (c. 6D, § 10). However, based on our findings and the Parties' Response, the HPC declines to refer this report to the Attorney General's Office (AGO) pursuant to MASS. GEN. LAWS c. 6D.

¹² As the parties state, "It is certainly reasonable to expect that Parties will, in time, have more data to support their positions" that BIDCO membership and BIDMC clinical affiliations will lead to improved efficiency and quality performance, and that the proposed transactions will also yield positive results in these "impact domains." Parties' Response, Exh. A, at 6.

I. ANALYTIC APPROACH AND DATA SOURCES

A. ANALYTIC APPROACH TO CMIRS

In structuring a CMIR, we take the following steps. First, we identify the primary areas of impact for the HPC to study. MASS. GEN. LAWS ch. 6D, § 13 tasks the HPC with examining impact in three interrelated areas:¹³

1. **Costs and market functioning.** The statute directs the HPC to examine prices, total medical expenses, provider costs, and other measures of health care spending as well as market share, the provider's methods for attracting patient volume and health care professionals, and the provider's impact on competing options for care delivery.
2. **Quality.** The statute directs the HPC to examine the quality of services provided, including patient experience.
3. **Access.** The statute directs the HPC to examine the availability and accessibility of services provided; the provider's role in serving at-risk, underserved, and government payer patient populations; and the provider's role in providing low or negative margin services.

After identifying the primary areas for the HPC's review, we then gather detailed information in each of these areas. The HPC examines recent data to establish the parties' *baseline performance* and current trends in each of these areas prior to the transaction. The HPC then combines the parties' baseline performance with known details of the transaction, as well as the parties' goals and plans, to project the *impact of the transaction on baseline performance*. The analytic sections of this report are divided into two parts that mirror this framework: Part III addresses baseline performance and Part IV addresses impact analysis.

Within this general framework for CMIRs, the specific facts of a transaction, the availability of accurate data, and time constraints affect the particular analyses included in our review of any given material change. We also seek to focus our work on analyses that complement, rather than duplicate, the work of other agencies. Future CMIRs may encompass new and evolving analyses, depending on the facts of a transaction, recent market developments, areas of public interest, and the availability of improved data resources, like an expanded All-Payer Claims Database (APCD).¹⁴

B. DATA SOURCES

To conduct this review, we relied on the documents and data the parties produced to us in response to HPC information requests, and their own description of the transaction as presented in their material change notices. To further inform our review, the HPC utilized

¹³ The HPC may also examine consumer concerns and any other factors it determines to be in the public interest. MASS. GEN. LAWS ch. 6D, § 13(d)(xi)-(xii).

¹⁴ See *All-Payer Claims Database*, CTR. FOR HEALTH INFO. & ANALYSIS, <http://www.chiamass.gov/ma-apcd/> (last visited Sept. 6, 2016) (The APCD is comprised of medical, pharmacy, and dental claims, as well as information about member eligibility, benefit design, and providers for all payers covering Massachusetts residents).

information from the Registration of Provider Organizations program (RPO)¹⁵ and obtained data and documents from a number of other sources. These include state agencies such as the Massachusetts Attorney General’s Office (AGO) Non-Profit Organizations/Public Charities Division, from which we received audited financial statements for non-profit institutions relevant to our review, and the Center for Health Information and Analysis (CHIA), from which we received provider-level data, hospital discharge data, and claims-level data from the APCD; federal agencies such as the Agency for Healthcare Research and Quality (AHRQ) and the Centers for Medicare and Medicaid Services (CMS); private organizations that collect health care data such as Massachusetts Health Quality Partners (MHQP); payers such as Blue Cross Blue Shield of Massachusetts (BCBS), Harvard Pilgrim Health Care (HPHC), and Tufts Health Plan (THP); and health care providers operating in the same areas of the state as the parties. The HPC appreciates the cooperation of all entities that provided information in support of this review.

Where our analyses rely on nonpublic information produced by the parties or other market participants, MASS. GEN. LAWS ch. 6D, § 13 prohibits the HPC from disclosing such information without the consent of the producing entity, except in a preliminary or final CMIR report where “the commission believes that such disclosure should be made in the public interest after taking into account any privacy, trade secret or anti-competitive considerations.”¹⁶ Consistent with this statutory requirement, this Final Report contains only limited disclosures of such confidential information where the HPC has determined that the public interest in disclosure outweighs privacy, trade secret, and anti-competitive considerations.

To assist in our review and analysis of information, the HPC engaged consultants with extensive experience evaluating provider organizations and their impact on the health care market. Working with these experts, the HPC comprehensively analyzed the data and other materials detailed above.

For each analysis, the HPC utilized the most recent, reliable data available. Because data—whether publicly reported or privately held—is usually generated on a variable schedule from entity to entity, the most recent and reliable data generally reflects 2014 data and sometimes 2015 or 2013. This delay in data availability is noteworthy for the current CMIRs because some of the most recent available data predates more recent provider affiliations, particularly the more recent hospital and physician contracting affiliations with BIDCO. Thus we note throughout this report that it will be necessary to continue monitoring trends as new data become available. We have noted the applicable year for the underlying data throughout this report and, wherever possible, we examined multiple years of data to analyze trends and to report on the consistency of findings over time. For data and materials produced by the parties

¹⁵ MASS. GEN. LAWS ch. 6D, § 11 (requiring provider organizations to register biennially with the HPC and provide information on organizational structure and affiliations, and other requested information); *see also* 958 CODE MASS. REGS. §§ 6.00 (2014); *and* MASS. HEALTH POLICY COMM’N, REGISTRATION OF PROVIDER ORGANIZATIONS DATA SUBMISSION MANUAL (Jun. 2015), *available at* <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/registration-of-provider-organizations/initial-registration-part-2/data-submission-manual-hpc-rpo-2015-01.pdf>.

¹⁶ MASS. GEN. LAWS ch. 6D, § 13(c), *amended by* 2013 Mass. Acts 38, § 20.

and other market participants, the HPC tested the accuracy and consistency of the data collected to the extent possible, but also relied in large part on the producing party for the quality of the information provided.

Finally, several of our analyses focus on the anticipated cost impact in the commercially insured market. In the commercially insured market, prices for health care services—whether fee-for-service, global budgets, or other forms of alternative payments—are established through private negotiations between payers and providers. The terms of these payer-provider contracts vary widely, both with regard to price and other material terms that impact health care costs and market functioning.¹⁷ Within the commercial market, we focused our review on the three largest Massachusetts payers (BCBS, HPHC, THP), which together account for approximately three-quarters of the commercial market.¹⁸ For future reports, we hope to have access to more extensive data on the entire health care market through the APCD, RPO program, and other resources.

C. COMPARATORS

Some of our analyses compare BIDCO's existing hospitals and MetroWest to other hospitals operating in the same areas. These comparator hospitals, shown below, were identified based on geography, service offerings, and patient flow patterns, and are intended to reflect a set of hospitals that a local patient could reasonably choose as a substitute for the focal hospital:

- **Beth Israel Deaconess Hospital-Milton (BID-Milton) and Beth Israel Deaconess-Hospital-Plymouth (BID-Plymouth):** Brigham and Women's Faulkner Hospital, South Shore Hospital, Southcoast Hospitals Group, Steward Carney Hospital;
- **Beth Israel Deaconess Hospital-Needham (BID-Needham):** MetroWest, Mount Auburn Hospital (Mt. Auburn), Newton-Wellesley Hospital (Newton-Wellesley), Steward Norwood Hospital;
- **MetroWest Medical Center (Framingham Union Hospital and Leonard Morse Hospital)¹⁹:** BID-Needham, Marlborough Hospital, Milford Regional Medical Center, Newton-Wellesley;

¹⁷ See, e.g., OFFICE OF ATT'Y GEN. MARTHA COAKLEY, EXAMINATION OF HEALTH CARE COST TRENDS AND COST DRIVERS PURSUANT TO G.L. C. 118G, § 6 ½(b): REPORT FOR ANNUAL PUBLIC HEARING 40-43 (Mar. 16, 2010), available at <http://www.mass.gov/ago/docs/healthcare/2010-hcctd-full.pdf>; MASS. HEALTH POLICY COMM'N, 2015 COST TRENDS REPORT: PROVIDER PRICE VARIATION (Jan. 2016), available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/publications/2015-ctr-ppv.pdf>.

¹⁸ See CTR. FOR HEALTH INFO. & ANALYSIS, ANNUAL REPORT ON THE MASSACHUSETTS HEALTH CARE MARKET (Sept. 2015), at 20, available at <http://www.chiamass.gov/assets/2015-annual-report/2015-Annual-Report.pdf> (noting that in 2014 BCBS, HPHC, and THP accounted for 73% of commercial membership in Massachusetts). This report relies primarily on data from BCBS, HPHC, and THP, which we commonly refer to as the "three largest payers."

¹⁹ The two MetroWest campuses operate under a single hospital license, and as a result most of the data that we present on MetroWest are aggregated data for both campuses.

- **Anna Jaques Hospital (Anna Jaques), Cambridge Health Alliance (CHA), and Lawrence General Hospital (Lawrence General):** Hallmark Health System (Lawrence Memorial Hospital and Melrose-Wakefield Hospital), Lahey Hospital and Medical Center, North Shore Medical Center, Northeast Hospital System (Beverly Hospital and Addison Gilbert Hospital), Steward Holy Family Hospital, Winchester Hospital;
- **Beth Israel Deaconess Medical Center (BIDMC):** Boston Medical Center (BMC), Brigham and Women's Hospital (BWH), Massachusetts General Hospital (MGH), and Tufts Medical Center (Tufts MC).

II. OVERVIEW OF THE PARTIES AND THE TRANSACTIONS

In September 2015, Beth Israel Deaconess Care Organization (BIDCO) entered into agreements with New England Baptist Hospital (NEBH), a specialty orthopedic hospital located in Boston, and New England Baptist Clinical Integration Organization (NEBCIO), NEBH's affiliated physician organization. Under the agreements, NEBH and NEBCIO would become members of BIDCO, BIDCO would establish most payer contracts on behalf of NEBH and NEBCIO, and NEBH and NEBCIO would participate in BIDCO's clinical integration programs. Among the stated purposes of the transaction are the alignment of risk among the parties' hospital and physician providers, the implementation of shared orthopedic and musculoskeletal care management programs, shared data warehousing, and improved patient care quality and efficiency.²⁰

In October 2015, BIDCO entered into a similar agreement with MetroWest Medical Center (MetroWest), a two-campus hospital located in Framingham and Natick. Under the agreement, MetroWest would become a member of BIDCO, BIDCO would establish payer contracts on behalf of MetroWest, and MetroWest would participate in BIDCO's clinical integration programs. As with the NEBH transaction, the stated purpose of the BIDCO-MetroWest agreement is to align risk among the parties, implement shared care management programs and data warehousing, and improve patient quality and efficiency.²¹

In connection with the BIDCO-MetroWest affiliation, Beth Israel Deaconess Medical Center (BIDMC), the Boston academic medical center that serves as the tertiary anchor hospital for BIDCO, and Harvard Medical Faculty Physicians at Beth Israel Deaconess Medical Center (HMFP) entered into a clinical affiliation agreement with MetroWest in January 2016.²² BIDMC and HMFP are both founding members of BIDCO, and their presidents co-chair BIDCO's board of directors.²³ Under the agreement, BIDMC and HMFP would collaborate with MetroWest to expand and staff certain clinical programs at MetroWest, and MetroWest would designate BIDMC and HMFP as its preferred providers for most tertiary and quaternary services.²⁴ The stated purpose of the clinical affiliation is to improve the care for patients in the MetroWest community through the expansion of primary care, the expansion of surgical services, new joint clinical programs in OB/GYN and cancer care, and the co-recruitment of physicians.²⁵ The parties also state that they "intend to be further integrated and linked through [MetroWest's] participation in [BIDCO]," describing this as "an important component of the organizations' overall relationship."²⁶ Because of the close relationship between the contracting affiliation and clinical affiliation, we refer to these transactions jointly at some points in this report as the MetroWest transactions.

²⁰ BIDCO-NEBH-NEBCIO NOTICE OF MATERIAL CHANGE, *supra* note 5.

²¹ BIDCO-METROWEST NOTICE OF MATERIAL CHANGE, *supra* note 6.

²² BIDMC-HMFP-METROWEST NOTICE OF MATERIAL CHANGE, *supra* note 7.

²³ *Beth Israel Deaconess Care Organization: 2016 Board of Managers*, BETH ISRAEL DEACONESS CARE ORGANIZATION, <http://www.bidco.org/aboutus/2016%20BIDCO%20BOM%203.pdf> (last visited Sept. 6, 2016).

²⁴ Tufts MC would remain MetroWest's preferred tertiary provider for pediatric medicine.

²⁵ BIDMC-HMFP-METROWEST NOTICE OF MATERIAL CHANGE, *supra* note 7.

²⁶ *See id.*

The remainder of this section describes each of the parties and the transactions in greater detail in order to provide background information for our analyses of the potential impacts of the transactions.

A. BETH ISRAEL DEACONESS CARE ORGANIZATION

BIDCO is a provider organization that operates clinical integration programs and contracts on behalf of its members, the majority of which are not corporately affiliated. BIDCO describes itself as “a value-based physician and hospital network and an Accountable Care Organization” that offers “physician groups and hospitals the structure to contract, share risk, and build care management systems together, with the goal of providing the highest quality care in the most cost-efficient way.”²⁷

What Are ACOs?

Accountable care organizations (ACOs) are groups of providers who have agreed to be accountable for the overall cost and quality of care for a specific patient population. Accountability is achieved through contracts with payers under which the ACO can earn payments by meeting or exceeding performance benchmarks. For example, an ACO and a payer may agree to a budget intended to cover the total cost of care for the payer’s members cared for by the ACO’s primary care providers. If the ACO can keep total spending below this level, the resulting “surplus” may be shared between the payer and the ACO. Conversely, if total spending exceeds the budgeted level, the ACO may owe a deficit payment to the payer. ACOs and payers generally also agree to a set of quality performance standards that impact their shared surplus or deficit. The terms under which ACOs may receive a surplus or owe a deficit payment vary considerably across different contracts with different payers.

Nationally, the concept of ACOs gained significant traction in 2010, when the Affordable Care Act established a new program for ACOs to care for Medicare beneficiaries. Under the newly created Center for Medicare and Medicaid Innovation, the Medicare program began developing new payment models for ACOs, as well as standards that providers were required to meet in order to participate in these new models. Currently, providers may participate in one of several payment models, including the Medicare Shared Savings Program,²⁸ the Pioneer ACO Model,²⁹ and the Next Generation ACO Model.³⁰ Massachusetts

²⁷ See *About Us*, BETH ISRAEL DEACONESS CARE ORGANIZATION, <http://www.bidpo.org/aboutus/index.html> (last visited Sept. 6, 2016). The parties’ response similarly describes BIDCO as “an [ACO] comprised of and governed by physicians and hospitals on a membership basis. Members pay dues to use BIDCO as a vehicle to share risk, exchange information, manage cost and quality, coordinate care, and contract with payers.” Parties’ Response, Exh. A, at 2.

²⁸ *Shared Savings Program*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/index.html?redirect=/sharedsavingsprogram/> (last visited Sept. 6, 2016).

²⁹ *Pioneer ACO Model*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://innovation.cms.gov/initiatives/Pioneer-ACO-Model/index.html> (last visited Sept. 6, 2016).

providers have had a strong presence in the Medicare ACO models. As of 2016, 13 Massachusetts ACOs were participating in one of the three Medicare ACO models.³¹ ACOs have also formed to participate in contracts with state Medicaid programs and commercial payers; approximately 744 ACOs formed across the country from 2011 to 2015, covering 23.5 million lives, of which 7.8 million were covered through Medicare ACO programs.³² In 2016, an additional 121 organizations began participating in Medicare ACOs.³³ The United States Department of Health and Human Services has set a goal of tying 50% of Medicare fee-for-service payments to ACOs and other value-driven payment models by 2018.³⁴

Massachusetts providers and commercial payers were early adopters of the ACO model, due in part to the 2009 development of the BCBS Alternative Quality Contract, which employs a global budget under which providers can share in savings and are responsible for a portion of any deficit.³⁵ As of 2014, approximately 38% of commercially insured individuals in the Commonwealth were covered by plans that employed global budget arrangements, an increase from approximately 33% in 2012.³⁶ Importantly, ACO contracts with commercial payers are negotiated, and, like contracts for fee-for-service payment, are subject to market forces including the relative negotiating leverage of the payer and ACO.

There is significant variation in the configuration and design of ACOs. For example, an ACO may be a physician organization, a physician-hospital organization, or an integrated

³⁰ *Next Generation ACO Model*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://innovation.cms.gov/initiatives/Next-Generation-ACO-Model/index.html> (last visited Sept. 6, 2016).

³¹ Eight Massachusetts ACOs are currently participating in the Medicare Shared Savings Program (MSSP) run by CMS. See *2016 Medicare Shared Savings Program Accountable Care Organizations – Map*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://data.cms.gov/ACO/2016-Medicare-Shared-Savings-Program-Accountable-C/i683-k66m> (last visited Sept. 6, 2016). Three Massachusetts ACOs are participating in the Pioneer model and two are participating in the Next Generation model, both of which are run by Center for Medicare and Medicaid Innovation (CMMI). See *Pioneer ACO Model*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://innovation.cms.gov/initiatives/Pioneer-ACO-Model/> and *Next Generation ACO Model*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://innovation.cms.gov/initiatives/Next-Generation-ACO-Model/> (both last visited Sept. 6, 2016).

³² David Muhlestein, *Growth and Dispersion of Accountable Care Organizations in 2015*, HEALTH AFFAIRS BLOG, <http://healthaffairs.org/blog/2015/03/31/growth-and-dispersion-of-accountable-care-organizations-in-2015-2/> (Mar. 31, 2015).

³³ *New hospitals and health care providers join successful, cutting-edge federal initiative that cuts costs and puts patients at the center of their care*, CTRS. FOR MEDICARE & MEDICAID SERVS. (Jan. 11, 2016), <http://www.hhs.gov/about/news/2016/01/11/new-hospitals-and-health-care-providers-join-successful-cutting-edge-federal-initiative.html> (counting “A total of 477 ACOs across SSP, Pioneer ACO Model, Next Generation ACO Model, and Comprehensive ESRD Care Model,” serving nearly 8.9 million Medicare beneficiaries).

³⁴ *Better, Smarter, Healthier: In historic announcement, HHS sets clear goals and timeline for shifting Medicare reimbursements from volume to value*, U.S. DEP’T. OF HEALTH AND HUMAN SERVS. (Jan. 26, 2016), <http://www.hhs.gov/about/news/2015/01/26/better-smarter-healthier-in-historic-announcement-hhs-sets-clear-goals-and-timeline-for-shifting-medicare-reimbursements-from-volume-to-value.html>.

³⁵ Zirui Song, et al., *Changes in Health Care Spending and Quality 4 Years into Global Payment*, 371 N. ENG. J. MED. 1704, 1705 (Oct. 30, 2014).

³⁶ CTR. FOR HEALTH INFO. & ANALYSIS, *ALTERNATIVE PAYMENT METHODS*, <http://www.chiamass.gov/alternative-payment-methods-2/> (last visited Sept. 6, 2016).

delivery system.³⁷ Participating providers may be corporately integrated or remain corporately distinct while jointly negotiating contracts with payers to take on cost and quality management responsibility together. Regardless of structure, however, ACOs need certain characteristics and capabilities in order to manage cost and quality effectively, such as caring for a sufficiently large patient population and employing tools to track and report on participating providers' quality and efficiency.³⁸ As the number and variety of ACOs proliferate, independent research and policy organizations,³⁹ public payers (such as Medicare), and other government agencies⁴⁰ are developing standards to identify and define these necessary capabilities.

BIDCO is not a corporately integrated system: rather than owning its members, BIDCO is owned and governed by its member hospitals and physicians through two corporate organizations, BIDCO Hospital, LLC (Hospital LLC) and BIDCO Physician, LLC (Physician LLC).⁴¹ BIDCO's hospital members appoint representatives to Hospital LLC and its physician group members appoint representatives to Physician LLC. The LLCs in turn appoint members to BIDCO's board of directors, and have an equal vote on matters before the board. Members of BIDCO pay membership fees to fund the organization.

BIDCO was formed in 2012 by Beth Israel Deaconess Physician Organization (BIDPO), including HMFP, and BIDMC.⁴² Since then, six hospitals and four physician groups have joined BIDCO. These include Beth Israel Deaconess Hospital-Needham (BID-Needham) (joined in early 2014); Beth Israel Deaconess Hospital-Milton (BID-Milton) (joined in early 2014); Cambridge Health Alliance (CHA) and its affiliated physician group the Cambridge Health Alliance Physician Organization (joined in early 2014); Jordan Hospital, now Beth Israel Deaconess Hospital-Plymouth (BID-Plymouth), and its affiliated physician group Jordan Physician Associates (joined in early 2014); Anna Jaques Hospital (Anna Jaques) in Newburyport and its affiliated physician group Whittier IPA (joined in 2014); PMG Physician

³⁷ See generally Stephen M. Shortell, et al., *A Taxonomy of Accountable Care Organizations for Policy and Practice*, 49 HEALTH SERVS. RESEARCH 1883 (Sept. 23, 2014), <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4254130/>.

³⁸ BROOKINGS INSTITUTION: ACCOUNTABLE CARE ORGANIZATION LEARNING NETWORK, ACO TOOLKIT at 9 (Jan. 2011), available at <https://xteam.brookings.edu/bdacoln/Documents/ACO%20Toolkit%20January%202011.pdf>.

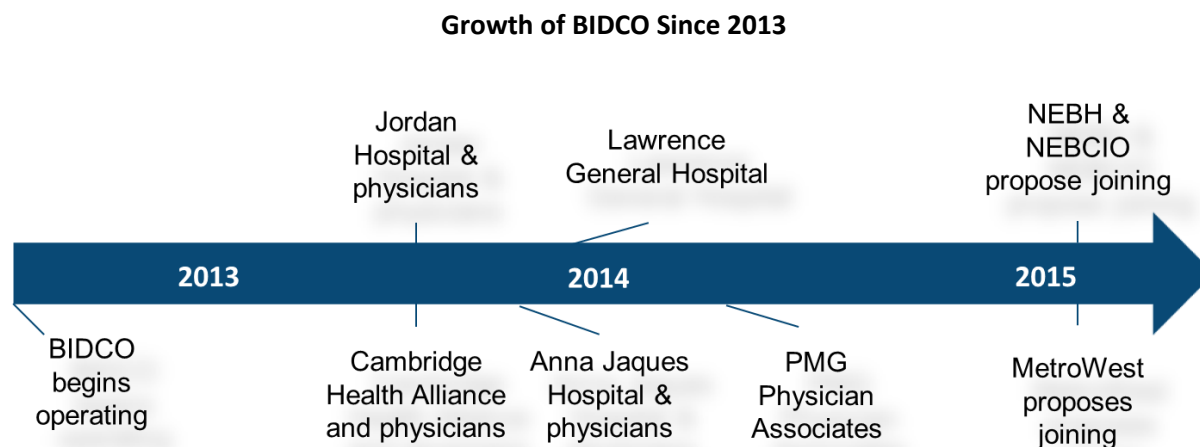
³⁹ See, e.g., Amanda J. Forster, et al., THE COMMONWEALTH FUND, *Accountable Care Strategies: Lessons from the Premier Health Care Alliance's Accountable Care Collaborative* (Aug. 2012), available at http://www.commonwealthfund.org/~media/files/publications/fund-report/2012/aug/1618_forster_accountable_care_strategies_premier.pdf.

⁴⁰ Pursuant to Chapter 224, the Health Policy Commission has designed an ACO certification program that identifies capabilities required of all ACOs. See MASS. HEALTH POLICY COMM'N, FINAL ACCOUNTABLE CARE ORGANIZATION (ACO) CERTIFICATION STANDARDS FOR CERTIFICATION YEAR 1 (Apr. 2016) [hereinafter HPC ACO CERTIFICATION STANDARDS], available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/certification-programs/aco-certification-final-criteria-and-requirements.pdf>.

⁴¹ BETH ISRAEL DEACONESS CARE ORGANIZATION, *Overview of Beth Israel Deaconess Care Organization*, presentation to the Boston Bar Association (Jan. 7, 2016).

⁴² See BETH ISRAEL DEACONESS CARE ORGANIZATION, Pre-Filed Written Testimony of Beth Israel Deaconess Care Org., Response to Exh. B, available at <http://www.mass.gov/anf/docs/hpc/bidco-written-testimony-response-exhibit-b-9-27-13.pdf>; Callum Borchers, *Beth Israel Shifts to Accountable Care System*, BOSTON GLOBE, (Jan. 9, 2013), available at <https://www.bostonglobe.com/business/2013/01/09/beth-israel-launches-accountable-care-organization/FQI3kaJB0dOmYSb3WVGaBJ/story.html>.

Associates (joined in 2014); and Lawrence General Hospital (Lawrence General) (joined in 2014).⁴³



BIDCO now includes seven hospitals and more than 2,500 physicians.⁴⁴ As described in more detail in Section III.A.1, BIDCO member hospitals (BIDCO hospitals) now account for the second largest share of commercial discharges in the Commonwealth, slightly more than one-third of the share of Partners hospitals, and BIDCO member physicians (BIDCO physicians) account for the fourth largest share of primary care visits in the state.

⁴³ BETH ISRAEL DEACONESS CARE ORGANIZATION (BIDCO), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM’N (Aug. 1, 2013), AS REQUIRED UNDER MASS. GEN. LAWS. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/bidco-cha-notice-of-material-change-bidco.pdf>; BETH ISRAEL DEACONESS CARE ORGANIZATION (BIDCO), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM’N (Aug. 8, 2013), AS REQUIRED UNDER MASS. GEN. LAWS. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/bidco-jordan-mcn.pdf>; BETH ISRAEL DEACONESS CARE ORGANIZATION (BIDCO), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM’N (Feb. 28, 2014), AS REQUIRED UNDER MASS. GEN. LAWS. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/bidco-hpc-notice-02-28-2014.pdf>; BETH ISRAEL DEACONESS CARE ORGANIZATION (BIDCO), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM’N (May 7, 2014), AS REQUIRED UNDER MASS. GEN. LAWS. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/bidco-lgh-hcp-notice-5-6-14.pdf>; BETH ISRAEL DEACONESS CARE ORGANIZATION (BIDCO), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM’N (July 28, 2014), AS REQUIRED UNDER MASS. GEN. LAWS. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/beth-israel-deaconess-care-organization-mcn.pdf>; BIDCO-NEBH-NEBCIO NOTICE OF MATERIAL CHANGE, *supra* note 5; BIDCO-METROWEST NOTICE OF MATERIAL CHANGE, *supra* note 6.

⁴⁴ *See About Us*, BETH ISRAEL DEACONESS CARE ORGANIZATION, <http://www.bidco.org/aboutus/index.html> (last visited Sept. 6, 2016) (updated August 5, 2016, stating that BIDCO included more than 2,500 physicians).

Current BIDCO Hospital and Physician Members

BIDCO Hospital Members	City/Town	CHIA Hospital Cohort	# Staffed Beds
Beth Israel Deaconess Medical Center (BIDMC)	Boston	AMC	703
Cambridge Health Alliance (CHA)	Cambridge, Somerville, and Everett	Teaching ⁴⁵	230
Lawrence General Hospital	Lawrence	Community DSH	230
Beth Israel Deaconess Hospital-Plymouth (BID-Plymouth)	Plymouth	Community DSH	172
Anna Jaques Hospital	Newburyport	Community	140
Beth Israel Deaconess Hospital-Milton (BID-Milton)	Milton	Community	58
Beth Israel Deaconess Hospital-Needham (BID-Needham)	Needham	Community	31

BIDCO Physician Group Members	# Physicians
Harvard Medical Faculty Physicians at BIDMC (HMFP)	1202
Affiliated Physicians Inc.	342
Cambridge Health Alliance Physician Organization	400
Lawrence General IPA (d/b/a Choice Plus PHO)	137
Whittier IPA	94
Jordan Physician Associates	56
Joslin Clinic Physicians	53
Milton Physician Organization	47
PMG Physician Associates	22
Charles River Medical Associates (Pioneer ACO participant only)	50

Sources: *Who Participates in BIDCO?*, BETH ISRAEL DEACONESS CARE ORGANIZATION, <http://www.bidpo.org/aboutus/whoparticipates.asp> (last visited Sept. 6, 2016); hospital information from CHIA HOSPITAL PROFILES DATABOOK, *infra* note 131; physician counts based on information provided by BIDCO to the HPC's RPO program

⁴⁵ Some teaching hospitals provide advanced clinical services more similar to AMCs, and share other features with AMCs (e.g., referral, pricing, and service mix patterns), while others provide a range of services and share features more similar to those of community hospitals. See MASS. HEALTH POLICY COMM'N, COMMUNITY HOSPITALS AT A CROSSROADS at 3, n. 3 (Mar. 2016), available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/publications/community-hospitals-at-a-crossroads.pdf>. Because CHA functions in many ways more like a community hospital (e.g., sharing similar pricing and patient mix patterns), for our purposes we include it in our discussions of "BIDCO community hospitals" throughout this report except where specifically noted.

BIDCO establishes contracts on behalf of its members with both government and commercial payers.⁴⁶ For Medicare business, BIDCO is one of nine national participants in CMS's Pioneer ACO Program.⁴⁷ For commercial, managed Medicare, and managed Medicaid business, BIDCO establishes both risk and non-risk contracts on behalf of its members, including with the three largest commercial payers in the Commonwealth (for its hospitals and physicians) and some of the smaller commercial payers (for its physicians only).⁴⁸

BIDCO negotiates rates and other contract terms on behalf of its hospital and physician members for certain commercial risk and non-risk contracts; BIDCO physician members receive a uniform rate while hospital rates vary across the organization. BIDCO groups hospitals and primary care providers into "Risk Units" that share in surpluses or deficits under risk contracts based on cost and quality performance in order to incentivize improved performance.⁴⁹ BIDCO provides members with information sharing and clinical integration structures designed to support risk contract success, including data gathering and analysis, and care management programs focused on improving quality and efficiency for specific risk patient populations.⁵⁰

BIDCO also employs a "messenger model" of negotiation to establish individual risk and non-risk contracts for new BIDCO member hospitals. BIDCO negotiates renewal dates for these contracts that coincide with the renewal of BIDCO network-wide contracts with those payers, as discussed above, at which time those hospitals join the BIDCO network-wide contracts.⁵¹ Under messenger model contracting, a single agent (in this case BIDCO) negotiates with payers on behalf of each member individually for that member's contracts. The agent then forwards the resulting payer offers to participating members and the members have the option to accept or reject the offer. If a member rejects an offer, it may negotiate directly with the payer.⁵²

⁴⁶ See *Information for Patients*, BETH ISRAEL DEACONESS CARE ORGANIZATION, <https://bidpo.org/infoforpatients/index.asp> (last visited Sept. 6, 2016) ("Network-wide contracts with public and private payers promote our ability to work as an integrated delivery system").

⁴⁷ See *Pioneer ACO Model*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://innovation.cms.gov/initiatives/Pioneer-aco-model/> (explaining the Pioneer ACO Model for Medicare risk sharing) (last visited Sept. 6, 2016). BIDCO is one of three Pioneer ACOs in Massachusetts, along with Atrius and Partners HealthCare. In 2015, the most recent year for which data are available, BIDCO had 56,410 Medicare beneficiaries attributed to its Pioneer program, an increase of approximately 63% from 2014. By comparison in 2015, Atrius had 25,942 attributed beneficiaries, and Partners had 84,854. BIDPO first became a participant in the Pioneer ACO program in 2011. *Pioneer ACO Model FAQs*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://innovation.cms.gov/initiatives/Pioneer-ACO-Model/Pioneer-ACO-FAQs.html> (last visited Sept. 6, 2016); *Selected Participants in the Pioneer ACO Model*, CTRS. FOR MEDICARE & MEDICAID SERVS. (May 24, 2012), available at <https://innovation.cms.gov/Files/x/Pioneer-ACO-Model-Selectee-Descriptions-document.pdf>.

⁴⁸ See Parties' Response, Exh. A, at 11.

⁴⁹ MASS. HEALTH POLICY COMM'N, Annual Cost Trends Hearing (2015), Pre-Filed Written Testimony of Beth Israel Deaconess Care Org., Response to Exh. B, Q.1.b (Sept. 11, 2015) [hereinafter BIDCO 2015 Cost Trends Testimony], available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/annual-cost-trends-hearing/2015/2015-pre-filed-testimony-bidco.pdf>.

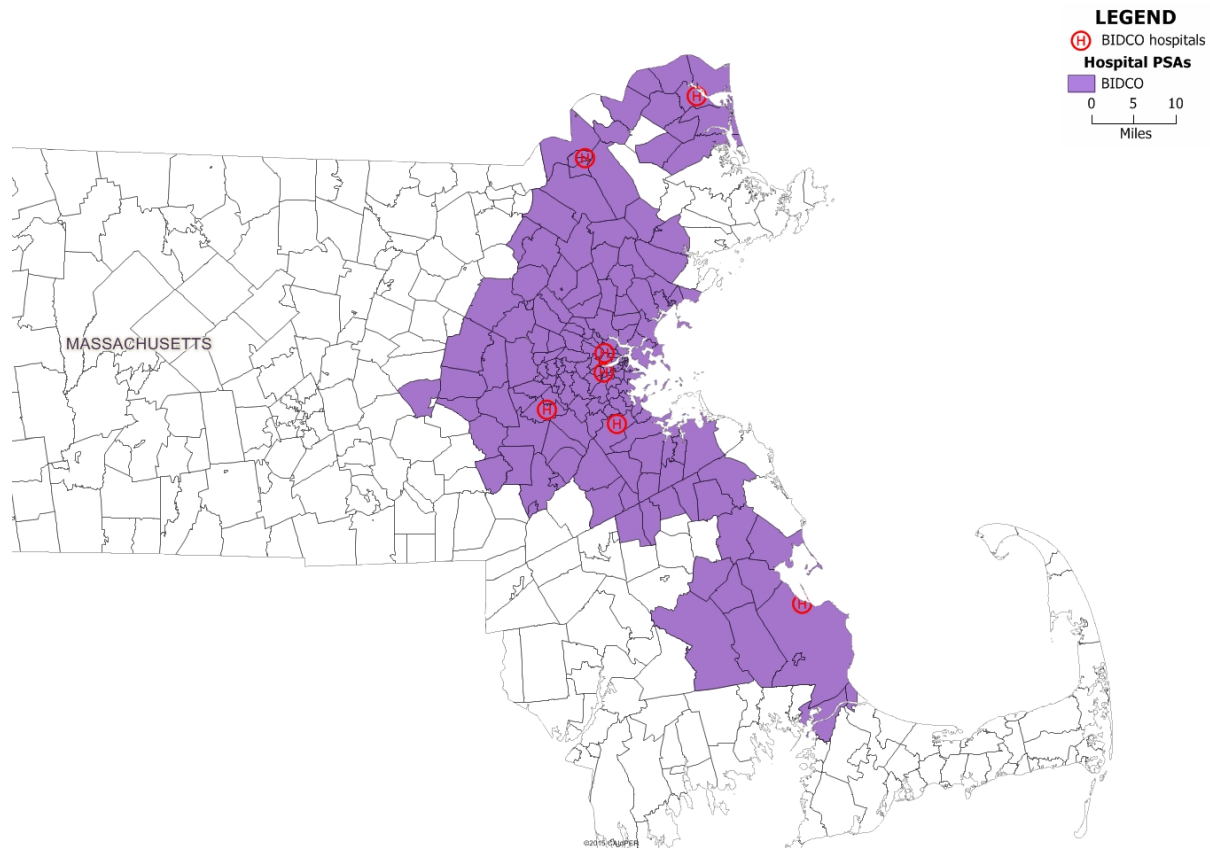
⁵⁰ See Section III.B.1 for a more detailed summary of BIDCO's care delivery support structures.

⁵¹ See Parties' Response, Exh. A, at 11.

⁵² BIDCO is not unique in using the "messenger model" of negotiation; the HPC understands that a number of major contracting networks in Massachusetts also use this model. The FTC and DOJ describe the messenger

The map below shows the location and combined inpatient primary service areas (PSAs)⁵³ of the acute care hospitals that are members of BIDCO.

BIDCO Hospitals and Inpatient Service Areas



B. BETH ISRAEL DEACONESS MEDICAL CENTER

Founded in 1996 by the merger of Beth Israel Hospital and Deaconess Hospital, BIDMC is a large non-profit academic medical center (AMC) located in Boston.⁵⁴ BIDMC has

model as the use of “an agent or third party to convey to purchasers information obtained individually from the providers about the prices or price-related terms that the providers are willing to accept” designed “to facilitate contracting between providers and payers and avoid price-fixing agreements among competing network providers. Arrangements that are designed simply to minimize the costs associated with the contracting process, and that do not result in a collective determination by the competing network providers on prices or price-related terms, are not per se illegal price fixing.” U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, STATEMENTS OF ANTITRUST ENFORCEMENT POLICY IN HEALTH CARE, STATEMENT 9.C (1996), <https://www.justice.gov/atr/statements-antitrust-enforcement-policy-health-care> (last visited Sept. 6, 2016). There is a difference of opinion among legal scholars about the market implications of messenger model contracting.

⁵³ The HPC generally defines an inpatient hospital PSA to be the contiguous area closest to a hospital from which the hospital draws 75% of its commercial discharges. *See infra* note 109.

⁵⁴ *The History of BIDMC: Merger*, BETH ISRAEL DEACONESS MEDICAL CENTER, <http://www.bidmc.org/About-BIDMC/The-History-of-BIDMC.aspx> (last visited Sept. 6, 2016); CTR. FOR HEALTH INFO. & ANALYSIS,

703 staffed beds, making it the fifth largest acute care hospital in Massachusetts.⁵⁵ BIDMC also owns three community hospitals:

- BID-Needham, a 31-bed hospital acquired in 2002⁵⁶
- BID-Milton, a 58-bed hospital acquired in 2012⁵⁷
- BID-Plymouth, a 172-bed hospital acquired in 2014⁵⁸

In total, BIDMC owns 964 staffed beds across eastern Massachusetts. BIDMC also owns two physician practices: Jordan Physicians Associates (56 physicians) and Affiliated Physicians Group (APG) (129 physicians).⁵⁹ APG operates primary care practices in BIDMC's community hospital service areas.

BIDMC is the fifth largest provider system⁶⁰ in Massachusetts by total net patient service revenue (NPSR) across all of its owned entities,⁶¹ and its financial performance compares favorably to other major provider systems in Massachusetts.⁶² BIDMC is also a

HOSPITAL PROFILE: BETH ISRAEL DEACONESS MEDICAL CENTER (Nov. 2015) [hereinafter BIDMC HOSPITAL PROFILE], available at

<http://www.chiamass.gov/assets/docs/r/hospital-profiles/2014/bi-deac.pdf>.

⁵⁵ BIDMC HOSPITAL PROFILE, *supra* note 54.

⁵⁶ *About Beth Israel Deaconess Hospital-Needham*, BETH ISRAEL DEACONESS HOSPITAL-NEEDHAM, <http://www.bidneedham.org/about> (last visited Sept. 6, 2016); *Massachusetts Hospitals: Closures, Mergers, Acquisitions and Affiliations*, MASS. HOSP. ASSOC., <http://www.mhalink.org/Content/NavigationMenu/AboutMHA/HospitalDirectory/HospitalClosuresMergersAcquisitionsandAffiliations/default.htm> (last visited Sept. 6, 2016).

⁵⁷ CTR. FOR HEALTH INFO. & ANALYSIS, HOSPITAL PROFILE: BETH ISRAEL DEACONESS MILTON (Nov. 2015), available at <http://www.chiamass.gov/assets/docs/r/hospital-profiles/2014/bid-milton.pdf>.

⁵⁸ BETH ISRAEL DEACONESS CENTER (BIDMC), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (July 29, 2013), AS REQUIRED UNDER MASS. GEN. LAWS. 6D § 13 [hereinafter BIDMC-JORDAN NOTICE OF MATERIAL CHANGE], available at <http://www.mass.gov/anf/docs/hpc/material-change-notices/beth-israel-deaconess-jordan-hospital.pdf>.

⁵⁹ Information provided by BIDCO to the HPC's RPO program. APG's legal name is Medical Care of Boston Management Corporation.

⁶⁰ As discussed in note 107, *infra*, we use the term "provider system" in this report when discussing organizations which are predominately corporately integrated, whereas we refer to BIDCO as a "provider network" because its members are predominantly corporately independent of each other.

⁶¹ The HPC reviewed audited financial statements from 2012 through 2014 for six of the seven largest provider systems in Massachusetts, measured by NPSR in 2014. These were, in descending order, Partners, Atrius Health, UMass Memorial Health Care, Inc. (UMass), Steward Health Care System LLC (Steward), BIDMC, Lahey Health System, Inc. (Lahey), and Tufts Medical Center Parent, Inc. (now part of Wellforce). These financial statements are available from the Charities Division of the Massachusetts AGO at *Non-Profits & Charities Document Search*, OFFICE OF ATT'Y. GEN. MAURA HEALEY, <http://www.charities.ago.state.ma.us/> (last visited Sept. 6, 2016). Audited financial statements were not available from Steward; the HPC therefore reviewed financial information on Steward published by the AGO as part of its assessment and monitoring efforts. See OFFICE OF ATT'Y. GEN. MAURA HEALEY, REPORTS ON STEWARD HEALTH CARE SYSTEM PURSUANT TO 2010 AND 2011 ASSESSMENT & MONITORING AGREEMENTS 33-38 (Dec. 30, 2015), available at <http://www.mass.gov/ago/docs/healthcare/shcs-report-123015.pdf>.

⁶² BIDMC's operating margin for fiscal years 2012 through 2014 averaged 1.9%, second only to that of Lahey. BIDMC's NPSR has increased substantially (\$1.52 million to \$1.76 million between 2013 and 2014), and it has a healthy reserve of cash and short-term investments and a current ratio generally stronger than that of the other major Massachusetts provider systems. See KPMG LLP, Consolidated Financial Statements and Other Financial Information: Beth Israel Deaconess Medical Center, Inc. and Affiliates (Dec. 17, 2014).

member of CareGroup, along with Mt. Auburn and NEBH.⁶³ CareGroup is a corporate entity under which its affiliates jointly borrow funds and purchase services, but do not jointly contract with payers or share centralized operations.⁶⁴

As one of the Commonwealth's major academic medical centers, BIDMC has clinical affiliations with many providers throughout the state. BIDMC is the preferred referral partner for tertiary and quaternary services for all of BIDCO's community hospitals and provides clinical support across many of their specialty service lines. BIDMC also collaborates clinically with Signature Healthcare Brockton Hospital on select specialty services and residency programs,⁶⁵ and has a close relationship with Atrius Health (Atrius), the state's largest independent physician group. BIDMC and Atrius have been affiliated since 2010, and currently share patient records electronically, develop and refine joint quality improvement and care coordination initiatives, and operate a joint venture urgent care center in Norwood staffed by HMFP physicians.⁶⁶ BIDMC is also one of Atrius' preferred referral partners for tertiary and quaternary services.⁶⁷

NEBH, BIDMC, and HMFP have been clinically affiliated since 2014, when they began developing a joint musculoskeletal care delivery system, anchored by a joint venture.⁶⁸ The goals of the affiliation included creating a broader network of NEBH-branded musculoskeletal care, integrating HMFP into NEBH's medical staff, and future development of a new NEBH hospital facility, co-located with or near the BIDMC campus, staffed by both parties.⁶⁹ Thus far, the parties have developed an operational redesign plan for musculoskeletal services at BIDMC focused on implementing key elements of the NEBH model of care, and have adopted common quality goals, performance measurement systems, and shared clinical protocols.

⁶³ See *CareGroup: Parent Company*, BETH ISRAEL DEACONESS MEDICAL CENTER, <http://www.bidmc.org/About-BIDMC/Affiliates-and-Partnerships/CareGroup.aspx> (last visited Sept. 6, 2016).

⁶⁴ *Id.*

⁶⁵ See *Signature Healthcare and Beth Israel Deaconess Medical Center Sign Clinical Affiliation Agreement*, SIGNATURE HEALTHCARE, http://www.signature-healthcare.org/News/News/Signature_Healthcare_and_Beth_Israel_Deaconess_Med_95.aspx (last visited Sept. 6, 2016).

⁶⁶ See *Hospital and Physician Practice Affiliations*, BETH ISRAEL DEACONESS MEDICAL CENTER, <http://www.bidmc.org/about-bidmc/affiliates-and-partnerships/hospital-and-physician-practice-affiliations.aspx> (last visited Sept. 6, 2016); "Advanced" Urgent Care Center Opens in Norwood, BETH ISRAEL DEACONESS MEDICAL CENTER, <http://www.bidmc.org/News/PRLandingPage/2014/February/DMAUrgentCare.aspx> (last visited Sept. 6, 2016).

⁶⁷ See *Our Affiliated Hospitals*, ATRIUS HEALTH, <http://www.atriushealth.org/about-us/our-care-network/our-affiliated-hospitals> (last visited Sept. 6, 2016).

⁶⁸ BETH ISRAEL DEACONESS MEDICAL CENTER (BIDMC), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Mar. 18, 2014), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, available at <http://www.mass.gov/anf/docs/hpc/material-change-notices/hpc-notice-of-material-change-form-bidmc.pdf>; HARVARD MEDICAL FACULTY PHYSICIANS (HMFP), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Mar. 18, 2014), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, available at <http://www.mass.gov/anf/docs/hpc/material-change-notices/hpc-notice-of-material-change-hmfp-bidmc-nebh-strategic-relationship-agreement.pdf>; NEW ENGLAND BAPTIST HOSPITAL, NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Mar. 18, 2014), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, available at <http://www.mass.gov/anf/docs/hpc/material-change-notices/hpc-notice-of-material-change-form-nebh.pdf>.

⁶⁹ *Id.*

C. HARVARD MEDICAL FACULTY PHYSICIANS AT BIDMC

HMFP is a physician group that employs physicians at BIDMC and its affiliates.⁷⁰ HMFP consists of approximately 1202 physicians, including approximately 212 primary care physicians.⁷¹ HMFP has an exclusive affiliation agreement with BIDMC for patient care, research and teaching services, and comprises the majority of medical staff at BIDMC.⁷² HMFP also employs the physicians who staff APG's primary care practices, and provides some specialty services to BIDMC's clinical affiliates.

D. NEW ENGLAND BAPTIST HOSPITAL AND NEW ENGLAND BAPTIST CLINICAL INTEGRATION ORGANIZATION

NEBH is a non-profit specialty hospital located in Boston.⁷³ It has 95 staffed beds and specializes in the treatment of orthopedic and musculoskeletal conditions; it is the only orthopedic specialty hospital in Massachusetts.⁷⁴ It is a teaching affiliate of Tufts University School of Medicine, Harvard School of Public Health, and the Harvard School of Medicine.⁷⁵ In addition to its main hospital, NEBH operates three licensed outpatient facilities: New England Baptist Outpatient Surgery Satellite in Dedham, New England Baptist Outpatient Care Center at Chestnut Hill, and New England Baptist Surgical Care in Brookline.⁷⁶ NEBH also has a number of clinical affiliations, including with Atrius, BIDMC, and Joslin Diabetes Center.⁷⁷

NEBCIO was created in 2015 to establish contracts on behalf of NEBH-affiliated physicians.⁷⁸ NEBCIO contracts with the largest commercial payers in Massachusetts, and most NEBCIO physicians began participating in BIDCO's Pioneer ACO as of January 2016.⁷⁹

⁷⁰ BIDMC-HMFP-METROWEST NOTICE OF MATERIAL CHANGE, *supra* note 7. Many of HMFP's physicians are also faculty members at Harvard Medical School.

⁷¹ Counts of physicians in HMFP are based on information provided by BIDCO to the HPC's RPO program. HMFP stated on its MCN form that it includes approximately 800 physicians who are medical staff at BIDMC and faculty at Harvard Medical School. BIDMC-HMFP-METROWEST NOTICE OF MATERIAL CHANGE, *supra* note 7.

⁷² BIDMC-JORDAN NOTICE OF MATERIAL CHANGE, *supra* note 58.

⁷³ CTR. FOR HEALTH INFO. & ANALYSIS, HOSPITAL PROFILE: NEW ENGLAND BAPTIST HOSPITAL (Nov. 2015) [hereinafter NEBH Hospital Profile], available at <http://www.chiamass.gov/assets/docs/r/hospital-profiles/2014/ne-bapti.pdf>.

⁷⁴ *Id.* As the parties note in their response, NEBH is licensed for 118 beds. *See* Parties' Response, Exh. A, at 11.

⁷⁵ NEBH Hospital Profile, *supra* note 73.

⁷⁶ Information provided by NEBH to the HPC's RPO program.

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ If an ACO adds member provider organizations solely to join Medicaid or Medicare contracts, neither the ACO nor the provider organizations joining the ACO are required to file an MCN with the HPC at this time. MASS. HEALTH POLICY COMM'N, NOTICE OF MATERIAL CHANGE PROCESS: FREQUENTLY ASKED QUESTIONS (July 27, 2016), available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/material-change-notices-cost-and-market-impact-reviews/20160727-mcn-faq-re-acos.docx>. Accordingly, while we consider NEBH's participation in BIDCO's Pioneer ACO program as part of the context for the proposed transaction, it is not under review in these proposed transactions.

NEBH is the sole corporate member of NEBCIO.⁸⁰ NEBCIO consists of 106 physicians, including approximately 14 primary care physicians and 92 specialists; 25 of the NEBCIO physicians are directly employed.⁸¹

NEBH is in a relatively strong financial position. Its NPSR grew between 2013 and 2014 at a rate of 6.6%; this substantial increase indicates that NEBH was providing more patient care, although similarly large increases in operating expenses narrowed its operating margin over this time period.⁸² Both NEBH's current ratio and days cash on hand ratio are strong.

The map below shows the location of NEBH and its inpatient PSA for its core orthopedic and musculoskeletal services.⁸³

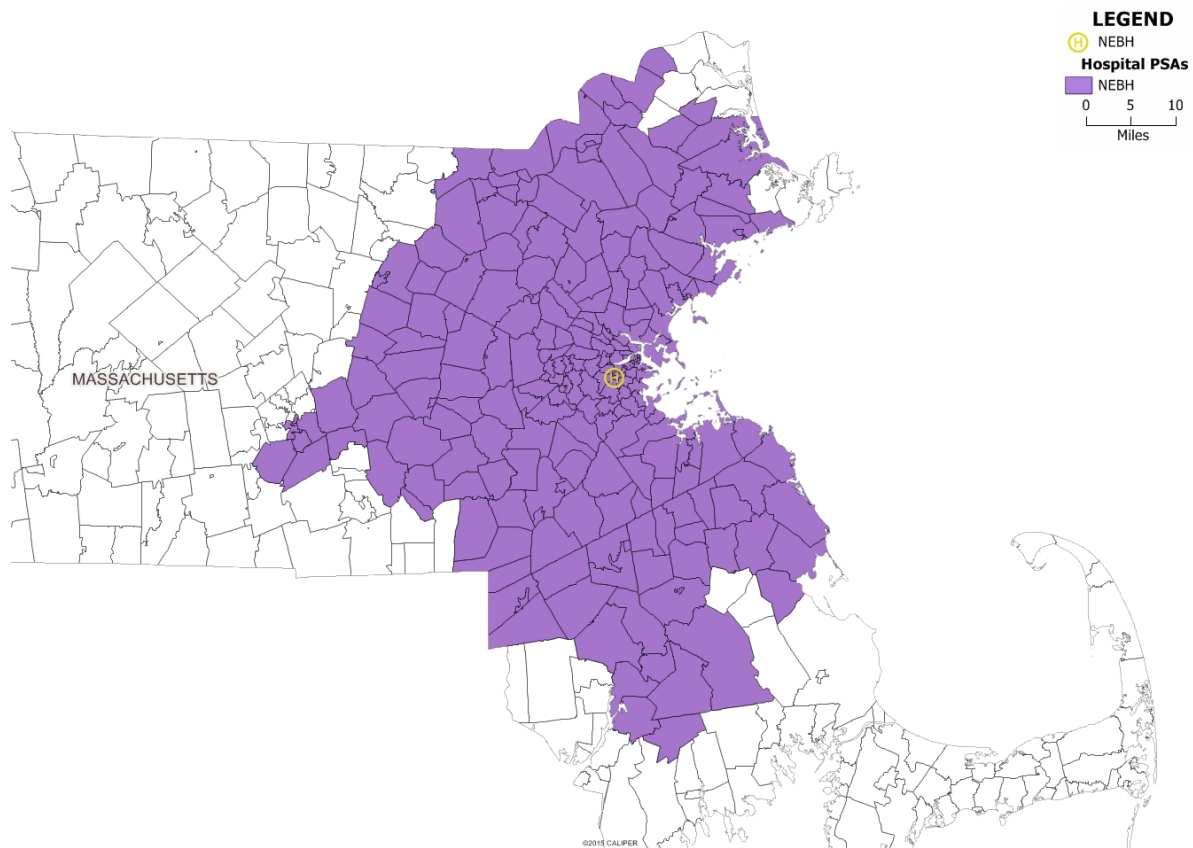
⁸⁰ NEW ENGLAND BAPTIST CLINICAL INTEGRATION ORGANIZATION (NEBCIO), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (OCT. 2, 2015), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/20151002-nebcio-nebh-bidco.pdf>.

⁸¹ Information provided by NEBH to the HPC's RPO program.

⁸² KPMG LLP, Consolidated Financial Statements and Other Financial Information: New England Baptist Hospital and Affiliate (Dec. 12, 2014).

⁸³ As discussed in Section III.A.2, we define NEBH's inpatient service area to be the contiguous area closest to the hospital from which it draws over 75% of its core commercial orthopedic and musculoskeletal discharges. *See infra* note 109.

NEBH and its Inpatient Orthopedic and Musculoskeletal Service Area



E. METROWEST MEDICAL CENTER

MetroWest is a community hospital consisting of two campuses: Framingham Union Hospital in Framingham, and Leonard Morse Hospital in Natick, together representing 284 staffed beds.⁸⁴ MetroWest is a subsidiary of Tenet Healthcare Corporation (Tenet), a multinational for-profit health care services corporation headquartered in Texas.⁸⁵ Tenet currently establishes most hospital contracts on behalf of MetroWest. In 2015, MetroWest entered into an arrangement with BIDCO under which it serves as the risk unit partner for Charles River

⁸⁴ CTR. FOR HEALTH INFO. & ANALYSIS, HOSPITAL PROFILE: METROWEST MEDICAL CENTER (Nov. 2015), available at <http://www.chiamass.gov/assets/docs/r/hospital-profiles/2014/metrowest.pdf>.

⁸⁵ The Legal Name for MetroWest is VHS Acquisition Subsidiary Number 9, Inc. CTR. FOR HEALTH INFO. & ANALYSIS, HOSPITAL PROFILE: METROWEST MEDICAL CENTER (Nov. 2015), available at <http://www.chiamass.gov/assets/docs/r/hospital-profiles/2014/metrowest.pdf>. Tenet previously owned MetroWest from 1999 until 2005, when Vanguard Health Systems, Inc. purchased both MetroWest and St. Vincent Hospital in Worcester. Vanguard sold both hospitals back to Tenet in 2013. METROWEST MEDICAL CENTER, NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Aug. 7, 2014), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, available at <http://www.mass.gov/anf/docs/hpc/material-change-notices/tenet-vanguard-notice-of-material-change-metrowest.pdf>.

Medical Associates (CRMA) for the purposes of caring for patients under BIDCO's Pioneer ACO contract.⁸⁶

MetroWest owns MetroWest Physician Services (MWPS), a physician practice of approximately 28 physicians.⁸⁷ Along with a number of independent physicians, MWPS physicians participate in MetroWest Accountable Health Care Organization (MWAHO), a 233-physician practice with 50 primary care physicians (PCPs).⁸⁸ MetroWest owns a 50% ownership share in MWAHO. Currently, New England Quality Care Alliance (NEQCA), an affiliate of Wellforce and Tufts MC, establishes contracts on behalf of MWAHO, including MWPS.⁸⁹

MetroWest has a clinical affiliation with Tufts MC for tertiary and quaternary services for both adult and pediatric care, and Tufts MC also staffs a number of service lines at MetroWest.⁹⁰ MetroWest also has a number of other clinical affiliations, including with Laboratory Corporations of America Holdings, which manages and operates MetroWest's lab locations, MetroWest Emergency Physicians, Inc., an independent physician group that staffs the emergency departments at MetroWest's two campuses, and the physician groups that are part of MWAHO.⁹¹

MetroWest's financial performance was relatively weak from 2012 through 2014.⁹² During this period, MetroWest's NPSR decreased by 4.4%, while the NPSR of other local hospitals grew. MetroWest also had a relatively low aggregate 3-year operating margin during this time.⁹³ However, a review of MetroWest's 2015 financial information indicates some recent improvement in MetroWest's financial performance, likely due in part to its 2013 acquisition by Tenet, and the parties have indicated that the proposed MetroWest transactions are not motivated by any immediate financial distress on MetroWest's part.

The map below shows the location and inpatient PSAs of both the BIDCO general acute care hospitals (medium green) and MetroWest (light green). As shown below, MetroWest's service area somewhat overlaps with that of BIDCO hospitals (dark green), but

⁸⁶ CRMA became a member of BIDCO's Pioneer ACO network in January 2015. Although CRMA physicians participate in the Pioneer ACO program through BIDCO, they contract through Partners for commercial business.

⁸⁷ Information provided by Tenet to the HPC's RPO program.

⁸⁸ Information provided by Wellforce to the HPC's RPO program.

⁸⁹ See *The NEQCA Network*, NEW ENGLAND QUALITY CARE ALLIANCE, <http://www.neqca.org/ABOUT-NEQCA/The-NEQCA-Network.aspx> (last visited Sept. 6, 2016).

⁹⁰ *MetroWest Medical Center*, TUFTS MEDICAL CENTER, <https://www.tuftsmedicalcenter.org/About-Us/Clinical-Affiliates/MetroWest-Medical-Center.aspx> (last visited Sept. 6, 2016).

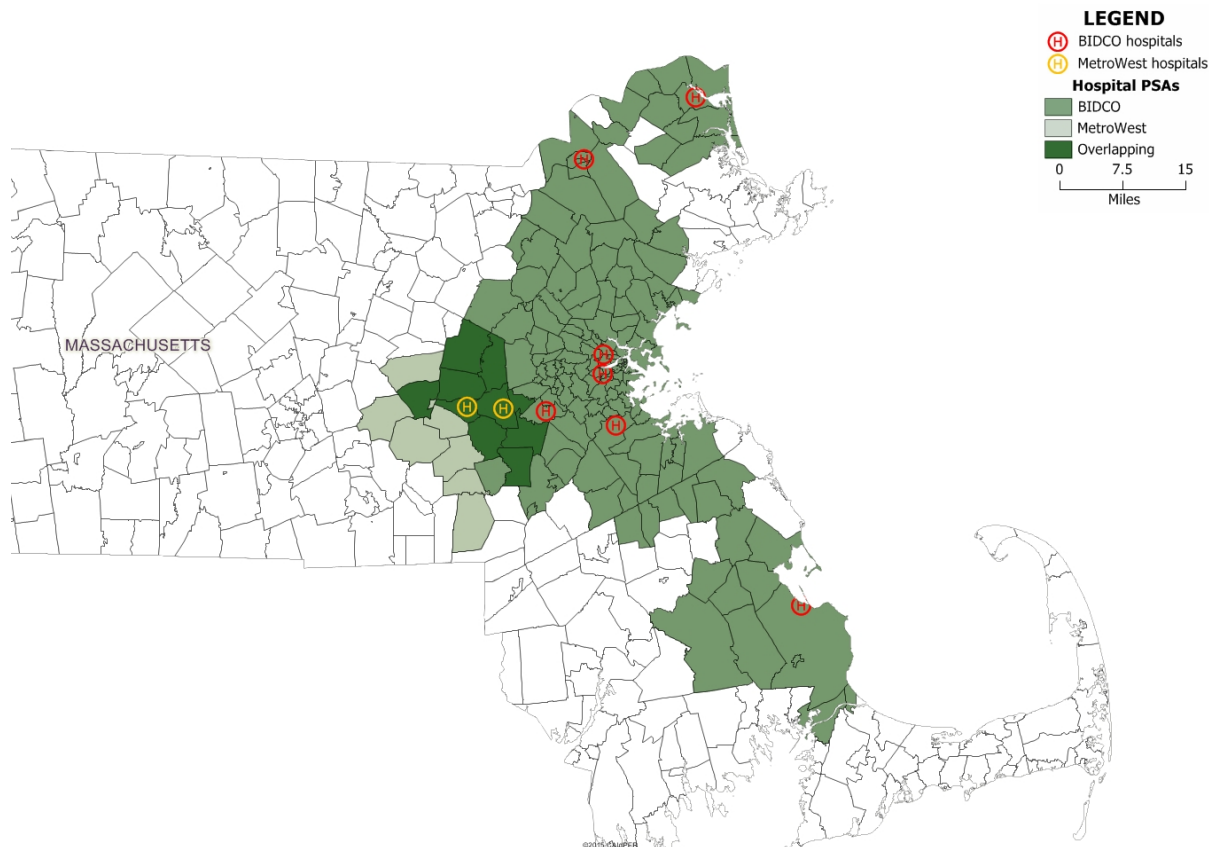
⁹¹ Information provided by Tenet to the HPC's RPO program.

⁹² We compared MetroWest's financial performance to that of Newton-Wellesley Hospital (Newton-Wellesley) and Milford Regional Medical Center (Milford Regional MC), as well as to BIDCO community hospitals. As described in Section I, the HPC selected comparators for MetroWest based on geography, patient flow patterns, and community hospital status.

⁹³ This poor operating performance may have been due in part to the expense of maintaining unused bed capacity, as MetroWest's bed occupancy rate was only just above 50% in 2014. CTR. FOR HEALTH INFO. & ANALYSIS, HOSPITAL PROFILE: METROWEST MEDICAL CENTER (Nov. 2015), available at <http://www.chiamass.gov/assets/docs/r/hospital-profiles/2014/metrowest.pdf>.

MetroWest's service area extends further west than the current BIDCO hospitals' inpatient service area.

MetroWest and BIDCO Hospitals and Inpatient Service Areas



F. THE PROPOSED TRANSACTIONS

1. Contracting affiliation between BIDCO and NEBH/NEBCIO

Under the proposed BIDCO-NEBH-NEBCIO contracting affiliation, NEBH and NEBCIO would join BIDCO—NEBH would become a member of Hospital LLC, and NEBCIO would become a member of Physician LLC.⁹⁴ BIDCO would begin establishing risk and non-risk contracts on behalf of NEBH and NEBCIO as described in Section II.A.⁹⁵ The majority of NEBCIO specialist physicians would join BIDCO contracts immediately, while NEBCIO's primary care physicians and certain specialists would be expected to join BIDCO at a later time. BIDCO would be the only physician contracting organization to which NEBCIO primary care physicians could belong, and only those specialist physicians who designate BIDCO at their primary contracting organization would be entitled to receive BIDCO rates.

⁹⁴ Although NEBH and NEBCIO would join Hospital LLC and Physician LLC, the transaction would not include the integration of NEBH or NEBCIO's finances or administrative structures with those of other BIDCO members.

⁹⁵ See BIDCO-NEBH-NEBCIO NOTICE OF MATERIAL CHANGE, *supra* note 5.

BIDCO would establish new hospital rate contracts for NEBH as its current contracts expire,⁹⁶ and BIDCO would be the only accountable care organization to which NEBH could belong.⁹⁷ NEBH and NEBCIO would participate in BIDCO clinical integration programs, including expanded electronic sharing of patient data, and the parties would discuss the possibility of integrating NEBH and NEBCIO providers and quality improvement processes at other BIDCO hospitals and outpatient sites. NEBCIO would also work with BIDCO to design and develop bundled payment programs for both inpatient and outpatient musculoskeletal care, including exploring the possibility of developing a model for orthopedic care that would reward NEBCIO physicians for managing orthopedic episodes within BIDCO.⁹⁸

2. Contracting affiliation between BIDCO and MetroWest

Under the proposed BIDCO-MetroWest transaction, MetroWest would join BIDCO, becoming a member of Hospital LLC.⁹⁹ BIDCO would begin establishing contracts on behalf of MetroWest with Massachusetts payers as MetroWest's contracts come up for renewal,¹⁰⁰ and Tenet would continue to establish national payer contracts on behalf of MetroWest. MetroWest would continue to participate in BIDCO's Pioneer ACO as the risk sharing hospital of CRMA. MetroWest would enter BIDCO without an affiliated BIDCO physician group for commercial business, but the parties intend for MWPS to join BIDCO by 2018, and other physicians would be recruited to join them.¹⁰¹ Under the parties' affiliation agreements, MetroWest would participate in BIDCO clinical integration programs supporting BIDCO risk contracts, including electronic patient information sharing with BIDMC and population health management programs for Medicare risk patients.

3. Clinical affiliation between BIDMC, HMFP, and MetroWest

Under the proposed BIDMC-HMFP-MetroWest clinical affiliation, the parties plan to engage in clinical collaborations that would complement the BIDCO-MetroWest contracting affiliation.¹⁰² The parties' plans include co-recruitment of physicians, expanded clinical cooperation in specific service lines, new capital improvements and renovations at MetroWest, and alignment of MetroWest physicians with BIDCO in the future. The parties' stated goals

⁹⁶ *Id.*

⁹⁷ The parties have stated that this exclusivity would apply only to contracting, and that NEBH would continue to accept patients from outside of the BIDCO network.

⁹⁸ See BIDCO-NEBH-NEBCIO NOTICE OF MATERIAL CHANGE, *supra* note 5.

⁹⁹ Although MetroWest would join Hospital LLC, the transaction would not include the integration of MetroWest's finances or administrative structures with those of other BIDCO members.

¹⁰⁰ BIDCO-METROWEST NOTICE OF MATERIAL CHANGE, *supra* note 6.

¹⁰¹ As discussed above, MWPS and MWAHO physicians currently contract through NEQCA. When their contracts through NEQCA expire, the parties expect MWPS to join BIDCO contracts. See Parties' Response, Exh. A, at 11. As discussed in the next section, provisions of the BIDMC-HMFP-MetroWest affiliation agreement also make it likely that other MWAHO physicians will join BIDCO in the future.

¹⁰² BIDMC, HMFP, and MetroWest describe the BIDCO-MetroWest affiliation as "an important component of the organizations' overall relationship." BIDMC-HMFP-METROWEST NOTICE OF MATERIAL CHANGE, *supra* note 7.

include improving care quality and access to specialty services at MetroWest and enhancing MetroWest's ability to attract local patients.¹⁰³

The parties' plans include the co-recruitment of a number of new primary care physicians to practice in MetroWest's service area. In addition, the parties would recruit specialists in certain service lines at MetroWest. The parties also plan to expand surgery at MetroWest, collaborate on obstetrics/gynecology, develop a joint cancer program, and discuss clinical collaborations in other services in the future.¹⁰⁴ In addition to service-line specific collaborations, MetroWest would designate BIDMC and HMFP its exclusive tertiary and quaternary affiliate, replacing Tufts MC for all services except pediatrics. Finally, the parties plan to implement a system to share electronic medical record information.

In conjunction with its affiliation with BIDMC and HMFP, MetroWest would commit to making certain infrastructure investments, funded by Tenet, including facility renovations and upgrades of certain designated equipment. MetroWest would also be required to incorporate its employed physician group, MWPS, as a member of BIDCO; other contractual terms make it likely that additional MWAHO physicians would join BIDCO in the future.¹⁰⁵

III. ANALYSIS OF PARTIES' BASELINE PERFORMANCE (2010-2015)

To analyze the impact of a proposed transaction, it is important to first understand the parties' baseline performance, prior to the transaction. Part III examines the parties' recent performance and trends across costs and market functioning, care delivery and quality, and access. The analyses detailed in this section are based on the most recent available data, which primarily dates from 2013 to 2015. As a result, some of the findings in this section may not yet fully reflect the impact of recent growth of the BIDCO contracting network as newer members have joined in 2014 and 2015; it will therefore be important to continue to monitor the parties' performance in these areas as newer data become available.

A. COST AND MARKET BASELINE PERFORMANCE

The law governing cost and market impact reviews directs the HPC to examine different measures of the parties' cost and market position, including their size, prices, health status adjusted total medical expenses (TME), and market share.¹⁰⁶ The HPC examined these measures over time and compared to other providers to establish the parties' baseline performance leading up to the proposed transactions. In Section IV, we will combine the parties' current performance with details of the transactions and the parties' goals and plans to project the likely impacts of the transactions.

¹⁰³ BIDMC-HMFP-METROWEST NOTICE OF MATERIAL CHANGE, *supra* note 7.

¹⁰⁴ *Id.*

¹⁰⁵ As noted above, MetroWest currently holds a 50% ownership interest in MWAHO.

¹⁰⁶ See Section I.A.

Comparisons of providers' market shares in their service areas show their relative importance to patients in those areas and the payers that cover those patients. Comparisons of relative prices (the relative amounts that payers pay providers for comparable services), spending for specific procedures and episodes of care, and provider health status adjusted TME show differences in provider efficiency and costs, which impact total health care spending. In examining these elements of the parties' cost and market profile, the HPC found:

- BIDCO has significant market share both statewide and locally. It has the largest inpatient market share in certain local areas surrounding its community hospitals and is the second largest hospital contracting network statewide. However, its statewide market share is far smaller than that of the dominant provider system (Partners).¹⁰⁷
- NEBH has very large market share for orthopedic and musculoskeletal services. Its inpatient market share for these services in its service area is only slightly less than that of the dominant provider system (Partners), and is nearly four times that of BIDCO. It also has smaller but still substantial market share for outpatient orthopedic surgeries.
- While MetroWest continues to be an important provider in its service area, its commercial inpatient market share in its service area has dropped 35% in the last five years. The dominant provider system in its service area (Partners) has more than 2.5 times the commercial market share of MetroWest.
- As of 2014, the prices of the BIDCO hospitals, MetroWest, and NEBH were low to mid-range relative to comparators.
- As of 2013, BIDCO physician prices were also low to mid-range among major physician groups; NEBCIO's were lower and MetroWest's (through NEQCA) were higher.
- NEBH has consistently delivered commercial inpatient orthopedic and musculoskeletal care less expensively than AMCs, including BIDMC.
- As of 2014, BIDCO's health status adjusted TME was comparable to or lower than that of other major physician networks, indicating that it is a relatively efficient provider network; NEQCA, the current contracting partner for MetroWest, had comparable TME to BIDCO for two of the largest payers and higher TME for the largest commercial payer.

1. BIDCO has significant market share both statewide and locally.

A provider's market share is its share of patient volume in a particular market or region. We examined the parties' commercial market share¹⁰⁸ statewide and in their PSAs¹⁰⁹ for both inpatient general acute care services¹¹⁰ and primary care services.¹¹¹

¹⁰⁷ We use the term "provider system" to refer to Partners and other large provider organizations throughout this report, whereas we refer to BIDCO as a "provider network". This distinction is intended to reflect the fact that Partners and many other provider organizations in the Commonwealth are predominantly corporately integrated systems whereas BIDCO members are predominantly corporately independent of each other. Notwithstanding this distinction, when we discuss corporately integrated provider systems throughout this report as comparators to BIDCO, we include both the corporately affiliated entities as well as entities that are not corporately affiliated, but rather contract through the system. These comparators are discussed throughout this section.

¹⁰⁸ Because provider organizations primarily negotiate with commercial, not government, payers for prices, commercial market share is more relevant for assessing the competitive impact of a transaction. Our assessments

As discussed in Section II.A we found that BIDCO's contracting network has grown rapidly in recent years. As shown in the table below, BIDCO hospitals now account for the second largest share of commercial discharges in the Commonwealth, nearly 40% more than the next largest provider organization. However, Partners hospitals still have more than 2.5 times as many discharges as BIDCO hospitals.¹¹²

of market shares for hospital and physician services are based on the share of services of providers represented by a provider organization or contracting network when dealing with commercial payers, as well as any providers from which a provider organization receives patient service revenue. BIDCO's shares are based on the shares of hospitals and physician groups which are part of its contracting network. *See infra* note 112.

¹⁰⁹ The HPC describes market shares and market concentration in providers' PSAs, generally described as the area from which an entity draws 75% of its commercial patients. *See* MASS. GEN. LAWS ch. 6D, § 13(d)(i) (listing factors to be considered in a CMIR, including a provider organization's "size and market share within its primary service areas by major service category... the provider or provider organization's impact on competing options for the delivery of health care services within its primary service areas... [and] the role of the provider or provider organization in serving at-risk, underserved and government payer patient populations, including those with behavioral, substance use disorder and mental health conditions, within its primary service areas..."); MASS. HEALTH POLICY COMM'N, TECHNICAL BULLETIN FOR 958 CMR 7.00: NOTICES OF MATERIAL CHANGE AND COST AND MARKET IMPACT REVIEWS (Aug. 6, 2014), *available at* <http://www.mass.gov/anf/docs/hpc/regs-and-notices/technical-bulletin-circ.pdf> (describing the HPC's method for calculating a PSA). The HPC's definitions of PSAs reflect certain key concepts that would be considered in analyses of "relevant geographic markets," which are often central to antitrust litigation, but are also more data- and time-intensive. For example, in defining PSAs, the HPC considered both whether the geographic area is important to the hospital (e.g., the area represents a significant proportion of the hospital's discharges) and whether the hospital is an important provider for the geographic area (e.g., the hospital is a short drive from the zip codes in question, and discharges from the hospital exceed a minimum proportion of the zip code's total discharges). While a PSA may not align precisely with a "relevant geographic market" defined in a law enforcement investigation, it is one of the best available measures to provide the type of rapid, focused analysis that the General Court intended in limiting CMIRs to a small fraction of the time that antitrust reviews can take.

¹¹⁰ Specifically, we examined hospital discharges for general acute care services (i.e., services provided in non-specialty inpatient hospitals), excluding normal newborns (including normal newborns would effectively double-count a single delivery as two discharges), non-acute discharges (e.g., discharges with a length of stay of greater than 180 days, rehabilitation discharges), and out-of-state patients.

¹¹¹ For the purposes of this report, we define primary care services as services delivered by physicians with a primary care specialty who derive the majority of their revenue from adult primary care visits. We define a primary care PSA to be the area from which a physician group's PCPs collectively draw 75% of their commercial primary care visits. Due to data constraints, our primary care share analyses are based on data for the three largest commercial payers for 2013. As the APCD is expanded and refined, we look forward to further developing our APCD-based analyses. Although our market share and PSA analyses use 2013 data, they reflect the current affiliations of physicians and physician groups, based on information provided to the HPC by the parties and other provider groups as part of this CMIR and through the RPO program.

¹¹² *See* note 107, *supra*. For provider organizations with non-owned contracting affiliate hospitals (including Partners and BIDCO), we include the shares of hospitals that contract through those organizations in their shares in order to show the relative patient population that each organization represents when it negotiates rates with commercial payers (e.g., for Partners, Emerson Hospital and Hallmark Health System). *See* MASS. HEALTH POLICY COMM'N, REVIEW OF PARTNERS HEALTHCARE SYSTEM'S PROPOSED ACQUISITION OF HALLMARK HEALTH CORPORATION (HPC-CMIR-2013-4), PURSUANT TO M.G.L. c. 6D § 13, FINAL REPORT at 22, note 77 (Sept. 3, 2014) [hereinafter PARTNERS-HALLMARK CMIR FINAL REPORT], *available at* <http://www.mass.gov/anf/docs/hpc/material-change-notices/phs-hallmark-final-report-final.pdf>. A list of hospitals included in each provider organization for each year examined is provided *infra* note 113.

Statewide Commercial Inpatient Market Share

Hospital System/Network	Share of Discharges (2010)	Share of Discharges (2013)	Share of Discharges (2015)
Partners	27.8%	29.8%	28.6%
BIDCO	6.8%	7.4%	10.5%
Lahey	2.3%	4.7%	7.6%
UMass	7.0%	6.7%	6.8%
Steward	5.3%	6.6%	6.1%
Baystate Health	4.3%	4.5%	5.2%
Wellforce	2.8% (Tufts MC); 1.9% (Lowell)	3.0% (Tufts MC); 2.7% (Lowell + Saints)	5.0%
All Other Combined	41.9%	34.6%	30.2%

Note: System/network shares reflect hospital affiliations in each year.¹¹³

Source: HPC analysis of 2010, 2013, and 2015 CHIA hospital discharge data

When we examined inpatient utilization in the inpatient PSA of each BIDCO hospital,¹¹⁴ we found that BIDCO has either the largest or second largest share of commercial discharges in each of its hospitals' inpatient PSAs.¹¹⁵

¹¹³ For 2010, Partners' share included Brigham and Women's Hospital, Brigham and Women's Faulkner Hospital, CHA, Emerson Hospital, Lawrence Memorial Hospital, Martha's Vineyard Hospital, Mass. General Hospital, Melrose-Wakefield Hospital, Nantucket Cottage Hospital, Newton-Wellesley, and North Shore Medical Center; BIDCO's share included BIDMC and BID-Needham only, the corporately affiliated hospitals at the time that later became members of BIDCO; Lahey's share was only that of Lahey Hospital and Medical Center; UMass's share was that of HealthAlliance Hospital, Marlborough Hospital, UMass Memorial Medical Center, and Wing Memorial Medical Center; Steward's share was the combined shares of the hospitals that were part of its predecessor organization, Caritas Christi Health Care; Baystate's share was that of Baystate Medical Center, Baystate Franklin Medical Center, and Baystate Mary Lane; and Lowell General and Tufts MC's shares were treated separately. For 2013, Partners' share added Cooley Dickinson; BIDCO's share added BID-Milton; Lahey's share added the Northeast hospitals; Lowell General's share added Saints Medical Center (Saints); and Steward's share added Merrimack Valley Hospital, Morton Hospital, Nashoba Valley Medical Center, and Quincy Medical Center. For 2015, Partners' share no longer included CHA; BIDCO's share added Anna Jaques, CHA, Lawrence General, and BID-Plymouth; Lahey's share added Winchester hospital; UMass' share no longer included Wing; Baystate's share added Noble Hospital and Wing; and the shares of Tufts MC, Lowell General, and Saints were combined for Wellforce.

¹¹⁴ The HPC applied its general method for defining a hospital PSA, which focuses on the contiguous zip codes closest to the hospital from which the hospital draws 75% of its commercial discharges. For more information on the HPC's PSA methodology, see *supra* note 109. Although MetroWest includes two campuses, its PSA was calculated using drive times to the larger Framingham Union campus. Although a PSA may not align precisely with a "geographic market," the Department of Justice (DOJ) and the Federal Trade Commission (FTC) use market shares within PSAs as "a useful screen for evaluating potential competitive effects." U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, STATEMENT OF ANTITRUST ENFORCEMENT POLICY REGARDING ACCOUNTABLE CARE ORGANIZATIONS PARTICIPATING IN THE MEDICARE SHARED SAVINGS PROGRAM 7 (2011), *available at* <https://www.justice.gov/sites/default/files/atr/legacy/2011/10/20/276458.pdf> [hereinafter FTC/DOJ ACO

BIDCO has also significantly expanded the number of physicians in its network since its creation. When we examined the parties' shares of adult primary care services, we found that BIDCO physicians have the fourth largest share of visits and the third largest share of primary care revenue in the state.^{116, 117}

Statewide Commercial Adult Primary Care Physician Market Share

System/Network	Share of Primary Care Visits	Share of Primary Care Revenue
Partners	17.3%	22.1%
Atrius	14.8%	12.8%
Steward	12.1%	11.1%
BIDCO	10.4%	11.1%
NEQCA	8.7%	8.6%
Lahey	5.3%	5.3%
UMass	4.9%	5.2%
Other networks, multiple networks, or independent	26.5%	23.8%

Source: HPC analysis using current physician affiliations based on information from provider organizations and utilization and revenue data from the 2013 APCD; *see supra* note 111.

2. NEBH has very large market share for orthopedic and musculoskeletal services.

NEBH provides a substantial share of inpatient orthopedic and musculoskeletal services in the Commonwealth. In order to assess NEBH's share of the services for which it competes,¹¹⁸ we examined hospital commercial market shares for the set of inpatient

GUIDANCE]; *see also* 76 FED. REG. 67026, 67028 (Oct. 28, 2011), *available at* <http://www.gpo.gov/fdsys/pkg/FR-2011-10-28/pdf/2011-27944.pdf>.

¹¹⁵ BIDCO has the largest share of discharges in the inpatient PSAs of Lawrence General (30.8%, followed by Steward at 22.3% and Partners at 16.9%), Anna Jaques (45.1%, followed by Partners at 18.0% and Lahey at 17.3%), and BID-Plymouth (31.5%, followed by South Shore Hospital at 23.8% and Partners at 14.7%). BIDCO's market share is substantially lower than Partners' share in the inpatient PSAs of BIDCO's other hospitals, including BIDMC (14.5%, second to Partners at 41.0%), BID-Milton (20.2%, second to Partners at 31.7%), BID-Needham (16.2%, second to Partners at 54.2%), and CHA (19.7%, second to Partners at 42.5%).

¹¹⁶ BIDCO's share of primary care revenue is 11.149%, slightly larger than Steward's at 11.053%, although both round to 11.1%.

¹¹⁷ When a provider's share of revenue is higher than its share of visits, that provider's revenue per visit is above average relative to other providers. Higher average revenue per visit reflects a combination of higher prices, higher patient acuity, higher utilization, and/or provision of more expensive services.

¹¹⁸ Our analyses of NEBH's market share in this section focus on the set of orthopedic and musculoskeletal services NEBH actually provides. However, even given the relatively expansive inpatient PSA for NEBH shown in the map in Section II.D, and the limited specialized services that it provides, NEBH still has a market share of *all* general acute care discharges in its PSA of 2.2%.

orthopedic and musculoskeletal services most commonly provided by NEBH.¹¹⁹ We refer to these services as NEBH’s “core services.”¹²⁰ We found that NEBH has the second largest share of these core orthopedic and musculoskeletal inpatient services statewide and in its own PSA,¹²¹ as shown in the table below, slightly smaller than that of the dominant provider system (Partners) and nearly four times that of BIDCO.¹²² NEBH’s total commercial volume and statewide market share for these services grew between 2010 and 2015.¹²³

¹¹⁹ We used 2012 CHIA hospital discharge data to identify the inpatient services NEBH most commonly provides, based on the most common DRGs for NEBH patients and including all levels of acuity. We found that three services (all DRGs for major joint replacements of the lower extremity, spinal fusions, and revisions of hip or knee replacements) account for over 80% of NEBH’s commercial discharges. Our core services definition also includes relatively uncommon services for which NEBH provides a substantial share of all commercial discharges among hospitals in its PSA (these were major joint procedures of the upper extremity, other knee procedures, and arthroscopies). In total, our method of defining NEBH’s core services accounted for over 91% of NEBH’s commercial discharges in 2015. The 26 MS-DRGs included in our definition of NEBH’s core services are 453-462, 466-473, 483-489, and 509.

¹²⁰ In response to HPC inquiries, the parties provided their own definition of inpatient orthopedic and musculoskeletal services, which included numerous services that NEBH rarely provides to commercial inpatients; utilizing such a definition for NEBH’s services would have provided a smaller market share for NEBH. However, to understand the competitive market for those services that NEBH regularly provides, we excluded those services that NEBH provides infrequently to obtain the list of NEBH’s core services. *See supra* note 119.

¹²¹ Because NEBH is a specialty hospital, the HPC defined NEBH’s inpatient PSA as the contiguous zip codes closest to the hospital from which the hospital draws 75% of its commercial discharges in its core services. *See supra* notes 109 and 119.

¹²² NEBH’s share of its core orthopedic and musculoskeletal services ranges from 19.4% to 39.6% in the parties’ inpatient PSAs. It has the largest share in two of these PSAs (BID-Plymouth and BID-Milton), the second largest share in six of these PSAs (BIDMC, BID-Needham, CHA, Lawrence General, MetroWest, and NEBH), and the third largest share in Anna Jaques’s PSA. Partners has the largest share in six of the parties’ PSAs (Anna Jaques, BIDMC, BID-Needham, CHA, and MetroWest, in addition to NEBH) and Steward has the largest share in the Lawrence General PSA.

¹²³ NEBH’s statewide share of its core services grew from 22.2% in 2010 (2,844 discharges) to 24.6% in 2015 (3,539 discharges); during this same time, Partners’ share dropped from 25.8% to 25.0%, although it remained the largest provider statewide. In information provided to the HPC, NEBH stated that some provider networks are referring less orthopedic and musculoskeletal care outside of their own systems, resulting in declining referral volume over time, particularly for health maintenance organization (HMO) and point-of-service (POS) patients. HPC analysis of referral data for inpatient orthopedic and musculoskeletal services from 2010 to 2014 provided by the three largest payers indicates that some provider groups have sent a smaller proportion of care to NEBH over time, while others have sent a larger proportion. From 2012 to 2014, NEBH’s share of total referrals decreased from NEQCA (from 25.4% to 18.1%), Atrius (from 49.5% to 45%), and Steward (from 18.8% to 15%), while its share of referrals increased from Lahey (from 7.7% to 10%) and UMass (from 20.9% to 28.5%). NEBH’s share of referrals was relatively unchanged from Partners (19.1% in 2012, 19.7% in 2014) and BIDCO (25.7% in 2012, 24.4% in 2014).

Commercial Inpatient Orthopedic and Musculoskeletal Market Share in NEBH's PSA

Hospital System/Network	Share of Orthopedic & Musculoskeletal Discharges (2010)	Share of Orthopedic & Musculoskeletal Discharges (2015)
Partners	32.5%	30.5%
NEBH	25.6%	27.9%
Lahey	3.7%	9.5%
BIDCO	5.4%	7.3%
Wellforce	1.8% (Tufts); 1.9% (Lowell)	6.2%
Steward	4.2%	5.8%
All Other Combined	24.9%	12.7%

Note: System/network shares reflect hospital affiliations in each year; *see supra* note 113.

Source: HPC analysis of 2010 and 2015 CHIA hospital discharge data

We also examined the market for outpatient orthopedic surgical services, which can be provided not only at hospital outpatient departments but also at outpatient satellite facilities and ambulatory surgery centers. The market for these outpatient surgical services is particularly important to examine, given that more orthopedic care is shifting toward being provided on an outpatient basis.¹²⁴ For these outpatient orthopedic surgical services, we found that NEBH provides a significant but smaller share of services.¹²⁵ We found that in 2013, NEBH had the second largest share of commercial outpatient orthopedic surgical visits in its service area, but that Partners' share of these services was nearly three times larger.^{126, 127}

¹²⁴ See, e.g., Harris Meyer, *Replacing joints faster, cheaper and better?*, MODERN HEALTHCARE (June 4, 2016) available at <http://www.modernhealthcare.com/article/20160604/MAGAZINE/306049986>. Despite the trend toward an increasing amount of orthopedic care being provided in outpatient settings, a large share of NEBH's revenue is still driven by inpatient care. In 2014, NEBH received 60% of its patient service revenue from inpatient care and 40% from outpatient care. *See* NEBH Hospital Profile, *supra* note 73.

¹²⁵ For the purposes of this analysis, we defined outpatient orthopedic surgical services as those claims with a current procedural terminology (CPT) code in the category of procedures related to the musculoskeletal system (codes 20005 through 29999), and that meet the "narrow" surgery flag definition from the Healthcare Cost and Utilization Project, defined as "[a]n invasive therapeutic surgical procedure involving incision, excision, manipulation, or suturing of tissue that penetrates or breaks the skin; typically requires use of an operating room; and also requires regional anesthesia, general anesthesia, or sedation to control pain." *See Surgery Flag Software*, HEALTHCARE COST AND UTILIZATION PROJECT, available at <https://www.hcup-us.ahrq.gov/toolssoftware/surgflags/surgeryflags.jsp> (last visited Sept. 6, 2016). We used 2013 APCD claims data for BCBS, HPHC, and THP to identify outpatient orthopedic surgeries provided by hospital outpatient departments, outpatient satellite facilities, and ambulatory surgery centers. We then determined the share of patient visits at each provider, counting all claims on the same day at the same provider for the same patient as a single visit. We calculated shares within an outpatient orthopedic surgical service area (hereinafter "outpatient service area") for NEBH based on the zip codes from which it draws 75% of its patients for these services using the 2013 APCD.

¹²⁶ Examining statewide shares of outpatient orthopedic surgery visits in 2013, Partners' share was 25.4%, BIDCO's was 9.4%, Lahey's was 8.7%, Steward's was 7%, and NEBH's was 6.5%.

Commercial Outpatient Orthopedic Surgery Market Share in NEBH's Outpatient Service Area

System/Network	Share of Outpatient Orthopedic Surgery Visits
Partners	34.7%
NEBH	12.1%
BIDCO	11.5%
Lahey	8.1%
South Shore Hospital	5.4%
Steward	5.1%
Children's Hospital	5.1%
All Other Combined	18.0%

Source: HPC analysis of 2013 APCD data

3. While MetroWest continues to be an important provider in its service area, its inpatient market share has dropped substantially in recent years.

When we examined inpatient utilization in MetroWest's inpatient PSA, we found that Tenet, which contracts on behalf of both MetroWest and St. Vincent, has the second largest share of commercial discharges in MetroWest's PSA; however, Partners has more than 2.5 times Tenet's commercial market share. Tenet's market share also decreased substantially, by 35%, between 2010 and 2015. At the same time, Partners' share in this area grew, particularly at Newton-Wellesley Hospital (Newton-Wellesley).

Commercial Inpatient Market Share in MetroWest's PSA

System/Network	Share of Discharges (2010)	Share of Discharges (2015)
Partners	37.6%	41.6%
Newton-Wellesley	18.0%	21.5%
Partners AMCs	16.6%	17.4%
Other Partners hospitals	3.1%	2.7%
Tenet	23.6%	15.3%
MetroWest	22.9%	14.1%
St. Vincent	0.7%	1.2%

¹²⁷ The parties also provided an assessment of outpatient orthopedic market shares that indicated NEBH and BIDCO shares were smaller than those of other major provider organizations, based on utilization by patients in all of Eastern Massachusetts.

UMass	9.6%	11.8%
BIDCO	8.7%	8.1%
All Other Combined	20.5%	23.2%

Note: System/network shares reflect hospital affiliations in each year; for 2010, BIDCO's share is the combined share of BIDMC and BID-Needham, and Tenet's share is the combined share of MetroWest and St. Vincent, which were then both owned by Vanguard Health Systems.

Source: HPC analysis of 2010 and 2015 CHIA hospital discharge data

In terms of commercial primary care services, MWAHO physicians have approximately 9.1% of visits and 8.0% of revenue in their primary care PSA, constituting the fourth largest and third largest share, respectively.¹²⁸

4. As of 2014, the prices of the BIDCO hospitals, MetroWest, and NEBH were low to mid-range relative to comparators.

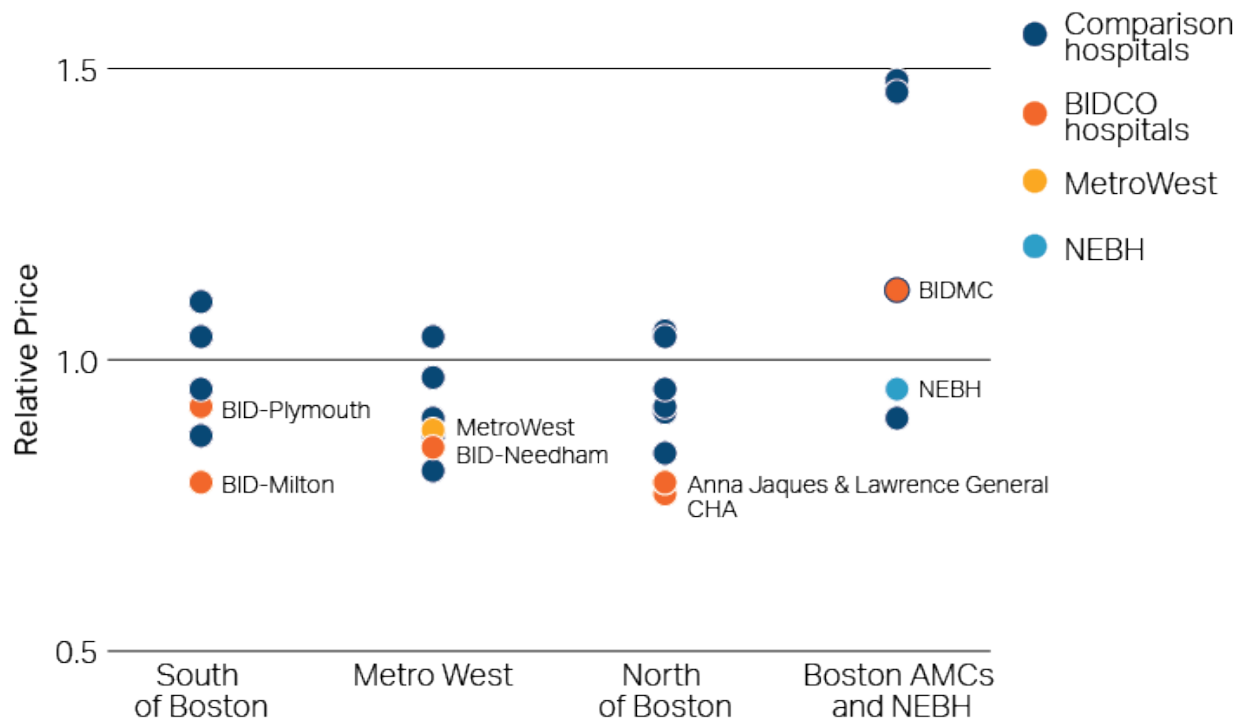
The HPC examined hospital relative price¹²⁹ data for the parties from 2010 to 2014, and found consistent trends for all three of the largest commercial payers. Compared to other Boston AMCs during that time period, BIDMC's prices were mid-range, whereas BIDCO community hospitals had consistently low prices relative to most other community hospitals in their areas. MetroWest's prices were also low to mid-range among hospitals in its region, although they were slightly higher than those of nearby BID-Needham. NEBH's prices were low compared to most Boston AMCs, but higher than some community hospitals. The following chart is an example of these patterns, showing relative prices for inpatient and outpatient services for the largest commercial payer.¹³⁰

¹²⁸ In contrast, Partners, which is the dominant provider system in this area, receives 42.4% of primary care visits and 50.3% of primary care revenue in this area; approximately a third of Partners' share is from CRMA, which contracts through Partners for commercial business but is part of BIDCO's Pioneer ACO. BIDCO physicians have the sixth largest primary care share, at 5.8% of visits and 6.0% of revenue.

¹²⁹ Relative price is a standardized pricing measure that accounts for differences among provider service volume, service mix, patient acuity, and insurance product types in order to allow comparison of negotiated price levels. When discussing hospital relative prices, we are referring to CHIA's blended hospital relative price metric, which combines the hospital inpatient and hospital outpatient relative price metrics. See CTR. FOR HEALTH INFO. & ANALYSIS, PROVIDER PRICE VARIATION IN THE MASSACHUSETTS HEALTH CARE MARKET (CALENDAR YEAR 2014 DATA) (Feb. 2016) [hereinafter CHIA RELATIVE PRICE DATABOOK], available at <http://www.chiamass.gov/assets/docs/r/pubs/16/relative-price-databook-2014.xlsx>.

¹³⁰ These patterns are generally consistent across all three largest payers in 2014; for the other two largest payers, certain Steward hospitals had lower relative prices than BIDCO community hospitals and MetroWest, and Marlborough Hospital's prices were consistently the lowest among comparator hospitals for MetroWest. See *id.*

Blended Inpatient and Outpatient Relative Prices of Party Hospitals and Comparators - BCBS



Area hospitals: **South of Boston** (Brigham & Women's Faulkner Hospital, South Shore Hospital, Southcoast Hospital System, Steward Carney); **Metro West** (Mt. Auburn , Marlborough Hospital, Milford Regional Medical Center, Newton-Wellesley, Steward Norwood); **North of Boston** (Hallmark Health, Lahey Hospital and Medical Center, North Shore Medical Center, Northeast Hospital (Beverly Hospital and Addison Gilbert Hospital), Steward Holy Family, Winchester Hospital); **Boston AMCs** (BMC, Tufts MC, BWH, MGH)

Notes: The bubble for Tufts MC is represented behind BIDMC, as it had the same relative price as BIDMC for BCBS in 2014.

Source: HPC analysis of 2014 relative price data in CHIA RELATIVE PRICE DATABOOK, *supra* note 129.

The relative prices of most of these hospitals did not change significantly during the time frame examined. CHA received substantial increases in relative price between 2010 and 2014; nonetheless, CHA remained one of the lowest-priced hospitals in the state in 2014.¹³¹

¹³¹ The fact that hospitals do not experience changes in relative price indicates only that their prices *relative to the market* have remained stable over time, not that there have been no changes in each hospital's prices; each of the BIDCO hospitals likely received some price increases each year, in line with general price increases across the market. Aside from CHA, BIDCO hospitals' price changes from 2010 to 2014 were within 4% of the changes in the average relative prices for hospitals in the networks of each of the three largest payers. CHA's relative prices increased during this period by 5% for BCBS, 25% for HPHC, and 18% for THP, but its composite relative price percentile (which characterizes the rank of a provider's relative price compared to other hospitals across all commercial payers) was still one of the lowest in the state in 2014 (percentile rank of 15.7). We calculated changes in blended relative price from CHIA's relative price databooks. See CHIA RELATIVE PRICE DATABOOK, *supra* note 129; CTR. FOR HEALTH INFO. & ANALYSIS, HEALTH CARE PROVIDER PRICE VARIATION IN THE MASSACHUSETTS COMMERCIAL MARKET BASELINE REPORT: APPENDIX DATA (Nov. 2012), available at <http://www.chiamass.gov/assets/docs/cost-trend-docs/cost-trends-docs-2012/price-variation-appendix-data-web-10222012.xls>; see also CTR. FOR HEALTH INFO. & ANALYSIS MASSACHUSETTS HOSPITAL PROFILES: ACUTE

Notably, as discussed in Section II.A, several hospitals have become BIDCO members relatively recently, and have yet to join all BIDCO contracts; because of this, and because the most recent hospital relative price data are from 2014, the relative prices of these hospitals may not yet reflect the impact of their affiliation with BIDCO.

5. As of 2013, BIDCO physician prices were low to mid-range among major physician groups; NEBCIO's were lower and MetroWest's (through NEQCA) were higher.

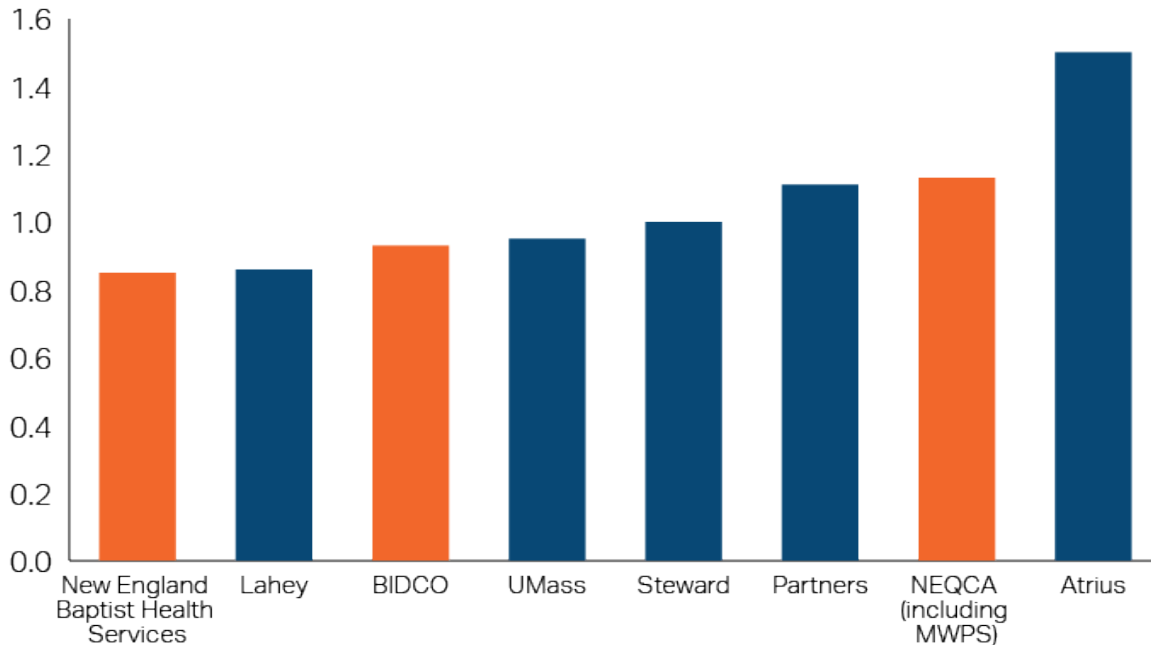
The HPC also examined physician relative price data from 2009 to 2013 for the three largest payers.¹³² Over this period, BIDCO physicians received low to mid-range prices compared to other major physician networks in Eastern Massachusetts. NEBCIO physicians generally received low relative prices compared to other major physician groups. NEQCA, the current network through which the MetroWest physicians contract, received higher physician prices than BIDCO from BCBS, but slightly lower prices than BIDCO from HPHC and THP.¹³³ Section IV.A.1 will discuss how total medical spending may be impacted if NEBCIO or MetroWest physicians were to join BIDCO contracts and receive BIDCO rates.

HOSPITAL DATA APPENDIX (Nov. 2015) [hereinafter CHIA HOSPITAL PROFILES DATABOOK], *available at* <http://www.chiamass.gov/assets/docs/r/hospital-profiles/2014/Final-FY14-Acute-Hospital-Databook.xlsx> (showing CHA's blended composite relative price percentile rank).

¹³² 2014 physician relative price data will likely be available from CHIA in late 2016.

¹³³ We characterize NEQCA's physician prices as higher than BIDCO's because the differences in their rates for BCBS (21% higher) are greater than for HPHC (6% lower) or THP (9% lower), and because BCBS accounts for a larger share of NEQCA's revenue than the other two largest payers. NEBCIO's prices are lower than BIDCO's across all three largest payers. *See* CHIA RELATIVE PRICE DATABOOK, *supra* note 129.

Relative Prices of Major Physician Groups in Eastern Massachusetts - BCBS



Source: HPC analysis of 2013 relative price data in CHIA RELATIVE PRICE DATABOOK, *supra* note 129.

6. NEBH has consistently delivered commercial inpatient orthopedic and musculoskeletal care less expensively than AMCs, including BIDMC.

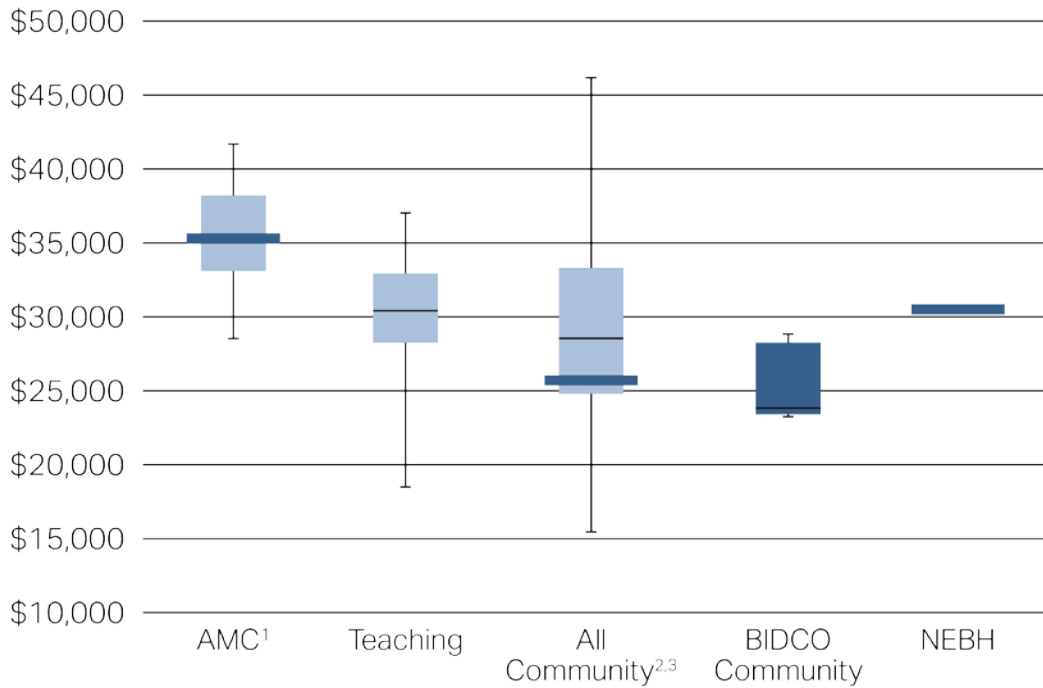
In its 2014 Cost Trends Report, the HPC examined variations in average commercial spending on episodes of orthopedic and musculoskeletal care that included hip or knee replacement in a hospital.¹³⁴ That analysis indicated that spending for low-acuity joint replacement episodes for commercial patients treated at NEBH was lower than at most AMCs, and was also lower than at some community hospitals.¹³⁵

The charts below show the parties' spending per episode for hip and knee replacements as well as the range of spending for other Massachusetts providers.

¹³⁴ MASS. HEALTH POLICY COMM'N, 2014 COST TRENDS REPORT 22-24 (Jan. 2015) [hereinafter 2014 HPC Cost Trends Report], available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/2014-cost-trends-report.pdf>.

¹³⁵ This analysis included only low-acuity adult inpatient claims in order to ensure a comparable case mix across hospitals and included only full episodes of care during 2012. MASS. HEALTH POLICY COMM'N, ADDENDUM TO 2014 COST TRENDS REPORT, TECHNICAL APPENDIX B3: HOSPITAL-LEVEL VARIATION IN SPENDING PER EPISODE OF CARE (Jan. 2015), available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/b3-episode-jan-20-2015.pdf>.

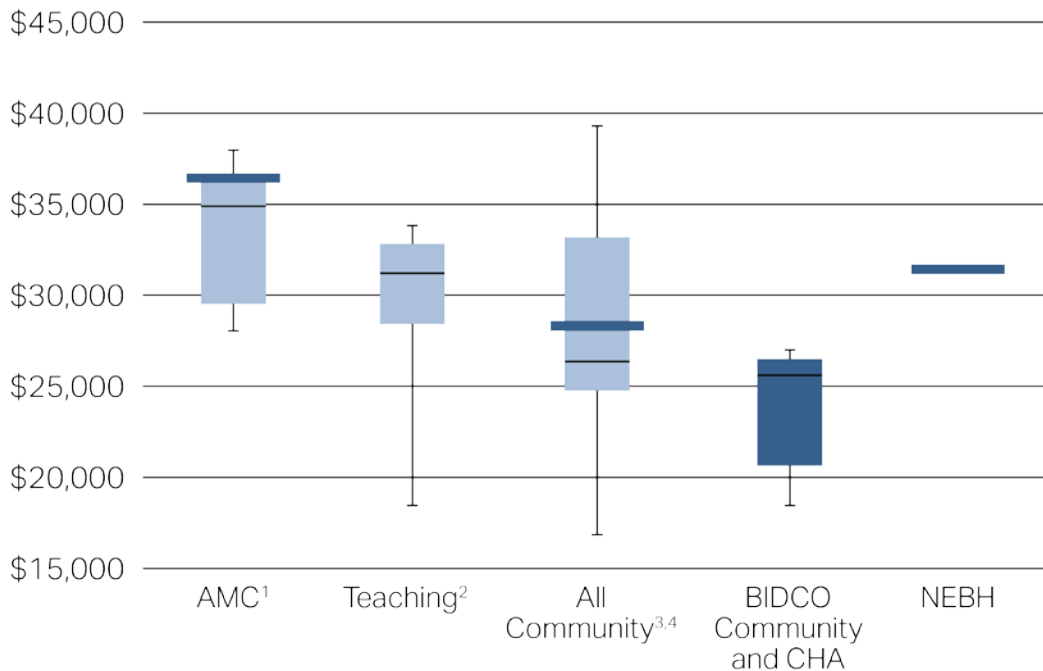
Average Spending for Hip Replacement Episodes by Hospital Type and For Party Hospitals



Notes: (1) Bold line in AMC category represents BIDMC. (2) Bold line in All Community represents MetroWest. (3) All Community category includes BIDCO community hospitals; CHA did not provide any discharges that met our criteria for an episode of low-acuity hip replacement in the study year. Hospital classifications are based on CHIA's hospital cohorts; see *Massachusetts Acute Hospital Cohorts*, CTR. FOR HEALTH INFO. & ANALYSIS, <http://www.chiamass.gov/massachusetts-acute-hospital-cohort-profiles/> (last visited Sept. 6, 2016). Blue boxes represent the range of spending between the 25th and 75th percentiles with the middle line representing the median. The capped lines represent the range of spending between the 10th and 90th percentiles.

Source: HPC analysis of 2012 APCD data; see 2014 HPC Cost Trends Report *supra* note 134.

Average Spending for Knee Replacement Episodes by Hospital Type and For Party Hospitals



Notes: (1) Bold line in AMC category represents BIDMC. (2) Teaching category includes CHA. (3) Bold line in All Community category represents MetroWest. (4) All Community category includes BIDCO community hospitals. Middle lines represent median hospital spending, blue boxes represent the range of spending between the 25th and 75th percentiles, and capped lines represent the range of spending between the 10th and 90th percentiles. Source: HPC analysis of 2012 APCD data; see 2014 HPC Cost Trends Report, *supra* note 134.

While episode spending at some community hospitals, including MetroWest and BIDCO community hospitals, tended to be lower than at NEBH, it is important to note that these spending differences do not account for the relative quality of care provided. As discussed in our prior report, the HPC found that NEBH not only had relatively efficient episode spending, but also statistically significantly better readmission and complication rates for these procedures than other hospitals examined.¹³⁶ We discuss NEBH's superior performance on these and other quality measures in more detail in Section III.B.

¹³⁶ See 2014 HPC Cost Trends Report, *supra* note 134, at 24-25.

7. As of 2014, BIDCO's health status adjusted TME was comparable to or lower than that of other major physician networks; NEQCA, the current contracting partner for MetroWest, had comparable TME to BIDCO for two of the largest payers and higher TME for the largest commercial payer.

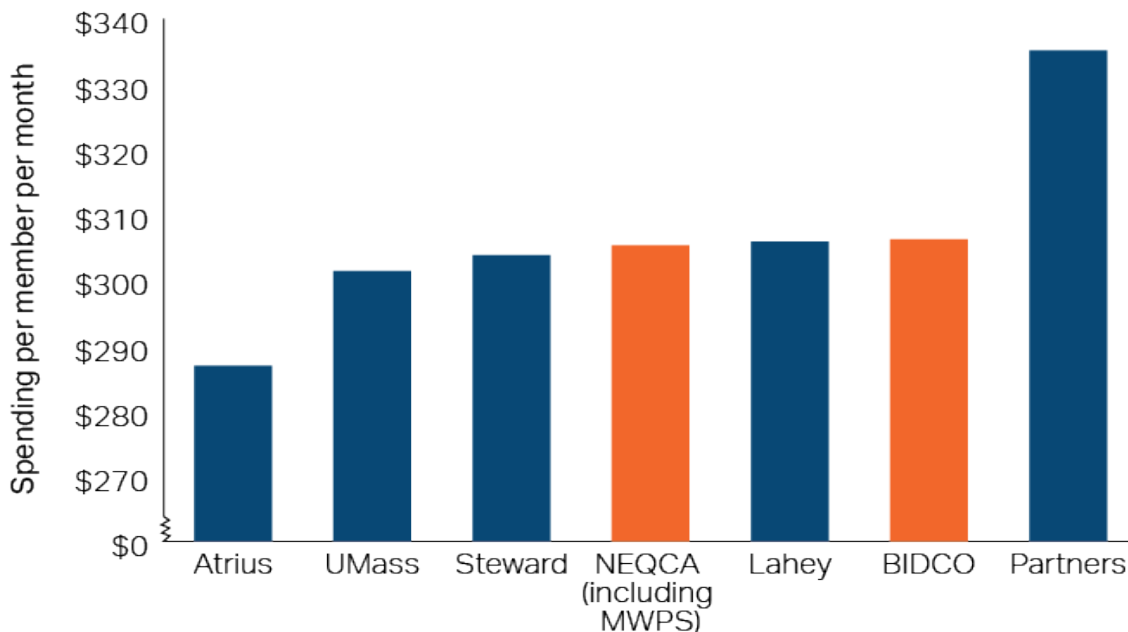
The HPC also reviewed the parties' TME from 2010 to 2014, adjusted according to the health status of the provider's patient population, to examine the total cost of health care services for patients cared for by the parties.¹³⁷ We reviewed TME for BIDCO and for NEQCA, which contracts on behalf of MetroWest physicians as described above.¹³⁸ In 2014, BIDCO's TME in was low to mid-range compared to other major physician groups in Eastern Massachusetts for all three of the largest payers. NEQCA's TME for BCBS patients was slightly higher than most major physician groups, including BIDCO, but was relatively low, and comparable to BIDCO, for both HPHC and THP.¹³⁹

¹³⁷ TME is expressed as a per member per month dollar figure that reflects the average monthly covered medical expenses paid by the payer and the member for all of the health care services the member receives in a year. TME is publicly reported by provider organization for patients who have explicitly selected a PCP affiliated with that organization (patients in HMO and POS products, which require patients to select a PCP and obtain referrals to other providers through that PCP). It is standard industry practice to adjust for health status differences when comparing TME, so a provider caring for a sicker population will not appear to have higher spending solely for that reason. TME reflects both utilization and price; high TME can reflect high utilization of services, and it can also reflect high prices of the hospitals or physicians that patients use. Since each payer calculates health status scores for its network according to its own methodology, TME should not be compared across payers.

¹³⁸ See CTR. FOR HEALTH INFO. & ANALYSIS, ANNUAL REPORT ON THE PERFORMANCE OF THE MASSACHUSETTS HEALTH CARE SYSTEM: [Databook 2: Total Medical Expenses by Payer and Physician Group](http://www.chiamass.gov/assets/docs/r/pubs/14/chia-annual-report-2014-appendix-2-tme-and-hsa-by-tme-and-payer.xlsx) (Sept. 2014) [hereinafter CHIA TME DATABOOK], available at <http://www.chiamass.gov/assets/docs/r/pubs/14/chia-annual-report-2014-appendix-2-tme-and-hsa-by-tme-and-payer.xlsx>. More detailed information on MWPS or MWAHO TME separate from NEQCA was not available from payers. TME data were not available for the few NEBCIO primary care physicians.

¹³⁹ In 2014, NEQCA's health status adjusted TME as compared to BIDCO's \$25.30 higher per member per month (approximately 8%) than BIDCO's for patients in BCBS's network, \$0.93 lower than BIDCO's for HPHC's network, and \$10.21 lower (approximately 3.4%) for THP's network. See CHIA TME DATABOOK, *supra* note 138.

Health Status Adjusted TME of Major Physician Groups in Eastern Massachusetts - HPHC



Source: HPC analysis of 2014 TME data in CHIA TME DATABOOK; *see supra* note 138.

In sum, BIDCO has significant market share both statewide and locally, and NEBH has very large market share for inpatient orthopedic and musculoskeletal services, and a smaller but still substantial share of outpatient orthopedic surgical services. While MetroWest is an important provider in its service area, its commercial inpatient market share has dropped substantially in recent years. The most recent available price data indicate that the parties' hospital and physician prices were low to mid-range relative to comparators, and NEBCIO's prices were lower than BIDCO's. NEBH has consistently delivered commercial inpatient orthopedic and musculoskeletal care less expensively than AMCs. BIDCO's health status adjusted TME was comparable to or lower than that of most other major physician networks, and NEQCA, the current contracting entity for the MetroWest physicians, generally has comparable TME to BIDCO for two of the three largest payers, though it is higher for BCBS. These measures of the parties' market share and cost performance to date will form the basis for our projections of the impacts of the proposed transactions on total health care spending and market functioning in Section IV.A.

B. CARE DELIVERY AND QUALITY BASELINE PERFORMANCE

To understand the parties' baseline performance in delivering high-quality patient care, the HPC examined the parties' core programs and policies that support the delivery of high-quality care as well as the performance of the parties' hospitals and physician groups on standard quality measures. Examining performance on quality measures highlights current areas of strength and challenges, while examining the parties' care delivery programs and policies can indicate their capacity to support quality improvement initiatives.

1. The Parties' Care Delivery Support Structures

In determining how to evaluate the parties' care delivery structures, the HPC looked to research literature as well as examples of successful care delivery models in the Massachusetts market and elsewhere. Evidence is limited as to which specific features of care delivery systems lead to successful outcomes,¹⁴⁰ and the HPC supports continued experimentation and development of new care delivery models. However, we identified and analyzed certain broad components of successful care delivery models to better understand the parties' current care delivery structures as detailed below.

Generally, we found that each of the provider organizations under review has developed certain systems and procedures designed to support effective care delivery, although their approaches vary significantly.

a. BIDCO care delivery support capabilities

BIDCO is an ACO, structured to negotiate and manage risk contracts with public and commercial payers on behalf of its members. ACOs are generally designed to support individual providers (e.g., hospitals, physician groups, and others) in enhancing care delivery, and BIDCO's care delivery support systems are designed to particularly support members in improving their performance under risk contracts, with many systems applicable only to members' risk patient populations.

For ACOs like BIDCO, the HPC has identified certain structures as likely to drive care delivery improvement in the standards for ACOs set forth in the HPC's ACO certification program.¹⁴¹ Consistent with these standards, we focused on the following set of structures and characteristics that support the delivery of high-quality, high-value care in order to assess BIDCO's efforts to support care delivery by its members.^{142, 143}

¹⁴⁰ See, e.g., Stephen M. Shortell et al., *Accountable Care Organizations: The National Landscape*, 40 J. OF HEALTH POLITICS, POLICY, AND LAW 652, 658 (2015), available at <http://jhppl.dukejournals.org/content/early/2015/06/09/03616878-3149976.full.pdf>; Carrie H. Colla et al., *First National Survey of ACOs Finds That Physicians Are Playing Strong Leadership and Ownership Roles*, 33 HEALTH AFFAIRS 964 (2014), available at <http://content.healthaffairs.org/content/33/6/964.full>.

¹⁴¹ See HPC ACO CERTIFICATION STANDARDS, *supra* note 40.

¹⁴² We note that this CMIR is not intended to serve as an evaluation of any party's qualifications to be certified as an ACO under the HPC's ACO certification program. Rather, this review is intended to highlight BIDCO's care delivery support capacities in order to identify structures that currently support care delivery improvement and which could drive improvement as a result of the transactions.

¹⁴³ See generally The Dartmouth Institute, *ACO Toolkit* (2011), available at <https://xteam.brookings.edu/bdacoln/Documents/ACO%20Toolkit%20January%202011.pdf>; Catalyst for Payment Reform and Pacific Business Group on Health, *CPR-PBGH Toolkit for Purchasers on Accountable Care Organizations* (2014), available at http://www.pbgh.org/storage/documents/ACO_Toolkit_Presentation_10515.pdf; American Medical Group Association, *Accountable Care Organization Readiness Assessment* (2010), available at <https://www.amga.org/wcm/PI/Collabs/ACO/assessTool.pdf>; Health Research and Educational Trust, *Hospital Readiness for Population-Based Accountable Care* (2012), available at http://www.hpoe.org/Reports-HPOE/hospital_readiness_population_based_accountable_care.pdf.

- *A governance structure that can facilitate engagement across participating providers and with consumers and families.* While ACOs can have a range of different governance structures, they should generally have governance structures that provide for meaningful participation by all ACO participants as well as patients and families.
- *Strategies for population health management.* ACOs should have processes to stratify the risk of their patient population and to implement and refine programs to improve outcomes for specific patient subpopulations.
- *Coordination of care across the continuum.* ACOs should support participating providers in managing patients throughout the health care system, including developing processes to track tests and referrals provided within the ACO and processes to coordinate patient transitions to and from providers outside of the ACO.
- *Use of advanced health information technology across the organization.* ACOs should have the infrastructure necessary to support electronic communication between providers within the ACO, robust data management systems, and connection to the Mass HIway. Such capacities can be implemented through a range of different electronic health record (EHR) platforms and approaches to sharing information from such systems between providers.
- *Capacity to analyze data and set targets for quality and cost performance.* ACOs should be able to collect and analyze data from various sources (e.g., claims, EHRs) to identify areas for quality and efficiency improvement and implement activities targeting those areas. ACOs should also generally have governance-level dashboard review in place to monitor their performance on measures of efficiency, quality outcomes, access, and patient experience and to allow them to set performance targets (for the ACO overall and for specific participating providers), as well as to set consistent guidelines for care within the ACO.
- *A system to distribute savings among participating providers.* Effective ACOs have mechanisms to incentivize participating providers to meet standards and goals for efficiency and quality.
- *Mechanisms to measure and address the particular needs and preferences of the ACO's patient population.* ACOs should regularly assess the needs of their patient populations, including assessing the needs of vulnerable populations and any racial or ethnic disparities in care, and develop programs to address those needs.

We examine each of these characteristics in turn.

Governance: BIDCO's governance structure is designed to engage hospital and physician group members in the leadership of the ACO. Notably, as described in Section II.A, ownership and voting shares in BIDCO are divided equally between Hospital LLC and Physician LLC, which includes both primary care and specialist representation. This means that BIDCO's hospitals and physician groups must collaborate on decision-making. In addition to these governance structures, BIDCO maintains committees of member representatives that work on specific topic areas, including quality improvement.¹⁴⁴ Through this system, it appears

¹⁴⁴ See 2016 BIDCO Committees, BETH ISRAEL DEACONESS CARE ORGANIZATION, <http://www.bidpo.org/aboutus/2016%20BIDCO%20Committees%202.pdf> (last visited Sept. 6, 2016).

that BIDCO has ensured all participants can be meaningfully engaged in governance, although we note that there appears to be a strong role granted to BIDMC and HMFP.¹⁴⁵

Population health management: BIDCO has a number of specific population health management programs designed to enhance members' performance on risk contracts. These programs, most of which are focused on Pioneer ACO patients, include programs to provide in-home care to high-risk patients, a congestive heart failure disease management program, and other initiatives to reduce unnecessary care. In addition, patients identified as being at high risk for hospitalization or readmission and who are covered under commercial risk contracts or the Medicare Pioneer program are eligible for individualized care management services from nurse care managers.¹⁴⁶ We understand that these programs are voluntary for BIDCO members, and that in some cases BIDCO may roll out the programs as pilots before making them broadly available. For these reasons, not all BIDCO members participate in all programs. Further, the programs are focused on patients covered under some risk contracts and are not universally available to any patient with a BIDCO PCP. Due at least in part to the relatively short time that these programs have existed, data on the impacts of these programs are not yet available; however, the HPC credits the potential of such efforts to improve quality and care delivery and understands that BIDCO is tracking program outcomes, suggesting that information on the impacts of these programs on quality and care delivery may be available in the future.

Cross-continuum care: BIDCO's focus on cross-continuum care appears to be primarily related to supporting care management within the BIDCO network. Several of BIDCO's population health programs promote management of care transitions and collaboration across BIDCO specialists. For example, for patients in the Pioneer ACO program, BIDCO has a waiver allowing BIDCO member providers to directly admit appropriate patients to a skilled nursing facility (SNF) and bypass the standard 3-day inpatient stay at a hospital. As part of this program, BIDCO has developed a network of preferred SNFs that are allowed to receive patients directly under the waiver and who abide by the hand-off, communication, quality, and efficiency standards as set by BIDCO.¹⁴⁷ This program enables BIDCO member providers to actively manage patients while in SNF care. To the extent that the waiver program and other population health management programs described above are operating as intended, their existence suggests BIDCO is developing the capacity to effectively support the management of cross-continuum care between hospitals, SNFs, and primary and specialty care.

¹⁴⁵ The Parties' Response disputes this characterization, stating that BIDCO's structure "does not grant [BIDMC or HMFP] disproportionate voting rights." Parties' Response, Exh. A, at 11. As discussed on page 1, the presidents of BIDMC and HMFP co-chair BIDCO's board of directors. In addition, it is the HPC's understanding that voting representation in Hospital LLC is comprised of BIDMC, which has a 50% vote, and BIDCO community hospitals, which collectively have a 50% vote. Within the community hospital group of Hospital LLC, we understand that voting shares are divided equally between the three community hospitals owned by BIDMC and the three non-owned BIDCO member hospitals. Physician LLC's structure accords a 50% vote to specialist representatives and a 50% vote to PCP representatives; HMFP currently has a majority representation among the specialist members and a plurality representation among the PCP members.

¹⁴⁶ See *Medical Management Programs*, BETH ISRAEL DEACONESS CARE ORGANIZATION, <http://www.bidpo.org/medicalmanagement/communitycase.html> (last visited Sept. 6, 2016).

¹⁴⁷ See BIDCO 2015 Cost Trends Testimony, Response to Exh. B, Q.6, *supra* note 49.

Health information technology: BIDCO does not require all members to use a single EHR platform, and the HPC understands that members use a range of different platforms. New BIDCO members (e.g., hospitals or physician practices) are generally required to adopt one of two specific EHR platforms if they are not already using one of six approved alternatives.¹⁴⁸ Most BIDCO member providers, including all of its member hospitals, participate in the Mass HIway,¹⁴⁹ and the HPC understands that BIDCO's primary approach to interoperability across different platforms is to use web-based tools that allow a user of one EHR platform to see (but not edit) a patient's record in another platform. This capability is still being developed between BIDMC and community providers, and has also been extended to some non-BIDCO clinical affiliates of BIDMC, including Atrius.

Data analytics: BIDCO has a robust infrastructure to support data analytics. BIDCO collects data from most member EHR platforms, then combines the data with claims data from payers to produce reports for physician groups and risk units identifying performance on metrics relevant to risk contracts.¹⁵⁰ We understand that BIDCO has invested significant effort in enhancing reports for risk units. The timely data in these reports may support BIDCO members in identifying and developing improvement initiatives, although the effectiveness with which risk units utilize these data likely varies.

Incentivizing participants: BIDCO also has a well-developed model for transmitting risk contract incentives throughout the ACO, focused on measuring risk unit spending relative to historic benchmarks. Generally, risk units that generate savings share in the resulting surplus, while those that spend above their benchmark forfeit withheld funds even if BIDCO as a whole has achieved savings. As a result, each risk unit is individually incentivized to achieve savings relative to its own past spending.

Addressing patient needs: BIDCO members vary considerably with respect to their core patient populations, with some serving more low-income patients and/or patients with diverse linguistic and cultural needs. While BIDCO itself has not primarily focused on enhancing the capacities of BIDCO members to provide linguistically and culturally competent care to date, some BIDCO members have prioritized providing appropriate care for patients with diverse socioeconomic, linguistic and cultural needs.¹⁵¹ To the extent that new risk contract models, in particular those being developed for Medicaid patients in Massachusetts, include incentives for such initiatives, we would anticipate that BIDCO might offer additional support to its members in this area in the future.

¹⁴⁸ See Parties' Response, Exh. A, at 11.

¹⁴⁹ See *Mass HIway Participant List*, MASSACHUSETTS HEALTH INFORMATION HIGHWAY, <http://www.masshiway.net/HPP/Resources/ParticipantList/index.htm> (last visited Sept. 6, 2016).

¹⁵⁰ BIDCO 2015 Cost Trends Testimony, Responses to Exh. B, Q.6 and 7(c), *supra* note 49.

¹⁵¹ For example, BID-Milton Hospital recently used CHART investment funds to enhance its capability to work with non-English-speaking patients from its community by hiring an on-staff Vietnamese-speaking patient navigator and creating patient materials in Vietnamese, Spanish, and Haitian Creole. MASS. HEALTH POLICY COMM'N, CHART PHASE 1 — FOUNDATIONAL INVESTMENTS FOR TRANSFORMATION (July 13, 2015), *available at* <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/chart/chart-report-final.pdf>.

b. BIDMC and HMFP care delivery capabilities

Information provided by the parties indicates that BIDMC and HMFP collaborate on internal quality and care delivery initiatives using evidence-based guidelines, EHR support, and quality metric scorecards to measure performance over time. The HPC has found that BIDMC and HMFP clinical affiliations are typically understood as complementary to BIDCO membership; as noted above, all BIDCO hospitals are BIDMC clinical affiliates. For that reason, we focus here on the care delivery capabilities that BIDMC and HMFP generally bring to clinical affiliations, such as the proposed affiliation with MetroWest.

The HPC understands that BIDMC generally works with hospital affiliates to communicate best practices related to quality and care improvement through a variety of regular and semi-regular meetings, and BIDMC and HMFP state that they often focus their work with affiliates on improving particular service lines and clinical programs. Common features of these clinical affiliations that can support reform initiatives include placement of BIDMC/HMFP physicians at affiliated hospitals, joint recruitment of clinical leadership for affiliated hospitals, and recruitment and placement of primary care physicians in communities served by affiliates.

BIDMC also uses health information technology to support cross-continuum care. BIDMC affiliates generally have access to the BIDMC EHR through a web-based tool, which can be helpful in coordinating care for patients seen at BIDMC and later at an affiliate hospital. BIDCO is also working with affiliates to provide real-time alerts when patients are admitted to a BIDMC-owned hospital or seen at a BIDMC-owned hospital's emergency department, and BIDMC, in particular, is working to expand and enhance this capability.

c. NEBH care delivery capabilities

As a specialty hospital, NEBH has focused its care delivery efforts primarily on optimizing patient care processes for orthopedic and musculoskeletal care as detailed below.

NEBH has well-developed clinical pathways to implement evidence-based guidelines for different types of orthopedic and musculoskeletal care. In particular, NEBH's Musculoskeletal Surgical Care Pathway is a robust effort to track patients across the spectrum of services required throughout a joint replacement process. Beginning with a preoperative assessment and case management and ending with a focus on appropriate use of post-acute care, this system is well-defined and has been subject to continuous improvement over time.

NEBH also has a well-defined process for coordinating care for patients transferred to post-acute care facilities. The process relies on NEBH relationships with "preferred providers," who agree to implement NEBH protocols and physician orders for NEBH patients. Further, post-acute providers have access to NEBH's EHR platform, which facilitates care coordination.

NEBH's EHR platform includes clinical registries used to track patient care processes and outcomes. NEBH states that it uses the data in the registries to examine relationships

between clinical decisions (e.g., use of particular techniques) and outcomes, so as to further refine care models.

NEBH has also developed a set of quality metrics and dashboards as well as an event reporting system. The dashboards track current performance and trends as well as identify goals for the future. NEBH states that physicians and staff are actively engaged in reviewing these metrics and outcomes and using results for future action planning.

d. MetroWest care delivery capabilities

In contrast to BIDCO and NEBH, MetroWest appears to be primarily implementing targeted care delivery and quality improvement programs using data analytics provided by its parent corporation.

MetroWest has a range of quality improvement structures established through Tenet, focused on improving performance on hospital-specific quality measures. MetroWest and Tenet produce robust quality reports and scorecards that regularly describe performance for all patients seen at the hospital. However, MetroWest has identified the need to enhance its data analytic capabilities to better leverage the patient data it collects. MetroWest also utilizes committees to identify steps to improve performance, and operates a variety of local quality initiatives, including initiatives to improve patient experience. MetroWest has also adopted Lean Daily Management strategies.¹⁵²

2. The parties' performance on standard quality measures

In addition to examining the parties' current care delivery capabilities, the HPC also examined the parties' quality performance¹⁵³ in recent years to establish a baseline from which to assess whether differences in the parties' performance could be expected to drive beneficial clinical impacts following the transactions.¹⁵⁴ We note that, given the limited focus and recent

¹⁵² Lean is a management strategy focused on “designing, performing, and continuously improving the work delivered by teams of people....” John S. Toussaint & Leonard L. Berry, *The Promise of Lean in Health Care* 88 MAYO CLINIC PROCEEDINGS 74 (2013), available at <http://www.mayoclinicproceedings.org/article/S0025-6196%2812%2900938-X/fulltext>. Adoption of Lean strategies does not guarantee improved quality or efficiency, but evidence suggests that these approaches have potential to enhance hospital operations to achieve these goals. See, e.g., INSTIT. FOR HEALTHCARE IMPROVEMENT, GOING LEAN IN HEALTH CARE (2005), available at <https://www.entnet.org/sites/default/files/GoingLeaninHealthCareWhitePaper-3.pdf>.

¹⁵³ Our analysis is based on the best available, nationally accepted measures on quality and care delivery performance. As additional measures of quality performance are developed, we look forward to incorporating them into our future work. We used the most recently available data across all measures examined; however, because data updates for some measures have lagged behind recent changes in the parties' clinical and contracting affiliations, those measures do not necessarily reflect the impacts of these more recent affiliations. We have indicated for each measure the time frame for the data we examined.

¹⁵⁴ An important factor that may increase the likelihood of a beneficial quality impact from a transaction is substantial pre-affiliation clinical superiority of one party, though differences in quality by themselves do not guarantee a transaction will result in quality improvements. See Patrick Romano & David Balan, *A Retrospective Analysis of the Clinical Quality Effects of the Acquisition of Highland Park Hospital by Evanston Northwestern Healthcare*, 18 INT. J. ECON. BUS. 45 (2011) (“[P]re-merger quality differences suggest one hospital has something of value to impart to the other”).

creation of some of the care delivery systems and programs detailed above, as well as the fact that many of the quality measures examined reflect performance in 2013 and 2014, the measures detailed below are unlikely to reflect the full impact of the care delivery systems and procedures outlined above at this point in time.

In our examination, we focused on three core domains of quality: clinical processes, clinical outcomes, and patient experience of care. After examining 76 valid and nationally endorsed measures across these domains,^{155, 156} we found that:

- BIDCO hospitals and physician groups tended to be at or above the state's average performance on most standard quality measures, but performance on individual measures varied among different BIDCO members. BIDMC performed comparably to its AMC peers.
- Currently available data do not yet show discernable impacts of BIDCO affiliation on affiliate hospitals' quality measure performance. However, clinical affiliation with BIDMC, for which there is more historic data than for affiliation with BIDCO, is correlated with improved performance on hospital affiliates' patient experience and process measures.
- NEBH performed exceptionally well on measures most relevant to its core orthopedic and musculoskeletal services, both compared to state averages and to the BIDCO hospitals. NEBCIO physician performance was not consistently better or worse than that of BIDCO physician groups.
- MetroWest¹⁵⁷ performed close to the state average on most measures, with some strengths and weaknesses relative to BIDCO hospitals and local comparators.

a. Clinical process measures

¹⁵⁵ We assessed a broad spectrum of measures capturing different segments of care, with a focus on certain measures most relevant to the proposed transactions. Where possible, measures were drawn from the Massachusetts Standard Quality Measure Set. *See* CTR. FOR HEALTH INFO & ANALYSIS, STANDARD QUALITY MEASURE SET (SQMS), <http://www.chiamass.gov/sqms/> (last visited Sept. 6, 2016).

¹⁵⁶ As discussed below, we primarily relied on hospital- and physician group-specific quality measures to assess performance of the providers under review. In addition, we examined the performance of BIDCO as a whole in its Medicare Pioneer ACO contracts, as reported by CMS, which includes data across the categories of clinical process, clinical outcomes, and patient experience. In 2013, BIDCO's performance on Pioneer measures was above the national average for all ACOs for all CMS measure domains (Patient/Caregiver Experience, Care Coordination/Patient Safety, Preventive Health, and At-Risk Population). For measures in Patient/Caregiver Experience, BIDCO's performance was near or above the 90th percentile for several metrics. In 2014, BIDCO performance improved on more measures than those that declined, and in particular showed notable improvement in the rate of depression screenings. BIDCO's overall position relative to other ACOs remained above average nationwide and did not appear to change appreciably from 2013 to 2014; in 2015, BIDCO's overall quality score for the Pioneer Program improved substantially, with BIDCO earning the highest total score among the remaining Pioneer ACOs. *See Pioneer ACO Model*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://innovation.cms.gov/initiatives/Pioneer-aco-model/> (last visited Sept. 6, 2016) (including documents showing performance results for ACOs in 2012, 2013, 2014, and 2015).

¹⁵⁷ Sources of inpatient quality data generally aggregate MetroWest's two campuses, Leonard Morse Hospital and Framingham-Union Hospital.

Clinical processes are the elements of workflow in a clinical environment, such as adherence to guidelines or the timely provision of certain accepted services. We examined the following clinical process measures and found:

- *Process measures of timely and effective care for acute myocardial infarction, heart failure, and pneumonia; and Surgical Care Improvement Project measures.*¹⁵⁸
Performance on these measures for nearly all Massachusetts hospitals was good and gradually improving; the state average for most measures in 2015 was a nearly perfect score (e.g., above 98% rate of compliance with desired process), having improved from strong scores since 2010 (e.g., 93% compliance rates). BIDCO hospital performance ranged from slightly below to slightly above average on all measures, and BIDMC was slightly above average. Available data suggest that clinical affiliation with BIDMC may be correlated with some improvement in affiliate hospitals' scores on these measures.¹⁵⁹ NEBH performed at the state average for applicable measures and MetroWest performed at or above average on all measures.
- *Ambulatory care (HEDIS) process measures.*¹⁶⁰ The HPC analyzed 19 measures of primary care performance on preventative care services, including screenings for cancer and sexually transmitted infections; management of depression, diabetes, and cardiovascular conditions; and medication follow-up and reconciliation. While some measures do not apply to NEBCIO physicians, on applicable measures NEBCIO tended to perform at or close to the state average. BIDCO's overall physician network performance tended to be at or slightly above the state average.¹⁶¹ Within BIDCO,

¹⁵⁸ In addition to examining these measures separately, the HPC used CMS Hospital Compare data to create a singular weighted composite process measure of the parties' performance for each year 2011 through 2015. The weighted process measure was composed of hospital process composites for acute myocardial infarction (AMI), pneumonia, heart failure, and surgical care improvement project (SCIP) measures. *See Measures and Current Data Collection Periods*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://www.medicare.gov/hospitalcompare/Data/Data-Updated.html#> (last visited Sept. 6, 2016) (hospital process measures in "Timely and Effective Care – Hospital" link). The HPC obtained data on these process measures at *Hospital Compare datasets*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://data.medicare.gov/data/hospital-compare> (last visited Sept. 6, 2016).

¹⁵⁹ To assess whether clinical affiliation with BIDMC or contracting affiliation with BIDCO were correlated with quality improvement at affiliated hospitals, we examined affiliating hospitals' performance using several methods, including raw scores pre- and post-affiliation, scores averaged over post-affiliation years, and difference in rates of improvement relative to state average over time. We assessed the correlation of affiliation with changes in performance across all of the hospital quality measures we examined. Based on these assessments, we found that affiliation with BIDMC appeared to be correlated with improved performance across all affiliate hospitals on hospital process measures and patient experience measures. Affiliation with BIDCO was not correlated with improved performance across all affiliates in any category of quality measures.

¹⁶⁰ *HEDIS*® and *Quality Compass*®, NAT'L COMM. FOR QUALITY ASSURANCE, <http://www.ncqa.org/HEDISQualityMeasurement/WhatIsHEDIS.aspx> (last visited Sept. 6, 2016). The HPC obtained 2010 data on HEDIS measures from Massachusetts Health Quality Partners (MHQP) and 2012 data from CTR. FOR HEALTH INFO. & ANALYSIS, 2014 PERFORMANCE SERIES, <http://www.chiamass.gov/assets/docs/r/pubs/14/2014-performance-series.zip> (last visited Sept. 6, 2016).

¹⁶¹ Analysis of ambulatory HEDIS performance is based on 2010 and 2012 data, due to constraints in data availability. However, in reviewing additional confidential material, the HPC has not seen evidence indicating that BIDCO has generally changed its position relative to comparator physician networks or to overall state performance since that time.

however, individual member physician groups exhibited a range of performance, with some above and others below the state average for different measures. Statewide average performance generally improved slightly over the most recent years for which data are available, with the parties' physician groups generally following this trend of improvement.

Overall, NEBH, BIDCO hospitals, and MetroWest all tended to perform close to the state average on hospital clinical process measures. There was more variation in the performance of the parties' physician groups than the parties' hospitals, but no physician group stood out as consistently performing above or below state average scores.

b. *Clinical outcome measures*

We examined a wide range of hospital clinical outcome measures, including composite measures of complication and mortality rates and readmission rates, as well as measures specific to hip and knee replacements and obstetrics.¹⁶²

- *Overall hospital rates of complications and mortality (AHRQ measures).* We examined the frequency that patients experienced complications as a result of hospital care using the AHRQ composite Patient Safety Indicator (PSI) 90.¹⁶³ In 2014, BIDCO hospitals, including BIDMC, performed at or near the state average on this measure. The same was true for NEBH and MetroWest.¹⁶⁴ We also examined hospital patient mortality rates using the AHRQ composites Inpatient Quality Indicator (IQI) 90 and IQI-91.¹⁶⁵ In

¹⁶² We also examined healthcare-associated infection rates (HAIs). Based on the available data, we did not find that any of the parties scored notably better or worse than the state average. We also did not identify any trends in the parties' performance over time for these measures. *Hospital Compare: Healthcare Associated Infection*, CTRS. FOR MEDICARE & MEDICAID SERVS. <https://www.medicare.gov/hospitalcompare/Data/Healthcare-Associated-Infections.html> (last visited Sept. 6, 2015). The HPC obtained data on HAI measures at *Hospital Compare datasets*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://data.medicare.gov/data/hospital-compare> (last visited Sept. 6, 2016).

¹⁶³ PSI-90 data are available at CTR. FOR HEALTH INFO. & ANALYSIS, PATIENT SAFETY, <http://www.chiamass.gov/patient-safety/> (see the "Patient Safety" tab in the "Databook (Excel)" link). For more detail on PSI measures, see *Patient Safety Indicators Overview*, AGENCY FOR HEALTHCARE RESEARCH & QUALITY http://www.qualityindicators.ahrq.gov/modules/psi_resources.aspx (last visited Sept. 6, 2016) (discussing the use of PSIs to measure the frequency of a variety of adverse outcomes and preventable harm); *Patient Safety for Selected Indicators, Technical Specifications, Patient Safety Indicators #90*, AGENCY FOR HEALTH CARE RESEARCH & QUALITY (2015), available at http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V50/TechSpecs/PSI_90_Patient_Safety_for_Selected_Indicators.pdf (showing the measures that are part of the PSI-90 health status adjusted composite) (last visited Sept. 6, 2016).

¹⁶⁴ Between 2010 and 2014, state average performance on this measure improved modestly; BID-Milton showed improved performance during this period, while the performance of most other BIDCO hospitals and NEBH was relatively stable. MetroWest, Lawrence General Hospital, BIDMC, and BID-Plymouth demonstrated slight declines in performance during this period. However, in 2014, none of these hospitals' performance was statistically different from the state average.

¹⁶⁵ The HPC computed IQI composites from CHIA hospital discharge data for 2010 through 2015 using code available from AHRQ. *Mortality for Selected Procedures: Technical Specifications, Inpatient Quality Indicators #90*, AGENCY FOR HEALTH CARE RESEARCH & QUALITY, (2015) available at http://www.qualityindicators.ahrq.gov/Downloads/Modules/IQI/V50/TechSpecs/IQI_90_Mortality_for_Selected

2015, BIDCO hospitals, NEBH, and MetroWest performed at or near the state average on both measures.¹⁶⁶

- *Readmission rates.*¹⁶⁷ In 2015, NEBH had overall hospital readmission rates that were significantly better than state averages and better than all BIDCO hospitals. BIDCO hospitals generally performed near the state average, with BIDMC slightly below average, while MetroWest performed slightly better than the state average. In general, performance on readmissions has improved across the state, and NEBH, MetroWest, and most BIDCO hospitals have followed this trend of gradual improvement over time.
- *Hip and Knee Replacement Measures.*¹⁶⁸ On measures of the frequency of complications and readmissions after hip or knee replacement, NEBH significantly outperformed the state average, as well as all BIDCO hospitals and MetroWest. This pattern was consistent over time. NEBH's performance on hip and knee replacement readmission rates likely contributed to its success in keeping overall readmission rates low, because these procedures are a large part of the hospital's total inpatient volume. BIDCO hospitals, including BIDMC, had below-average performance on hip and knee complication and readmission rates (though these differences were not statistically significant), while MetroWest's performance improved over time on both measures, and was at or near the state averages in 2015.
- *Obstetric measures.*¹⁶⁹ On measures of rates of early elective deliveries, caesarian sections (c-sections), and episiotomies, BIDCO hospitals tended to perform better than average, while MetroWest's performance was mixed. MetroWest performance was

Procedures.pdf (2015); *Mortality for Selected Conditions: Technical Specifications, Inpatient Quality Indicators #91*, available at AGENCY FOR HEALTH CARE RESEARCH & QUALITY (2015), http://www.qualityindicators.ahrq.gov/Downloads/Modules/IQI/V50/TechSpecs/IQI_91_Mortality_for_Selected_Conditions.pdf.

¹⁶⁶ State average performance improved slightly from 2011 to 2015 for IQI-90, but no party hospital showed significant change in this period. State average performance also improved slightly for the IQI-91 between 2011 and 2015, while the performance of all parties' hospitals varied throughout this period without showing a consistent trend.

¹⁶⁷ CTR. FOR HEALTH INFO. & ANALYSIS, ANNUAL REPORT ON THE PERFORMANCE OF THE MASSACHUSETTS HEALTH CARE SYSTEM, TECHNICAL APPENDIX at 5 (Nov. 2015), available at <http://www.chiamass.gov/assets/docs/r/pubs/15/2015-Focus-on-Provider-Quality-Technical-Appendix.pdf>.

¹⁶⁸ *Hospital Compare: Complication Rate for Hip/Knee Replacement Patients*, CTRS. FOR MEDICARE & MEDICAID SERVS. <https://www.medicare.gov/hospitalcompare/Data/Surgical-Complications-Hip-Knee.html> (last visited Sept. 6, 2016); *Hospital Compare: Surgical Complications – AHRQ Patient Safety Indicators*, CTRS. FOR MEDICARE & MEDICAID SERVS. <https://www.medicare.gov/hospitalcompare/Data/Serious-Complications.html> (last visited Sept. 6, 2016). The HPC obtained data on hip and knee replacement measures at *Hospital Compare datasets*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://data.medicare.gov/data/hospital-compare> (last visited Sept. 6, 2016).

¹⁶⁹ Obstetric data are available at CTR. FOR HEALTH INFO. & ANALYSIS, ANNUAL REPORT ON THE PERFORMANCE OF THE MASSACHUSETTS HEALTH CARE SYSTEM, DATA APPENDIX: A FOCUS ON PROVIDER QUALITY (Nov. 2015) [hereinafter CHIA QUALITY DATABOOK], <http://www.chiamass.gov/assets/Uploads/2015-Focus-on-Provider-Quality-Databook-UpdatedDec2015.xlsx>. For more detail on these measures, see *Maternity Care*, LEAPFROG GROUP, <http://www.leapfroggroup.org/ratings-reports/maternity-care> (last visited Sept. 6, 2016).

below the state average for episiotomy rates, close to the average for c-section rates, and better than average for early elective deliveries.

Overall during the time periods we examined, NEBH had excellent performance on applicable patient outcomes measures, BIDCO hospitals exhibited a range of performance but tended to be at or above average on most measures, and MetroWest tended to perform in the same range as BIDCO hospitals. On some measures, MetroWest showed particular improvement over time, including on overall readmission rates and hip and knee replacement readmission and complication rates.

c. Patient experience

We examined a range of patient experience measures for hospitals.¹⁷⁰ We found that overall, NEBH performed exceptionally well compared to the state average, BIDCO hospitals generally tended to perform at or near the state averages, and MetroWest tended to score slightly below average, although higher than a few BIDCO hospitals. BIDMC performed about average, similarly to other AMCs. Available data suggest that clinical affiliation with BIDMC may be correlated with some improvement in affiliate hospitals' scores on these measures.¹⁷¹ Examining performance since 2010, patient experience scores for some BIDCO hospitals improved faster than the state average, while MetroWest performance declined over this period.

We also examined primary care patient experience scores for adult populations.¹⁷² We found that in 2014, BIDCO physician groups generally performed at the state average, although across different measures, some BIDCO groups were significantly below or above the state average. Neither BIDCO, across its physician network, nor individual BIDCO physician groups demonstrated notable improvement from 2011-2014, which is consistent with trends across the state as a whole. In 2014, NEBCIO performed slightly better than average; however, earlier data were not available for comparison.

In sum, all of the parties have sought to develop structures to support care delivery and quality improvement initiatives, although their approaches vary significantly. As an ACO, BIDCO is particularly focused on supporting members' risk contract performance. To date, BIDCO member quality scores have remained generally near or slightly above the state

¹⁷⁰ *Hospital Quality Initiative: HCAHPS – Patients' Perspectives of Care Survey*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-instruments/HospitalQualityInits/HospitalHCAHPS.html> (last visited Sept. 6, 2016). The HPC obtained Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) data at *Hospital Compare datasets*, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://data.medicare.gov/data/hospital-compare> (last visited Sept. 6, 2016).

¹⁷¹ See *supra* note 159.

¹⁷² The HPC obtained and analyzed Adult and Pediatric Ambulatory Care Patient Experience Surveys for 2011 from MHQP. Data from 2013 is available at CHIA QUALITY DATABOOK, *supra* note 169 ("Primary Care Patient Experience" tab). Data from 2014 is available at CTR. FOR HEALTH INFO. & ANALYSIS, 2014 PERFORMANCE SERIES, available at <http://www.chiamass.gov/assets/docs/r/pubs/14/2014-performance-series.zip>. For more detail on this measure, see *Read About the Clinician and Group Survey (CG-CAHPS)*, AGENCY FOR HEALTH CARE RESEARCH & QUALITY, <http://www.ahrq.gov/cahps/surveys-guidance/cg/about/index.html> (last visited Sept. 6, 2016).

average, and data to date do not show that BIDCO's focused approach to supporting care delivery has had a significant impact on the overall quality scores of its members. However, this impact may become visible in later years of data, and BIDCO may continue to expand and enhance its quality improvement programs through greater resource commitments, increased provider participation, and extending its improvement programs to additional patient populations. NEBH has been focused on optimizing patient care processes, and NEBH performs exceptionally well on measures most relevant to its core orthopedic and musculoskeletal services, both compared to state averages and to BIDCO hospitals. MetroWest has focused on implementing targeted quality improvement programs using data analytics provided by its parent corporation. To date, MetroWest has generally performed close to the state average on quality measures, with some strengths and weaknesses relative to BIDCO hospitals and local comparators. These measures of the parties' care delivery structures and quality performance to date will form the basis for our projections of the impacts of the proposed transactions on quality and care delivery in Section IV.B.

C. ACCESS BASELINE PERFORMANCE

In order to understand the parties' current role in providing access to needed care, the HPC monitors a variety of factors relating to health care access in its review of provider material changes (e.g., "availability and accessibility of services," "the role of the provider in serving at-risk, underserved, and government payer patient populations, including those with behavioral, substance use disorder and mental health conditions," "[the provision of] low margin or negative margin services," and "consumer concerns").¹⁷³ Examining the parties' current role in these areas allows us to assess the potential impacts of the proposed transactions on patient access and whether the parties' plans address identifiable community needs. We evaluated the following measures of access in our review of these transactions:

1. **Payer mix:** We examined the proportion of care delivered to patients covered by different forms of insurance, including government payer patients.
2. **Service mix and community need:** We examined the proportion of care providers deliver in different service lines, including lower margin service lines.

Examining a provider's payer mix can indicate whether it attracts a larger or smaller share of one type of patient compared to other nearby providers and compared to the population living in its service area. Providers serving high proportions of patients on government insurance, in particular Medicaid, provide important points of access for patients who often face barriers to accessing care. In addition, a provider's payer mix may impact its financial and quality performance due to lower payments by government payers relative to commercial payers and socioeconomic factors that disproportionately impact the complexity and health outcomes of government payer patients. These factors can in turn incentivize providers to try to attract more commercial patients rather than Medicaid patients.¹⁷⁴ We

¹⁷³ MASS. GEN. LAWS ch. 6D, § 13(d)(vi, ix-xii).

¹⁷⁴ See, e.g., INSTITUTE OF MEDICINE, ACCESS TO HEALTH CARE IN AMERICA at 40 (Michael Millman ed., 1993) ("[M]ost structural barriers to access have their roots in the way health care is financed. Despite a greatly enlarged physician force and the existence of some 600 community health centers, many of today's poor still find it difficult

examined the payer mix of BIDCO hospitals, MetroWest, and NEBH, as measured by both share of gross patient service revenue (GPSR) and discharges.¹⁷⁵ From these analyses we found:

- BIDCO community hospitals tend to have relatively high government payer mix, and several are important safety net providers with particularly high Medicaid payer mix. Similarly, MetroWest serves a high mix of government payer patients, including a particularly high mix of Medicaid patients compared to other area hospitals.
- In contrast, both BIDMC and NEBH serve relatively low proportions of government payer patients according to the most recent available data. NEBH currently provides a very low share of orthopedic and musculoskeletal services to Medicaid patients.

We also reviewed the mix of services by major service category (medical, surgical, behavioral health, and deliveries) provided at BIDMC, BIDCO community hospitals, MetroWest, and NEBH.¹⁷⁶ Examining a hospital's service mix can indicate whether the hospital is providing a set of services that is well aligned with the needs of the patients in its PSA, whether it is providing greater access to services that may not be otherwise available, and whether it is providing a disproportionate share of services for which revenue margins tend to be low (like behavioral health) or which are likely to generate revenue in the long term (like obstetrics).¹⁷⁷

From this analysis we found that MetroWest is an important provider of behavioral health services in its service area; among BIDCO hospitals, CHA and Anna Jaques also deliver large shares of inpatient behavioral health services.

These findings are detailed below.

1. BIDCO community hospitals tend to have relatively high government payer mix, and several have particularly high Medicaid payer mix.

We examined the payer mix of BIDCO community hospitals compared to the payer mix of all patients from their PSAs who utilized inpatient care to determine, relative to the

to identify physicians who will accept Medicaid. A major reason for this dilemma is Medicaid's low reimbursement rates").

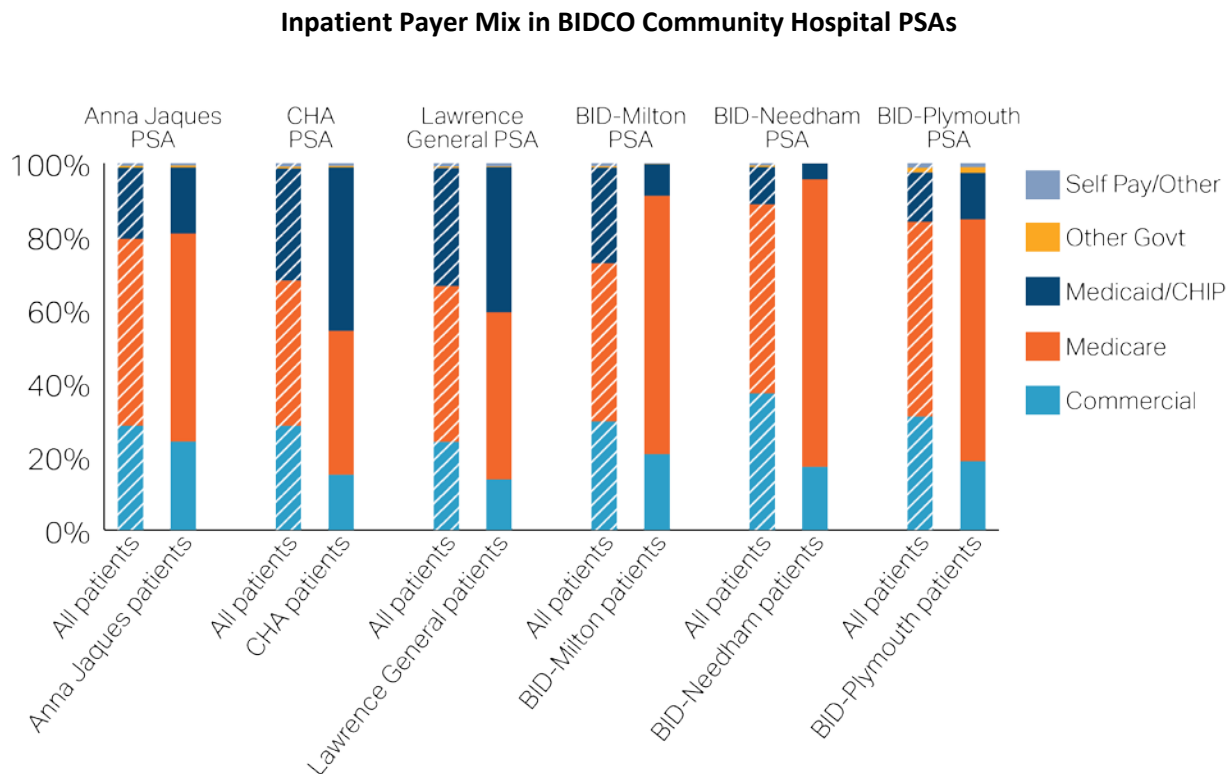
¹⁷⁵ The HPC examined the payer mix at acute care hospitals using (1) data gathered by CHIA on inpatient and outpatient GPSR by payer for 2014 (the most recent year of data available) and (2) CHIA hospital discharge data by payer for 2012 to 2015. Because GPSR represents payer mix of both inpatient and outpatient services, comparing a hospital's payer mix using these two methods indicates whether hospital is seeing more patients of each insurance type on an inpatient or outpatient basis. GPSR data are from CHIA HOSPITAL PROFILES DATABOOK, *supra* note 131.

¹⁷⁶ We examined service mix at acute care hospitals using CHIA discharge data for 2012 through 2015.

¹⁷⁷ Obstetrics can be a desirable service line because women drive many of the health care decisions for their families; a good labor and delivery experience can make it more likely that the entire family will return to the hospital in the future. *See generally* Rhoda Nussbaum, *Studies of Women's Health Care: Selected Results*, 4 THE PERMANENTE JOURNAL 62 (2000); Dagmara Scalise, *Defining and Refining Women's Health*, HOSP. & HEALTH NETWORKS MAGAZINE (Oct. 2003).

residents of the geographic area each hospital serves, the proportion of government payer patients cared for by that hospital.

We found that BIDCO community hospitals uniformly have high government payer mix compared to their PSAs.¹⁷⁸ Lawrence General and CHA also serve a large proportion of Medicaid patients compared to the payer mix of patients in their PSAs. BID-Milton, BID-Needham and, to a lesser degree, BID-Plymouth serve comparatively smaller shares of Medicaid patients; however, they all serve high shares of Medicare patients.¹⁷⁹ These patterns are shown in the graph below.



Source: 2015 CHIA hospital discharge data

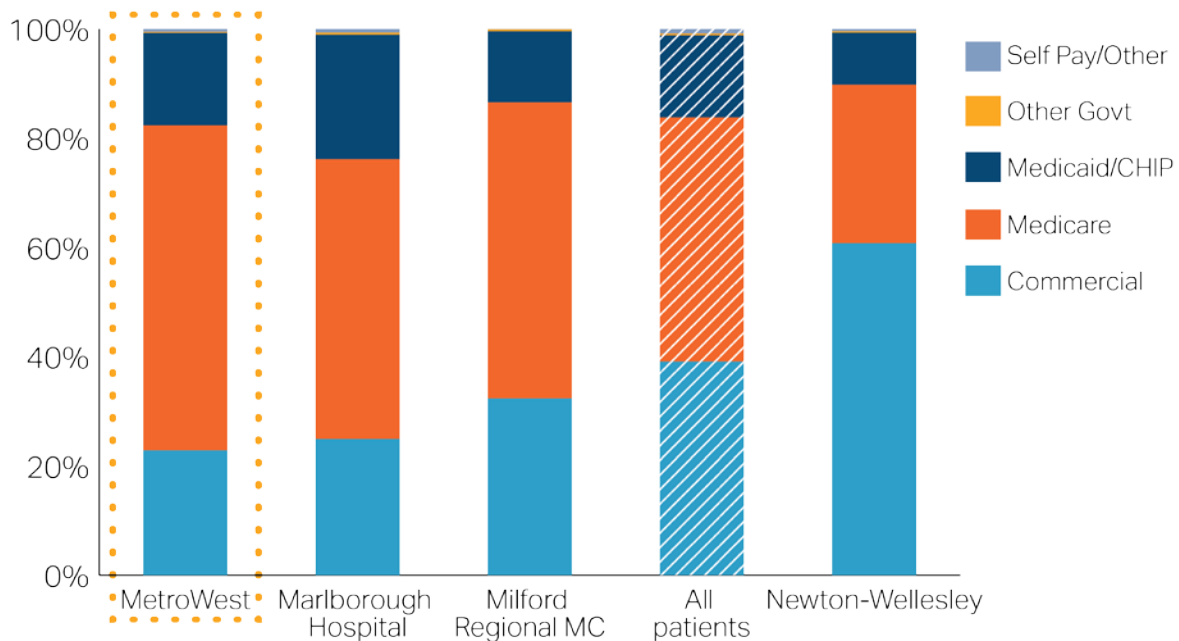
2. MetroWest also serves more government payer patients, including a larger share of Medicaid patients than most other area hospitals.

¹⁷⁸ As mentioned previously, the HPC generally defines a hospital PSA to be the contiguous area closest to a hospital from which the hospital draws 75% of its commercial discharges. *See supra* note 109. A review of payer mix by PSA is instructive because it focuses on a fixed population (the residents of a hospital's PSA). Within that fixed population, we examine the cross-section each hospital serves, and the payer mix of that cross-section. For example, in BID-Needham's PSA, residents "used" or "needed" 48,386 discharges in 2014. We then analyze the payer mix of the share (or cross-section) of those total PSA discharges provided by hospitals that serve residents of the PSA.

¹⁷⁹ Comparing the hospitals' payer mix by GPSR to their payer mix by discharges, we found that BIDCO community hospitals tended to provide a lower mix of Medicare and higher mix of commercial care on an outpatient basis; Lawrence General and Anna Jaques provided a slightly lower mix of outpatient Medicaid care, while the other BIDCO hospitals provided slightly higher mix of Medicaid care.

Similar to several of the BIDCO hospitals, MetroWest's government payer mix in its PSA is high and its Medicaid mix is particularly high compared to other local hospitals and to the payer mix of patients in its PSA.¹⁸⁰ MetroWest serves the greatest share of public payer patients from its PSA, while Newton-Wellesley receives a disproportionate share of commercial discharges. These patterns are shown in the graph below.

Inpatient Payer Mix in MetroWest's PSA



Note: Graph is in descending order of government payer patients, which is the sum of the orange (Medicare), dark blue (Medicaid/CHIP) and yellow (Other Government) bars.

Source: 2015 CHIA hospital discharge data

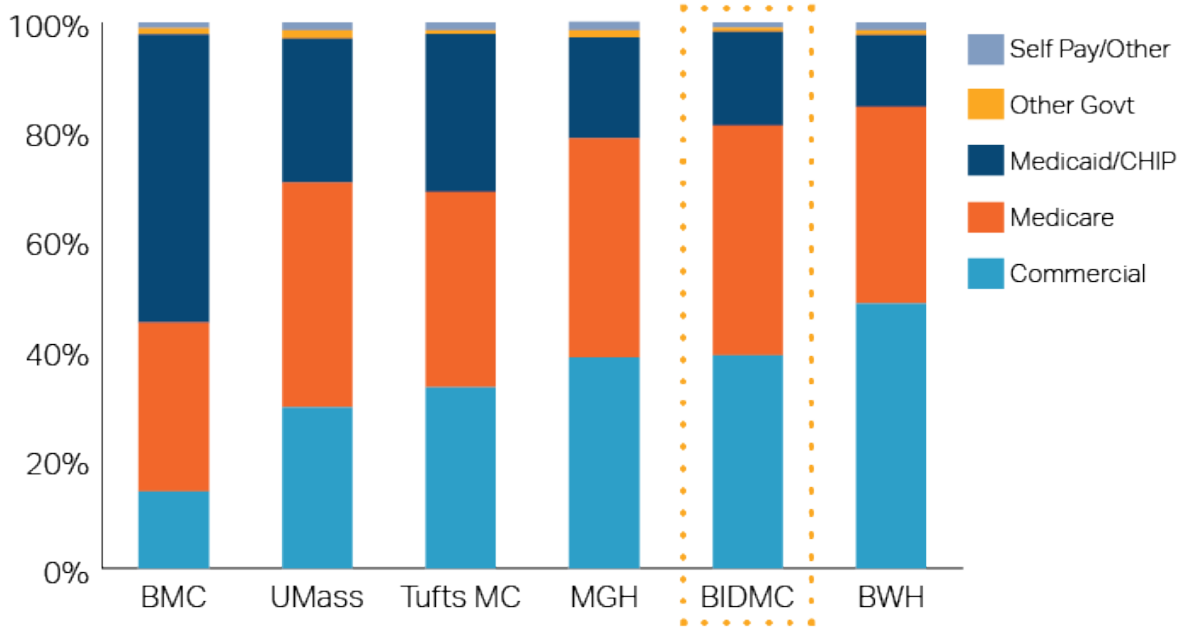
3. In contrast, both BIDMC and NEBH serve relatively low proportions of government payer patients; NEBH currently provides a very low share of orthopedic and musculoskeletal services to Medicaid patients.

We also compared BIDMC's payer mix to that of other AMCs. Compared to other AMCs, BIDMC's share of government payer patients is lower than most, including its share of Medicaid patients, as shown in the graph below.¹⁸¹

¹⁸⁰ MetroWest's had a slightly larger Medicaid mix (18.4%) and commercial mix (36.7%) by GPSR in 2014, indicating that it provided a larger share of services to these patients on an outpatient basis.

¹⁸¹ When measured by GPSR, the order of AMCs shown in the graph below does not change.

Inpatient Payer Mix at AMCs Statewide



Note: Graph is in descending order of government payer patients, which is the sum of the orange (Medicare), dark blue (Medicaid/CHIP) and yellow (Other Government) bars.

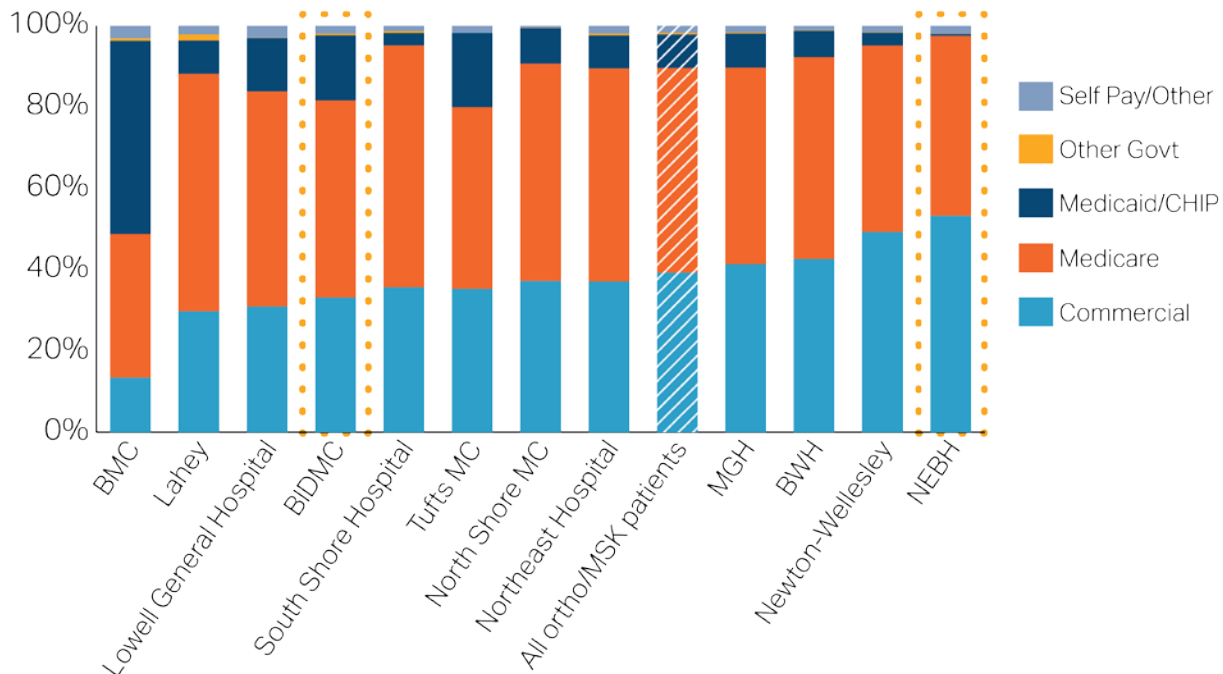
Source: 2015 CHIA hospital discharge data

NEBH's payer mix was even more heavily weighted toward commercial business in 2015: commercially insured patients made up 53.2% of its core orthopedic and musculoskeletal discharges for patients in its PSA. Medicare patients made up an additional 44.2% of discharges, while Medicaid patients made up less than 1% of its discharges.¹⁸² This pattern does not hold true for the payer mix of orthopedic and musculoskeletal patients seen at other hospitals providing these services. The chart below focuses on the core inpatient orthopedic and musculoskeletal services NEBH provides, showing the payer mix of the top 12 providers of these services to patients residing in NEBH's inpatient PSA.¹⁸³ As shown below, Boston Medical Center (BMC) had the highest mix of government payer patients (35.4% Medicare, 47.5% Medicaid) for these orthopedic and musculoskeletal services in 2015, while BIDMC had the fourth highest share (48.4% Medicare, 16% Medicaid).

¹⁸² NEBH's payer mix for all inpatient services and its payer mix by GPSR were nearly identical to its payer mix for inpatient orthopedic and musculoskeletal services.

¹⁸³ Together these hospitals account for approximately 70% of all discharges for these services for patients residing in NEBH's inpatient PSA. Based on 2015 CHIA hospital discharge data for NEBH's PSA in NEBH core services DRGs. See *supra* note 119.

Inpatient Payer Mix for Orthopedic and Musculoskeletal Services in NEBH's PSA



Note: Graph is in descending order of government payer patients, which is the sum of the orange (Medicare), dark blue (Medicaid/CHIP) and yellow (Other Government) bars.

Source: 2015 CHIA hospital discharge data

Pursuant to its clinical affiliation with BIDMC and HMFP, NEBH has taken some steps to expand access for Medicaid patients, including opening a specialty clinic within NEBH in October 2014 focused on serving Medicaid patients. NEBH has also recently seen an increase in revenue from managed Medicaid plans,¹⁸⁴ and has stated that it is committed to increasing the share of Medicaid patients it serves to be proportional to that of BIDMC over time.¹⁸⁵ While this commitment may result in increases in NEBH's Medicaid payer mix over time, we do not yet have data that show a substantial change in access to NEBH for Medicaid patients.

4. MetroWest provides a significant share of behavioral health discharges in its service area; some BIDCO community hospitals also have high shares of behavioral health services.

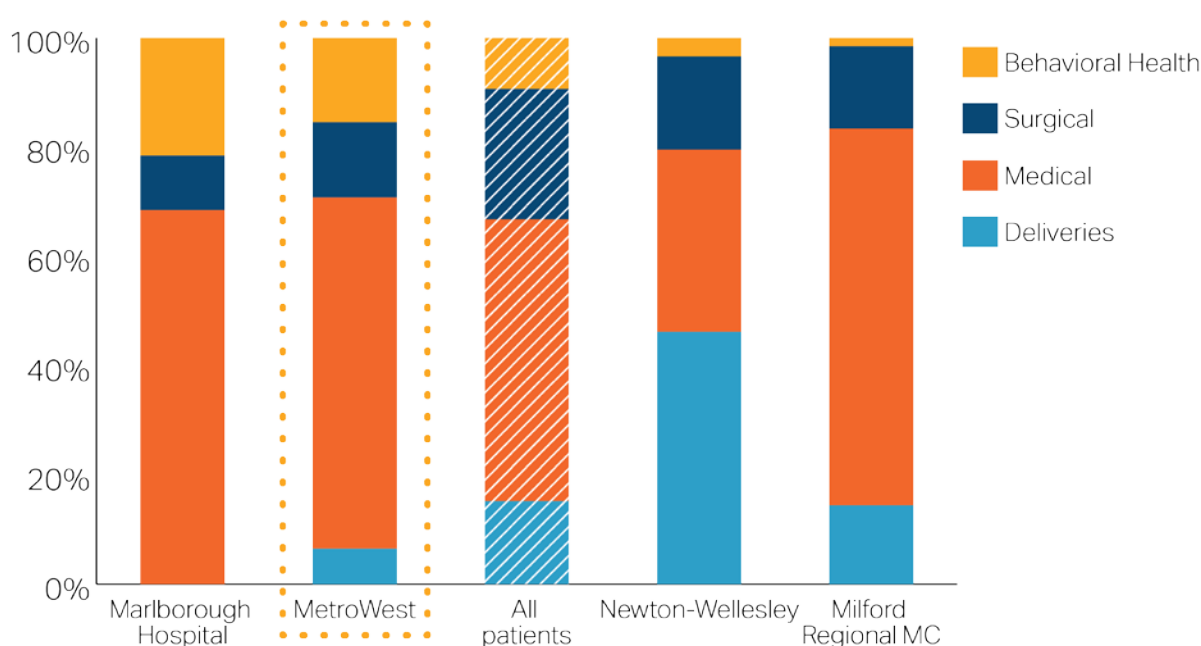
¹⁸⁴ According to CHIA Hospital Profiles data, NEBH began receiving patient service revenue from managed Medicaid plans in 2013, and received \$144,290 in GPSR from managed Medicaid plans in 2014. CHIA HOSPITAL PROFILES DATABOOK, *supra* note 131. See also *Insurances Accepted*, NEW ENGLAND BAPTIST HOSPITAL, <http://www.nebh.org/becoming-a-patient/insurances-accepted/> (last visited Sept. 6, 2016) (including managed Medicaid plans from Fallon Community Health Plan, Neighborhood Health Plan, and THP).

¹⁸⁵ Parties' Response, Exh. A, at 9.

We found that MetroWest is a key provider of inpatient behavioral health services in its PSA. With 86 psychiatric beds,¹⁸⁶ MetroWest provides over 40% of behavioral health discharges to patients living in its inpatient PSA, and mental health discharges represent a large proportion of its discharges compared to most other local hospitals.¹⁸⁷ MetroWest's volume of outpatient behavioral health visits has also grown substantially in recent years.¹⁸⁸

In contrast, MetroWest provided a low share of deliveries in 2015, generally considered to be a service line which can generate significant revenue in the long term.¹⁸⁹ Newton-Wellesley provided a disproportionately large share of deliveries from MetroWest's PSA. However, information provided by MetroWest indicates that its volume of deliveries has been increasing recently as a result of affiliations with local physician groups.

Inpatient Service Mix in MetroWest's PSA



Source: 2015 CHIA hospital discharge data

Two BIDCO community hospitals, CHA and, to a lesser extent, Anna Jaques, also provide high levels of inpatient behavioral health care to their communities. Several other

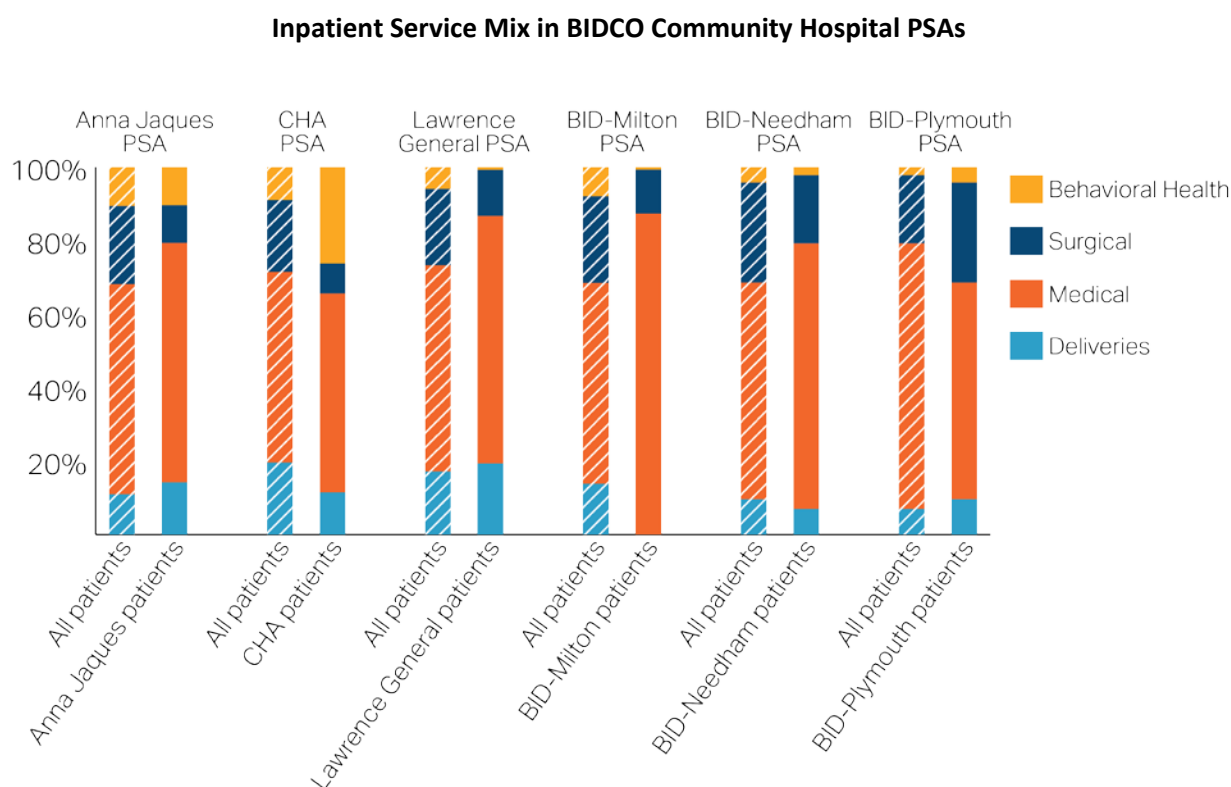
¹⁸⁶ MetroWest's psychiatric beds include 14 adolescent beds, 24 geriatric beds, and 48 adult beds.

¹⁸⁷ Based on analysis of 2010 and 2015 discharge data, MetroWest's share of commercial inpatient behavioral health volume in its PSA has grown slightly since 2010, while the share of Newton-Wellesley has declined slightly.

¹⁸⁸ A recent community needs assessment commissioned privately by MetroWest indicated a need for additional behavioral health providers in MetroWest's service area. The assessment also identified shortages of primary care providers and some other specialist providers in MetroWest's service area, including surgical subspecialists, obstetricians/gynecologists, and anesthesiologists.

¹⁸⁹ See *supra* note 177.

BIDCO community hospitals provide important outpatient behavioral health services.¹⁹⁰ In contrast, BIDMC provides a much lower share of behavioral health services as compared to its PSA, and a higher share of deliveries.



Source: 2015 CHIA hospital discharge data

In sum, based on available data, the BIDCO community hospitals uniformly serve high proportions of government payer patients compared to the payer mix in their service areas, and several serve quite high proportions of Medicaid patients. Some also provide significant behavioral health services to their communities. Similarly, MetroWest is an important safety net provider for its community, with higher government payer mix, including higher Medicaid mix, than most other local providers, as well as a higher share of behavioral health services. In contrast, both BIDMC and NEBH serve relatively low shares of government payer patients. In the most recent available data, NEBH provided a very low share of orthopedic and musculoskeletal services to Medicaid patients, although it has stated that it is committed to increasing the share of government payer patients it serves.

¹⁹⁰ These include programs at BID-Milton and BID-Plymouth supported by funding from the HPC's CHART Investment Program. The programs focus on the integration of behavioral health services in emergency departments, as well as behavioral health provider integration and hospital collaboration with community providers and other stakeholders.

IV. IMPACT PROJECTIONS (2017 ONWARD)

Building on the baseline performance and trends described above, and consistent with the HPC's charge under Chapter 224 to enhance the transparency of significant changes to the health care market that may impact health care spending and market functioning, the HPC examined the ways in which the proposed transactions may impact the competitive market, total health care spending, the quality of care the parties provide, and patient access to needed services.

A. COST AND MARKET IMPACT

One of the HPC's central responsibilities is to monitor health care spending to ensure that the Commonwealth can successfully meet the health care cost growth benchmark set forth in Chapter 224.¹⁹¹ Health care spending consists of two broad factors: price (each provider's individual rates as well as the providers to which patients are referred) and utilization (total number of services as well as the specific services that patients receive). Provider consolidations and alignments can affect both of these mechanisms, resulting in:

- Changes in prices as consolidations or alignments change the affiliations of provider organizations;
- Changes to bargaining leverage, which may allow hospitals and physicians to negotiate higher commercial prices and other favorable contract terms with commercial payers; and
- Changes in utilization or referrals as physicians shift care patterns in response to consolidations or alignments.

We examined each of these mechanisms and found that the proposed transactions could have the following impacts on total health care spending and market functioning:¹⁹²

- The transactions would increase market concentration and solidify BIDCO's position as the second largest hospital network in the Commonwealth. Specifically, the NEBH transaction would make BIDCO the largest commercial provider network for certain inpatient orthopedic and musculoskeletal services statewide and in most BIDCO hospital service areas, and the MetroWest transactions would expand the BIDCO network westward. While the resulting BIDCO hospital network will remain far smaller than the dominant system in the state, and while the proposed transactions represent contracting affiliations rather than corporate acquisitions, they could nonetheless strengthen BIDCO's ability to leverage higher prices and other favorable contract terms in negotiations with commercial payers.

¹⁹¹ MASS. GEN. LAWS ch. 6D, § 9 (requiring the HPC to establish annually "a health care cost growth benchmark for the average growth in total health care expenditures in the commonwealth," pegged to the growth rate of the gross state product).

¹⁹² Our spending impact analysis is based primarily on data from the three largest payers, which together account for approximately three-quarters of the commercial market. *See supra* note 18. As such, our cost projections tend to underestimate the total dollar impact to commercial spending.

- As NEBCIO physicians join BIDCO contracts, small to moderate increases to health care spending are likely. Changes in physician prices as MetroWest’s employed physicians join BIDCO contracts are anticipated to have little impact on total medical spending.
- The parties have remained low to mid-priced in recent years. To the extent that BIDCO *both* retains this pricing position and is successful in redirecting volume from higher priced systems to BIDCO physicians and hospitals, there is a potential for savings. However, BIDCO has had limited success to date in significantly redirecting commercially insured patients from higher-priced systems.

The remainder of this section discusses these findings in greater depth.

1. The transactions would solidify BIDCO’s position as the second largest hospital network in Massachusetts, which could strengthen its ability to negotiate price increases and other favorable contract terms.

Commercial prices for health care services are established through contract negotiations between payers and providers.¹⁹³ The results of these negotiations – prices that payers will pay for services as well as other contract terms¹⁹⁴ – are influenced by the bargaining leverage of the negotiating parties. As noted in Section II, BIDCO negotiates contracts with commercial payers in Massachusetts for its member hospitals and physicians under risk contracts, and also establishes non-risk contracts on their behalf.¹⁹⁵ Although BIDCO does not directly receive revenue under these contracts, it nonetheless has strong incentives to obtain the most favorable contract terms for all of its members.¹⁹⁶ Thus, increases in BIDCO’s market leverage that may result from the proposed transactions raise the potential for increased spending.¹⁹⁷

¹⁹³ See PARTNERS-HALLMARK CMIR FINAL REPORT, *supra* note 112, at 46.

¹⁹⁴ Contract terms include physician and hospital rates, target budgets under risk contracts, risk sharing terms, and quality incentives, all of which can impact health care spending.

¹⁹⁵ BIDCO has a limited right of first opportunity to contract on behalf of members, meaning that in most cases payers must negotiate contracts with BIDCO members through BIDCO.

¹⁹⁶ These bargaining incentives for BIDCO, which exclusively represents non-owned entities in contracting, may differ somewhat from those of corporately integrated provider systems that negotiate both on behalf of corporate affiliates and on behalf of non-integrated contracting affiliates, such as the arrangement between Partners and Hallmark discussed in a prior CMIR report. See PARTNERS-HALLMARK CMIR FINAL REPORT, *supra* note 112, at 46. As described in that report, Partners and Hallmark did not share common financial ownership (e.g., Partners did not own Hallmark’s revenue, and as such did not directly profit if Hallmark’s margins or volume increased), suggesting that their financial interests were not entirely aligned. By contrast, BIDCO is governed by all of the members for whom it establishes contracts, is directly supported by dues from all of its members, has a right to negotiate most payer contracts on behalf of its members, and exists in large part for the purpose of negotiating contracts on its members’ behalf. These factors suggest that BIDCO has strong and consistent incentives to negotiate the best possible rates on behalf of all of its members.

¹⁹⁷ The principle that a non-corporately integrated contracting network and ACO could exercise bargaining leverage is also supported by FTC and DOJ guidance regarding accountable care organizations (many of which are not corporately integrated) that notes that “under certain conditions ACOs could reduce competition and harm consumers through higher prices or lower quality of care.” FTC/DOJ ACO GUIDANCE, *supra* note 114, at 2-3; see also U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, STATEMENTS OF ANTITRUST ENFORCEMENT POLICY IN HEALTH CARE, STATEMENT 8 (Aug. 1996), <https://www.justice.gov/atr/statements-antitrust-enforcement-policy-health-care> (last visited Sept. 6, 2016).

The HPC examined whether the proposed transactions will strengthen the parties' ability to increase prices or negotiate other favorable contract terms that could ultimately increase medical spending. To examine this impact, we analyzed anticipated changes to the parties' market shares and anticipated changes in market concentration.¹⁹⁸

a. Market shares

As discussed in Section III.A.1, BIDCO hospitals now account for the second largest share of commercial discharges in the Commonwealth. Combined, the proposed transactions would solidify BIDCO's position as the second largest hospital network in Massachusetts, more than 75% larger than the next largest system, as shown in the chart below. However, Partners hospitals would still receive more than twice as many discharges as BIDCO.

Statewide Commercial Inpatient Market Share

Hospital System/Network	Share of Discharges (2010)	Share of Discharges (2013)	Share of Discharges (2015)	Share of Discharges After Affiliations
Partners	27.8%	29.8%	28.6%	28.6%
BIDCO	6.8%	7.4%	10.5%	13.4%
Lahey	2.3%	4.7%	7.6%	7.6%
UMass	7.0%	6.7%	6.8%	6.8%
Steward	5.3%	6.6%	6.1%	6.1%
Baystate Health	4.3%	4.5%	5.2%	5.2%
Wellforce	2.8% (Tufts MC); 1.9% (Lowell)	3.0% (Tufts MC); 2.7% (Lowell + Saints)	5.0%	5.0%
All Other Combined	41.9%	34.6%	30.2%	27.3%

Note: System/network shares reflect hospital affiliations in each year; *see supra* note 113.

Source: HPC analysis of 2010, 2013, and 2015 CHIA hospital discharge data

¹⁹⁸ To provide a public analysis of the likely nature of a transaction's competitive effects, our analysis mirrors many of the initial steps that would likely be included in an antitrust investigation, without repeating all of the econometric modeling of changes in competition (e.g., "willingness-to-pay" analysis) that might be pursued in a law enforcement context.

In addition to examining these overall changes in statewide market share, we also examined market shares in specific, relevant markets¹⁹⁹:

Product market: For these transactions, the HPC analyzed the potential competitive effects on inpatient orthopedic/musculoskeletal services, outpatient orthopedic surgery services, inpatient general acute care services, and adult primary care services.

Geographic market: Our analysis focuses on the likely impacts of the proposed transactions on consumers living in the inpatient PSAs of NEBH and MetroWest using information on patient-based market shares.²⁰⁰ This information shows the hospitals that patients in each of the PSAs choose for certain general acute inpatient hospital care. In addition, we studied market shares in the outpatient orthopedic surgery service area of NEBH and the primary care service area of MetroWest.²⁰¹

We found that the BIDCO-NEBH-NEBCIO transaction would give BIDCO the largest commercial market share for inpatient orthopedic and musculoskeletal services in most BIDCO hospital service areas, while also strengthening its market share for outpatient orthopedic surgical services.²⁰² The MetroWest transactions would expand the BIDCO network westward and give it the second largest share of commercial inpatient care in MetroWest's service area. For primary care services, we do not expect the proposed transactions to significantly impact the parties' market shares. These findings are detailed below.

For NEBH's inpatient core orthopedic and musculoskeletal services,²⁰³ we found that once NEBH begins contracting through BIDCO, BIDCO would have the largest commercial share of these services in NEBH's PSA (most of eastern Massachusetts), as well as the PSA of

¹⁹⁹ A relevant market includes the narrowest set of products (or hospitals) and the narrowest geography in which a hypothetical monopolist over all hospitals could sustain a small but significant non-transitory increase in price, or "SSNIP."

²⁰⁰ The HPC applied its general method for defining an inpatient hospital PSA, which focuses on the contiguous zip codes closest to the hospital from which the hospital draws 75% of its commercial discharges. For more information on the HPC's inpatient PSA methodology, see *supra* note 109. Due to NEBH's status as a specialty hospital, we defined its PSA based on its commercial patient discharges for core services. See *supra* note 119 for the HPC's definition of NEBH's inpatient core services. Although a PSA may not align precisely with a "geographic market," the DOJ and FTC use market shares within PSAs as "a useful screen for evaluating potential competitive effects." FTC/DOJ ACO GUIDANCE, *supra* note 114, at 7.

²⁰¹ See *supra* note 109 for a discussion of the HPC's primary care PSA methodology and *supra* note 125 for a description of NEBH's outpatient orthopedic surgical service area.

²⁰² FTC/DOJ guidance regarding ACOs suggests that a specialty provider joining an ACO on an exclusive basis may pose particular market concerns if it has a dominant market share in a specialty service line. See FTC/DOJ ACO GUIDANCE, *supra* note 200, at 9 (stating that a provider with greater than 50% share in its PSA in any service that no other ACO participant provides may be subject to scrutiny if it contracts exclusively through one ACO). However, NEBH's affiliation with BIDCO does not appear to pose the sorts of concerns contemplated in the guidance with respect to specialty providers, in particular because many other providers in NEBH's PSA provide the same types of orthopedic and musculoskeletal care as NEBH and, based on our calculations, NEBH provides under 30% of the discharges for its core orthopedic and musculoskeletal services in its PSA as described in Section III.

²⁰³ Due to NEBH's status as a specialty hospital, we defined its PSA based on its commercial patient discharges in its core orthopedic and musculoskeletal services, the most common services that NEBH provides to commercial patients. See *supra* note 119.

every party hospital except for CHA.²⁰⁴ In some BIDCO community hospital PSAs, BIDCO's share of these services would be more than double that of Partners.²⁰⁵

Post-Affiliation Commercial Inpatient Orthopedic and Musculoskeletal Market Share in NEBH's PSA

Hospital System/Network	Share of Orthopedic & Musculoskeletal Discharges After BIDCO-NEBH Affiliation
BIDCO + NEBH	35.3% (7.3% + 27.9%)
Partners	30.5%
Lahey	9.5%
Wellforce	6.2%
Steward	5.8%
All Other Combined	12.7%

Source: HPC analysis of 2015 CHIA hospital discharge data

For outpatient orthopedic surgical care,²⁰⁶ we also found that the NEBH transaction would result in a substantial increase in BIDCO's share of these services. Based on the most recent available data, NEBH and BIDCO would together have the second largest share of outpatient orthopedic surgery visits in NEBH's outpatient orthopedic surgery service area. While this share would still be smaller than that of Partners, it would be nearly triple the market share of Lahey, the next largest system.

²⁰⁴ In CHA's PSA, BIDCO and NEBH would have a combined share of 35.4% of orthopedic and musculoskeletal discharges, while Partners has 39.2%.

²⁰⁵ For example, the combined inpatient orthopedic and musculoskeletal shares of BIDCO and NEBH would be 55.4% in BID-Plymouth's PSA (compared to Partners' 15.9%), 54.6% in BID-Milton's PSA (compared to Partners' 22.7%), and 35.2% in Lawrence General's PSA (compared to Partners' 15.5%).

²⁰⁶ As discussed above, we used 2013 APCD claims data to identify shares of outpatient orthopedic surgeries, defined as the share of commercial patient visits at each provider. We constructed an outpatient service area for NEBH based on the zip codes from which it draws 75% of its patients for these services. *See supra* note 125.

**Post-Affiliation Commercial Outpatient Orthopedic Surgery Market Share
in NEBH's Outpatient Service Area**

System/Network	Share of Outpatient Orthopedic Surgery Visits After BIDCO-NEBH Affiliation
Partners	34.7%
BIDCO + NEBH	23.6% (11.5% + 12.1%)
Lahey	8.1%
South Shore Hospital	5.4%
Steward	5.1%
Children's Hospital	5.1%
All Other Combined	18.0%

Source: HPC analysis of 2013 APCD data

For the MetroWest transactions, we found that MetroWest joining BIDCO would expand the BIDCO network into new areas to the west of Boston, allowing BIDCO to reach additional patients. Combined, MetroWest and BIDCO would have 22.2% of commercial discharges, the second largest market share of general acute care services in MetroWest's inpatient hospital PSA. While the combined parties would still rank second to Partners hospitals, which provide 41.6% of commercial discharges in this area, they would have almost double the share of UMass, the third largest system in the area at 11.8%.²⁰⁷

Post-Affiliation Commercial Inpatient Market Share in MetroWest's PSA

System/Network	Share of Discharges After BIDCO-MetroWest Affiliation
Partners	41.6%
BIDCO + MetroWest	22.2% (8.1% + 14.1%)
UMass	11.8%
Milford Regional Medical Center	5.9%
Children's Hospital	4.2%
All Other Combined	14.2%

Source: HPC analysis of 2015 CHIA hospital discharge data

Because the proposed transactions involve only a small number of PCPs (approximately 30 in total) joining BIDCO, we found that these transactions are not likely to

²⁰⁷ NEBH receives only 2.2% of all commercial general acute care discharges in its PSA, primarily due to the large size of its PSA. Thus, NEBH joining the BIDCO network would not have a significant impact on BIDCO's share of all general acute care services in NEBH's PSA. However, by total volume of discharges, NEBH would be the second largest hospital in BIDCO after BIDMC.

result in significant changes in BIDCO's share of primary care services. However, to the extent that other MetroWest-affiliated PCPs join the BIDCO network, which is not currently part of the transaction under review, there could be a more significant impact on BIDCO's primary care market share in the future.

b. Market concentration

The change in market concentration associated with a transaction can also be indicative of the likely impact of the transaction on market leverage and the ability of the parties to negotiate higher prices.²⁰⁸ As described in more detail below, we find that the proposed transactions would result in a substantial overall increase in market concentration for inpatient orthopedic and musculoskeletal services, as well as smaller, but still significant, increases for inpatient general acute care services and outpatient orthopedic surgery services. We do not anticipate that the transactions would significantly impact market concentration for primary care services, given the small number of PCPs involved.

We calculated market concentration before and after the proposed transactions in the parties' inpatient and outpatient PSAs^{209, 210} using the Herfindahl–Hirschman Index (HHI). The HHI is a commonly used measure of market concentration and an indicator of the amount of competition among systems, and the DOJ and FTC use changes in HHIs as initial screens for determining whether a given transaction raises competitive concerns and warrants further scrutiny.²¹¹

²⁰⁸ For example, the FTC and DOJ have noted that “[m]ost studies of the relationship between competition and hospital prices generally find increased hospital concentration is associated with increased price.” U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, IMPROVING HEALTHCARE: A DOSE OF COMPETITION 1, 15 (July 2004), available at <http://www.ftc.gov/reports/healthcare/040723healthcarerpt.pdf>.

²⁰⁹ As discussed in note 114, *supra*, the DOJ and the FTC use market shares within PSAs as “a useful screen for evaluating potential competitive effects.”

²¹⁰ We did not include a similar calculation of market concentration for primary care due to data limitations. However, given the small number of PCPs involved in these transactions, we would not anticipate a significant increase in market concentration for these services.

²¹¹ See U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 5.3 (2010), available at <http://www.justice.gov/atr/public/guidelines/hmg-2010.pdf> [hereinafter FTC/DOJ HORIZONTAL MERGER GUIDELINES]. The HHI is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, for a market consisting of four firms with shares of 30, 30, 20, and 20 percent, the HHI is 2,600 (900 + 900 + 400 + 400 = 2,600). HHIs range from near 0 (perfect competition) to 10,000 (one firm with a monopoly). When firms are equally sized, the HHI is equal to 100 times the per-firm market share. For example, two firms with a 50% share each give rise to an HHI of 5,000. Three firms with 33.3% share each give rise to an HHI of 3,333, and so on.

DOJ/FTC Horizontal Merger Guideline HHI Thresholds²¹²

Post-Merger Market	HHI	Δ in HHI	Presumption
Moderately Concentrated	1,500 to 2,500	>100	Potentially raises significant competitive concerns and often warrants scrutiny
Highly Concentrated	> 2,500	100 to 200	Potentially raises significant competitive concerns and often warrants scrutiny
		> 200	Presumed to be likely to enhance market power

While HHIs are typically used in the context of corporate mergers, they may nonetheless give some indication of the scope of potential competitive effects of the proposed transactions, as BIDCO’s incentives to negotiate higher prices and other favorable contract terms on behalf of its members are similar to the incentives of corporately integrated systems.^{213, 214}

i. Changes in market concentration due to the NEBH transaction

Pre-affiliation and post-affiliation HHIs for NEBH inpatient core orthopedic and musculoskeletal services in the parties’ PSAs indicate that the proposed BIDCO-NEBH-NEBCIO transaction may strengthen the ability of the resulting contracting network to leverage higher reimbursement and other favorable contract terms. The transaction would result in nearly every party hospital’s inpatient PSA being highly concentrated for these services, and the magnitude of the HHI increases suggests that the increase in concentration could raise competitive concerns.

²¹² See *id* at 19.

²¹³ See *supra* note 196. The FTC and DOJ have also issued guidance acknowledging that non-corporately affiliated systems can impact market competition. See FTC/DOJ ACO GUIDANCE, *supra* note 114, at 2-3 (stating that “under certain conditions ACOs could reduce competition and harm consumers through higher prices or lower quality of care”).

²¹⁴ While HHIs may be a relevant screen for potential competitive effects outside of a corporate merger, other aspects of contracting affiliations suggest that they may raise somewhat lesser competitive concerns than a corporate merger. For example, the parties to a contracting affiliation may have less difficulty changing or unwinding their affiliation as compared to a corporate merger, and thus joint contracting may be less likely to result in a permanent restraint of competition. On the other hand, joint contracting arrangements that do not include shared infrastructure may also result in fewer efficiencies that could offset competitive concerns.

HHI Calculations for NEBH Inpatient Core Services in NEBH, MetroWest, and BIDCO Hospital PSAs

BIDCO-NEBH Transaction			
Hospital PSA	Pre-Affiliation HHI	Post-Affiliation HHI	Δ HHI
MetroWest	2,655	2,936	+281
NEBH	1,948	2,357	+409
BIDMC	2,314	2,803	+489
BID-Plymouth	1,927	3,459	+1,532
BID-Milton	2,357	3,611	+1,255
BID-Needham	3,365	3,981	+615
CHA	2,554	2,987	+433
Anna Jaques	1,985	2,876	+891
Lawrence General	1,771	2,307	+537

Source: HPC analysis of 2015 CHIA hospital discharge data

While these figures represent only a subset of inpatient orthopedic and musculoskeletal services, these HHI changes nonetheless indicate that NEBH joining the BIDCO network would result in a substantial consolidation of the market for those services, which could strengthen the parties' ability to leverage higher rates and other favorable contract terms.^{215, 216, 217}

²¹⁵ While BIDMC and NEBH are already affiliated through their clinical affiliation and joint venture, our HHI calculations reflect market concentration vis-à-vis negotiations with payers. Currently, NEBH and BIDMC do not jointly negotiate with payers or establish any contracts on behalf of one another. Thus payers may treat them as competitors in negotiations in a way that they will not be able to do after they begin jointly contracting; therefore, HHI figures are appropriate as a means to summarize changes in market leverage that will result from the new joint contracting relationship.

²¹⁶ BIDCO and NEBH have provided an alternate definition of the relevant product market for inpatient orthopedic and musculoskeletal services. As discussed in note 120, *supra*, the parties' definition includes many services NEBH only infrequently provides to commercial patients. Using BIDCO and NEBH's broader product market definition, the changes in HHI in every party hospital's PSA still exceed 200, and the post-affiliation HHI in each inpatient PSA except for NEBH and Lawrence General exceeds 2,500; the post-affiliation HHI in these PSAs would be 2,129 and 2,374, respectively.

²¹⁷ The potential competitive impact of the BIDCO-NEBH transaction is reinforced by results from our "diversion" analysis. Diversions provide another way to measure the potential for anticompetitive effects from a hospital merger. Applied to hospitals, diversion analyses predict where patients would go for inpatient care if a given hospital were no longer an option for its patients; a high rate of diversion from one hospital to another identifies them as close substitutes. This analysis can be probative of competitive effects because mergers between close substitutes effectively remove from the marketplace a close competitor that could otherwise have acted as a constraint on price increases. We conducted a diversion analysis to determine the extent to which NEBH and BIDCO are close substitutes, focusing only on orthopedic and musculoskeletal patients. Consistent with our HHI results, we found that BIDCO and NEBH are each other's second closest substitutes, indicating that they are competitors for these services. However, Partners is both NEBH's and BIDCO's closest substitute for orthopedic and musculoskeletal care, indicating that Partners is the parties' primary competitor for these services. See FTC/DOJ HORIZONTAL MERGER GUIDELINES, *supra* note 211, at § 6.1 (discussing the use of diversion ratios by the DOJ and FTC as a measure of competition).

Analysis of the outpatient orthopedic surgery market indicates that the market for these services is less concentrated and that it would remain only moderately concentrated after the BIDCO-NEBH affiliation. However, the shifts in HHIs indicate that there may still be some potential for competitive concerns in the market for these services.

HHI Calculations for Outpatient Orthopedic Surgery Services in NEBH Outpatient Service Area

BIDCO-NEBH Transaction			
Outpatient Service Area	Pre-Affiliation HHI	Post-Affiliation HHI	Δ HHI
NEBH	1,667	1,945	+278

Note: HHIs based on number of outpatient orthopedic surgery visits

Source: HPC analysis of 2013 APCD data

ii. Changes in market concentration due to the MetroWest transactions

As discussed above, the primary effect of the MetroWest transactions would be to expand BIDCO's geographic market reach west of Boston. The inpatient PSA of MetroWest is already moderately concentrated, and the PSA of nearby BID-Needham is highly concentrated. While the MetroWest transactions alone increase market concentration enough to raise the possibility of competitive concerns, if NEBH were also to join BIDCO, the combined increase in HHIs from the proposed transactions suggests a greater potential for competitive concerns, as shown below.²¹⁸

HHI Calculations for Inpatient General Acute Care Services in MetroWest and BID-Needham PSAs

BIDCO - MetroWest Transaction				Combined Impact of Both BIDCO Transactions		
Hospital PSA	Pre-Affiliation HHI	Post-Affiliation HHI	Change in HHI	Pre-Affiliations HHI	Post-Affiliations HHI	Change in HHI
MetroWest	2,256	2,486	+229	2,256	2,592	+335
BID-Needham	3,370	3,454	+84	3,370	3,584	+214

Source: HPC analysis of 2015 CHIA hospital discharge data

These increases in market concentration in the PSAs of MetroWest and BID-Needham also indicate that the proposed MetroWest transactions may increase the ability of the resulting

²¹⁸ Because Tenet will continue to negotiate contracts with national payers on behalf of MetroWest, while BIDCO negotiates contracts only with Massachusetts payers, the impacts of any enhanced market leverage as a result of the transaction would be limited to Massachusetts contracts.

contracting network to obtain higher reimbursement rates or other favorable contract terms, particularly if both the MetroWest and NEBH transactions move forward.²¹⁹

In sum, our market share and market concentration analyses indicate that the transactions have the potential to increase BIDCO's market leverage, but that BIDCO would still face substantial competition from Partners, which would remain the dominant provider in most service areas and service lines. We do not yet have sufficient data to assess whether and in what ways BIDCO has used any gains in market leverage to date.²²⁰ Thus, while we anticipate that these transactions could strengthen BIDCO's ability to negotiate higher prices and other favorable contract terms, the extent to which BIDCO would utilize any increased leverage as a result of these transactions to negotiate higher prices, and thus the potential impact on health care spending, is not yet clear.²²¹ It will therefore be critical to continue to monitor the growth of the BIDCO network, and any resulting price or spending increases.

2. Changes in physician prices as NEBH physicians join BIDCO contracts are anticipated to result in a small to moderate increase to total medical spending.

As described in Section II.A, BIDCO establishes both risk and non-risk commercial contracts on behalf of its physician members. To date, each of BIDCO's payer contracts has provided a uniform rate for all BIDCO physicians, but the precise timing and terms of how physicians who join BIDCO can receive BIDCO rates are governed by varied contractual provisions that are subject to renegotiation.²²²

²¹⁹ Similar to the NEBH transaction we conducted a diversion analysis (see *supra* note 217) to determine the extent to which MetroWest and BIDCO are close substitutes. In examining where MetroWest's discharges would shift if MetroWest were no longer an option for consumers, we found that BIDCO is MetroWest's third closest substitute, indicating that BIDCO and MetroWest are competitors; however, Partners is MetroWest's closest substitute, and thus its primary competitor.

²²⁰ Because hospitals that join the BIDCO network must wait until the renegotiation of their payer contracts to join BIDCO contracts, not all BIDCO hospitals have joined BIDCO contracts to date. For this reason, and because the most current relative price data predate the entry of some new members into BIDCO, we are unable to evaluate the extent to which BIDCO has sought to use its increased bargaining leverage in the past to seek higher prices and other favorable contract terms for its members. However, some of the payers interviewed by the HPC expressed concern regarding additional hospitals joining BIDCO, and indicated that BIDCO has recently sought significant price increases for newly affiliated hospitals.

²²¹ We have not conducted all of the econometric modeling of changes in competition (e.g., "willingness-to-pay" analysis) that might be pursued in a law enforcement context to assess the magnitude of the price increase that could be sought by the parties as result of increased bargaining leverage. Rather, our assessment of potential changes in market leverage is intended to provide additional context for the other spending impacts projected in this section, which are based on well-established revenue, referral pattern, and relative price data, as well as the parties' stated plans.

²²² Based on information provided by BIDCO and by the three largest commercial payers, the HPC understands that physician groups that join BIDCO do not generally need to wait for the renegotiation of payer contracts to begin billing under BIDCO contracts and receiving BIDCO rates. However, if physician groups affiliating with BIDCO have contracts with payers established through other contracting organizations, they may be obligated to complete those contracts.

Under the BIDCO-NEBH-NEBCIO affiliation, all NEBCIO physicians are expected to join BIDCO, either immediately or in the near future.²²³ We therefore modeled the potential impact on spending as a result of all NEBCIO physicians joining BIDCO contracts, based on the most recent available data regarding the rates NEBCIO physicians receive relative to BIDCO physicians and confidential information provided by the parties. In total, we found that the shift in NEBCIO physician prices to BIDCO physician prices would likely result in a small to moderate increase in total health care spending for the three largest commercial payers of up to \$4.5 million each year, representing up to a 0.04% increase in total health care spending in NEBH's service area.²²⁴ These figures do not reflect the possibility that BIDCO's increased market share may enable it to negotiate higher prices or other favorable contract terms in future contracts.

3. When MetroWest physicians join BIDCO contracts, changes in physician prices are anticipated to have little impact on total medical spending.

As described in Section II.E, MetroWest physicians, including both MWPS and the rest of MWAHO, currently contract with commercial payers through NEQCA. Under the BIDMC-HMFP-MetroWest transaction, MWPS physicians are expected to join BIDCO when their current contracts established through NEQCA expire; although not part of the current transactions, other MWAHO physicians may also join BIDCO subsequently.²²⁵ Based on the most recent available physician relative price data, we found that MWPS physicians joining BIDCO would be unlikely to result in a significant change in health care spending due to the similarity of NEQCA and BIDCO prices and the low volume of commercial care provided by MWPS. However, the impact may be greater if BIDCO's physician prices have increased in recent years relative to NEQCA's, or if BIDCO negotiates higher prices or other favorable contract terms in future contracts. The impact may also be greater if more MWAHO physicians in addition to MWPS join BIDCO.²²⁶

²²³ See Section II.F.1.

²²⁴ Based on 2013 relative price data from the three largest commercial payers, this shift would constitute a 9% increase in BCBS rates, an 18% increase in HPHC rates, and a 13% increase in THP rates. See CHIA RELATIVE PRICE DATABOOK, *supra* note 129. Because our projections are based on the most recently available physician relative price data from 2013, they may not fully reflect changes in the relative prices of the parties, including any changes due to physicians joining the BIDCO network more recently. We also reviewed confidential analyses from the parties that suggest the increase in spending as NEBCIO physicians join BIDCO contracts may be only \$1.3 million for the three largest payers, based on rates currently in effect. See Parties' Response, Exh. A, at 8. However, available data do not allow us to substantiate this analysis.

²²⁵ As noted in Section II.F.3, certain provisions of the BIDMC-HMFP-MetroWest transaction increase the likelihood that additional MWAHO physicians will join BIDCO in future.

²²⁶ Our analysis based on 2013 relative price data for the three largest commercial payers suggests a very small decrease in spending if all MWAHO physicians were to join BIDCO. However, other material we reviewed suggests the potential for a small increase in spending. BIDCO has affirmed that it would file a new notice of material change in the event that MWAHO were to join BIDCO, and we therefore expect to further evaluate the potential impact of this change if MWAHO seeks to affiliate with BIDCO in the future.

4. To the extent that BIDCO both retains its historic low to mid-range prices and is successful in redirecting volume from higher priced systems to BIDCO physicians and hospitals, there is a potential for savings. Yet, BIDCO has had limited success to date in significantly redirecting commercially insured patients from higher-priced systems.

In addition to changes in rates of reimbursement, changes in utilization patterns and use of differently priced providers also impact total medical spending. This section examines the parties' stated plans and projections, as well as other changes that appear likely as a result of the transactions based on available information, to determine whether the transactions are likely to result in changes in utilization or use of differently priced providers that may impact spending. As described in more detail below, we find that there is a potential for reduced spending if BIDCO both retains its historically low to mid-range prices and successfully redirects volume from higher priced systems, or if BIDCO hospitals adopt more efficient care delivery practices. However, based on the parties' plans and historic data on BIDCO's performance in driving such changes, we do not find a likelihood that the transactions will result in substantial savings.²²⁷

a. NEBH

- i. If BIDCO physician referral patterns for orthopedic and musculoskeletal care were to shift from AMCs to NEBH, total spending could decrease; however, it is unclear how the proposed NEBH transaction would drive such shifts in ways that the clinical affiliation between NEBH, BIDMC, and HMFP has not*

One way in which the parties claim the BIDCO-NEBH-NEBCIO affiliation will result in lower spending is the potential for BIDCO to refer more orthopedic and musculoskeletal patients to NEBH rather than to more expensive AMCs. BIDCO physician groups currently refer a substantial amount of orthopedic and musculoskeletal care to NEBH, but many BIDCO physicians' referrals for these services go to BIDMC, and approximately 11% of BIDCO physicians' commercially insured referrals for these services go to a Partners AMC.²²⁸

We agree that BIDCO and NEBH could reduce total spending by directing more orthopedic and musculoskeletal care to NEBH rather than to higher-priced hospitals, including Partners hospitals. The parties suggest that BIDCO's incentives to facilitate such a shift by its member providers include its interest in referring risk patients to the most efficient providers, and policies that encourage the use of BIDCO providers whenever appropriate. However, BIDCO providers are already significantly incentivized by risk contracts to refer risk patients to efficient providers such as NEBH,²²⁹ and BIDMC and HMFP already enjoy a close clinical affiliation with NEBH. It is not clear how NEBH's new contracting affiliation with BIDCO

²²⁷ Because these analyses are based on current prices, any increases in BIDCO's prices as a result of increased market leverage over time could cancel out or even exceed any potential cost savings.

²²⁸ This figure is based on HPC analysis of 2014 site of care data provided by the three largest commercial payers for NEBH inpatient core orthopedic and musculoskeletal services.

²²⁹ See Section III.A.6 for a discussion of NEBH's relative efficiency in providing episodes of orthopedic and musculoskeletal care.

will drive significantly more orthopedic and musculoskeletal volume to NEBH in ways that the existing incentives and relationships have not.

- ii. *If care management practices used by NEBH were adopted across the BIDCO network, total spending could decrease; however, plans for such initiatives are still in development*

The BIDCO-NEBH-NEBCIO affiliation could also result in lower total spending if NEBH's efficient utilization and referral practices influence utilization across BIDCO's provider network. NEBH's patient management programs, particularly its efficient use of post-acute care and success limiting unnecessary readmissions, make it a lower-cost, high-quality provider.²³⁰ BIDCO and NEBH have described a goal of incorporating NEBH's best practices into BIDCO's care delivery support systems to better manage orthopedic care across the BIDCO network, and have preliminarily modeled some savings estimates if they were to succeed. However, the parties are still at the planning stages of this effort, and have not yet developed certain key components, such as timelines for implementation and resource commitments, that would allow us to assess the extent to which the parties are likely to succeed.

b. *MetroWest*

- i. *Shifting MetroWest's preferred tertiary provider from Tufts MC to BIDMC is unlikely to significantly impact total health care spending*

As discussed in Section II, under the BIDMC-HMFP-MetroWest transaction, MetroWest would switch its designated referral partner for adult tertiary services from Tufts MC to BIDMC. We modeled the potential impact of this change based on the differences in relative price between BIDMC and Tufts MC and the number of patients currently referred to Tufts MC by MWAHO physicians for inpatient and outpatient care.²³¹ Despite MetroWest's current relationship with Tufts MC, there currently appears to be a very small volume of commercial referrals from MWAHO to Tufts MC. Thus, despite the fact that BIDMC's relative prices are consistently higher than those of Tufts MC, shifting this low volume of referrals to BIDMC is not anticipated to significantly impact total health care spending.

- ii. *Physicians the parties seek to recruit may shift referrals toward less expensive providers, potentially resulting in a small decrease in health care spending*

As discussed in Section II.F.3, the BIDMC-HMFP-MetroWest transaction includes plans to recruit a number of new primary care physicians in MetroWest's service area. We expect that a number of patients currently receiving care from other local providers will become patients of these new PCPs. Based on information on physician staffing by HMFP in the service areas of other community hospitals owned by or affiliated with BIDMC, and

²³⁰ See Sections III.A and III.B.

²³¹ We used site of care data from the three largest commercial payers for this analysis; two payers provided 2015 data, while the other payer provided 2014 data.

HMFP's other clinical affiliations with community hospitals, we expect the care referral patterns of these new PCPs to be in line with the referral practices of local physician groups, particularly MWAHO. Comparing the average price of hospital services for patients of MWAHO to the average price of hospital services for patients of other large area physician groups, we found that MWAHO doctors refer their patients to a slightly less expensive mix of hospitals for inpatient and outpatient care.²³² Although health care spending could decrease if the physicians recruited by the parties draw patients from physician groups with more expensive referral patterns, we do not anticipate a significant impact on spending due to this shift.²³³

- iii. *If MetroWest attracts more commercial patients currently using higher-priced community hospitals or AMCs, health care spending may decrease; however, if BIDMC receives additional referrals from MetroWest's service area, spending may increase*

One of the parties' stated goals of the MetroWest transactions is to enhance MetroWest's ability to attract local patients. If the parties' plans succeed in attracting commercial patients from MetroWest's service area who would otherwise use more expensive community hospitals, such as Newton-Wellesley, or AMCs, the shift in provider mix would result in lower health care spending.²³⁴ Attracting more patients would also likely improve MetroWest's financial performance.²³⁵ However, focusing on MetroWest physicians, who are the most likely to increase referrals to MetroWest over competing hospitals as a result of expanded services, co-branding, and other changes planned as part of the proposed transactions, the scope of savings is relatively small.²³⁶

²³² For example, for one of the largest commercial payers, the average relative price of hospitals to which MWAHO referred patients for inpatient services was 1.02, and the average price of hospitals for outpatient services was 0.83. These were lower average prices than the mix of hospitals used by two other area physician groups, which had average inpatient relative prices of 1.06 and 1.03, and average outpatient relative prices of 0.92 and 0.87.

²³³ Our projections suggest that savings would be less than \$200,000 each year across two of the three largest payers if the new physicians were recruited from two of the higher-priced physician groups in MetroWest's area.

²³⁴ The relative prices of Newton-Wellesley versus MetroWest, for example, indicate that, for the state's largest commercial payer, Newton-Wellesley is approximately 27% more expensive for inpatient care, and 12% more expensive for outpatient care. See CHIA RELATIVE PRICE DATABOOK, *supra* note 129 (based on comparison of inpatient relative price and outpatient relative price for commercial all product types combined for BCBS). Savings would also occur if MetroWest were to attract more commercial patients who currently seek care at higher-priced AMCs.

²³⁵ See Section II.E.

²³⁶ Based on HPC analysis of 2014 site of care data provided by the three largest commercial payers, MWAHO physicians already refer patients to MetroWest at a rate comparable to, and in many cases higher than, BIDCO physician groups refer to their affiliated community hospitals. Thus, our modeling indicates that, based on current relative prices, shifting all of MWAHO's inpatient and outpatient commercial referrals from Newton-Wellesley to MetroWest would result in savings of less than \$500,000 each year; yet, even a shift of this magnitude is likely improbable. Similarly, MWAHO currently refers patients to AMCs at a lower rate than BIDCO physician groups. Thus, we have not seen an indication that affiliation with BIDMC, BIDCO, or HMFP is likely to substantially reduce the frequency with which MWAHO refers care to AMCs in favor of referring such care to MetroWest.

In an effort to further quantify the likelihood that MetroWest would gain additional commercial volume as a result of the proposed transactions, we also examined the impact of prior community hospitals joining BIDCO or clinically affiliating with BIDMC on their shares of commercial discharges.^{237, 238} Our analyses indicated that, across all services, joining BIDCO has not had a clear impact on a community hospital's ability to attract more commercial patients.

We further examined the effects of affiliation on hospital choices for patients of different complexity levels. While we did not find that joining BIDCO increased overall commercial volume for BIDCO community hospitals, we did find some evidence suggesting that patients chose more appropriate sites of care after such affiliation. After a community hospital joins BIDCO, we found that patients from the hospital's PSA are less likely to go to BIDMC for lower-intensity services and more likely to go to BIDMC for higher-intensity services. However, when community hospitals have only clinically affiliated with BIDMC without joining BIDCO, we found that commercial patients from the community hospital's PSA were more likely to choose BIDMC for all types of care and less likely to stay at the community hospital for care.

Overall, these findings raise some concerns about the parties' assertions that affiliations with BIDCO and BIDMC will enhance MetroWest's ability to attract more local care, particularly in the absence of more specific plans that suggest that BIDCO will be more effective in helping to increase commercial volume at MetroWest than it has been with other BIDCO-affiliated community hospitals to date; if the affiliations instead fuel more referrals to BIDMC, this may in fact increase total health care spending.

In summary, we find that the proposed transactions would increase market concentration and solidify BIDCO's position as the second largest hospital network in the

²³⁷ Anna Jaques Hospital clinically affiliated with BIDMC in 2010 and joined the BIDCO contracting network in mid-2014; Lawrence General Hospital clinically affiliated with BIDMC in 2011 and joined the BIDCO contracting network in mid-2014; Cambridge Health Alliance hospitals clinically affiliated with BIDMC and joined the BIDCO contracting network as of January 2014; Signature Healthcare Brockton Hospital clinically affiliated with BIDMC in June 2013. Although NEBH clinically affiliated with BIDMC in February 2014, we did not use it to estimate the effects on community hospitals of affiliating with BIDMC.

²³⁸ To estimate the effect of affiliations with BIDCO and BIDMC, we applied a difference-in-differences approach to a multinomial logit hospital choice model. In each year, the hospital choice model generates estimates of each patient's probability of choosing each hospital in the choice set as a function of patient characteristics (e.g., age, diagnosis, gender, and zip code of residence), hospital characteristics (e.g., staffing levels, service offerings, and location), and the hospital's affiliation status with BIDMC or BIDCO. Interactions between these characteristics capture how they affect the probability of a patient selecting a given hospital. These interactions allow, for example, an expectant mother to place greater value on hospitals that offer labor and delivery services, or patients to be more or less willing to travel for different types of care. We use hospital fixed effects to control for any unobserved hospital characteristics (such as, for example, reputation or the quality of inpatient care) that are not captured by other hospital characteristics in our model. The effect of an affiliation with BIDCO or BIDMC is computed as the post-affiliation change in the probability that a hospital is chosen relative to the probability implied by hospital fixed effects and other control variables.

Commonwealth. The NEBH transaction would make BIDCO the largest provider network for certain inpatient orthopedic and musculoskeletal services in Massachusetts, and the MetroWest transactions would expand the BIDCO network westward. While the resulting BIDCO hospital network will remain far smaller than the dominant system in the state, and while the proposed transactions represent contracting affiliations rather than corporate acquisitions, these transactions could nonetheless strengthen BIDCO's ability to leverage higher prices and other favorable contract terms in negotiations with commercial payers.

For the proposed transaction between BIDCO and NEBH/NEBCIO, we also find a likelihood of a small to moderate increase in total health care spending of up to \$4.5 million annually for the three largest payers as NEBCIO physicians join BIDCO contracts. If the parties succeed in shifting BIDCO physicians' orthopedic and musculoskeletal referrals from more expensive providers to NEBH, or if NEBH utilization and care management practices are adopted across the BIDCO network, these changes could result in decreased spending; however, the parties' plans are not yet sufficiently developed to enable us to assess whether and to what extent such potential may be realized.

Finally, for the proposed MetroWest transactions, we found that changes in MWPS physician prices when they join BIDCO are unlikely to significantly impact total spending. Similarly, while newly recruited PCPs to MetroWest's service area could refer patients in the area to a slightly lower-priced mix of hospitals, we do not anticipate a significant impact on spending as a result of these shifts. If the parties succeed at increasing commercial volume at MetroWest by redirecting commercial care from higher-priced providers to MetroWest, we recognize that the parties could realize decreases in commercial spending; however, the historic experience of other providers joining BIDCO and the current referral patterns of MWAHO physicians suggest that such changes to patient referral patterns are unlikely to significantly impact total spending.

B. CARE DELIVERY AND QUALITY IMPACT

The parties have generally stated that each of the proposed transactions has the potential to improve the quality of patient care, although they have not claimed that specific quality gains are likely as direct results of the transactions. To determine the impact that these transactions might have on care delivery and the quality of care, we built off of the analyses of the parties' baseline care delivery and quality performance summarized in Section III.B to examine whether the parties' historic performance on quality measures suggests areas in which one party has knowledge and experience that could drive improvements by the other. We then analyzed whether the parties' plans and their structures to support improvement initiatives are likely to facilitate this exchange of best practices.

As noted in Section III.B, quality performance varies considerably across BIDCO hospitals and physician groups and across different measures. In our review of the performance of BIDCO member hospitals before and after affiliation with BIDCO, we did not yet find evidence in the most recent available data to suggest that joining BIDCO leads to hospital improvement on any specific quality measures. This finding is likely due in part to the fact that there are limited quality performance data available for years since BIDCO's formation and

since certain member providers have joined BIDCO. However, this finding may also reflect that BIDCO's population-specific efforts may be less likely to measurably affect quality performance across the full population cared for by a hospital, or that BIDCO has not yet developed effective systems to disseminate care delivery practices of higher-performing members across its network. It is therefore not clear, based on available data regarding past BIDCO affiliations, that MetroWest's or NEBH's affiliation with BIDCO alone is likely to drive quality improvement. However, we discuss potential opportunities for specific quality improvements related to each transaction below.

1. Quality impact of the BIDCO-NEBH-NEBCIO transaction

NEBH's strong performance on key measures of quality for orthopedic and musculoskeletal services relative to BIDCO hospitals as described in Section III.B.2 suggests that there is potential for NEBH to support BIDCO hospitals in improving their performance in this area.

Through its existing clinical affiliation with NEBH, BIDMC has already worked to import NEBH's Surgical Care Pathway, supported by significant resource commitments, including staffing and a robust training process.²³⁹ Due to the short time since the NEBH-BIDMC affiliation began, there is not yet evidence to indicate whether that affiliation will yield improved quality performance at BIDMC. However, the significant investment of planning and resources into the collaboration suggests a likelihood of positive results. The existing clinical affiliation between NEBH and BIDMC could also allow similar work at other BIDMC-owned hospitals, and it is our understanding that the parties intend to explore the possibility of such collaborations in the future.

It is our understanding that, through the proposed BIDCO-NEBH-NEBCIO affiliation, BIDCO could also facilitate other member hospitals' engagement with NEBH.²⁴⁰ However, while there is real potential for NEBH and BIDCO to work together to transmit NEBH care delivery mechanisms to BIDCO hospitals, it is not possible to evaluate the likelihood of such transformations and resulting quality improvement at this time. The parties have not yet defined the terms and timelines for collaboration between NEBH and other BIDCO hospitals, including any resource commitments which, based on the NEBH-BIDMC collaboration, may need to be substantial.²⁴¹

2. Quality impact of the MetroWest transactions

As described in Section III.B, MetroWest's quality performance varies across different measures. For many measures, MetroWest's performance falls within the middle range of

²³⁹ For example, as part of the opening phases of care delivery reform work under the clinical affiliation, BIDMC is dedicating staff to implement preoperative assessment, perioperative processes, discharge and rehabilitation planning, and care management and patient education. *See also* Parties' Response, Exh. A, at 10.

²⁴⁰ Based on past practice, the HPC expects that member hospitals would have discretion as to whether and to what extent they participate in these programs.

²⁴¹ The Parties' Response states only that they plan to extend "the NEBH model of care to BIDH-Needham, BIDH-Plymouth, and other select BIDCO community providers over time." Parties' Response, Exh. A, at 10.

BIDCO hospitals' performance, and in some cases MetroWest performance exceeds that of all BIDCO hospitals based on the most recent available data. However, MetroWest does have lower performance than most BIDCO hospitals on a handful of measures, including on certain measures related to obstetric quality and on patient experience ratings, suggesting that there may be a potential for quality improvement in these areas. Given that clinical affiliation with BIDMC appears to be correlated with improvements in community hospital performance on patient experience measures,²⁴² we note a particular opportunity to improve certain patient experience measures where MetroWest generally has lower performance than most BIDCO hospitals.

Although data analytics is one of BIDCO's areas of strength, we note that MetroWest already has fairly robust quality measurement in place through Tenet. It is not clear to what extent the BIDCO approach would be better than MetroWest's existing structure for supporting quality and care delivery improvement. It is likely, however, that the BIDCO analytics would be more focused on measures relevant to risk contracts, which could support MetroWest in participating in such contracts. MetroWest may also benefit from being able to participate in additional BIDCO population health management initiatives for risk patients. We understand that MetroWest has already engaged with the SNF waiver program as part of BIDCO's Pioneer ACO, and has found it to be valuable. Further development of these programs and evidence on their efficacy may indicate that their expansion can benefit MetroWest patients.

We understand that the primary focus of the clinical affiliation with BIDMC is on enhancing access to certain services in the MetroWest area and at the hospitals. There is a potential for the quality of certain services to improve with the planned co-recruitment of additional physicians to MetroWest, particularly in specialty services. Deployment of BIDMC/HMFP care pathways also has the potential to improve care delivery at MetroWest, and we also note the potential for electronic information sharing between BIDMC and MetroWest to facilitate better care transitions, avoid duplication of tests, and generally enhance care delivery and patient experience. Finally, the HPC understands that, pursuant to its agreement with BIDMC, MetroWest will undertake substantial capital investments to enhance its physical plant, some of which may serve to improve patient experience. While MetroWest could make these investments independent of the clinical affiliation, the HPC understands that the affiliation has provided a particular impetus to do so.

In sum, we find that there is a potential for quality improvement at MetroWest in a few identifiable areas as a result of the proposed transactions, and some of the parties' plans and care delivery infrastructure suggest that this potential could be realized. However, as MetroWest performance is comparable to that of most BIDCO hospitals across most quality metrics, it is unclear whether there would be a significant change in MetroWest's quality overall.

²⁴² See *supra* note 159.

C. ACCESS IMPACT

As discussed in Section II.F, the proposed NEBH transaction does not include plans for substantial changes in services at NEBH, while the MetroWest transactions would expand or enhance certain services at MetroWest or in its service area. We evaluated the parties' plans to improve access to certain services, as well as the potential impact of these plans on the vulnerable populations that the parties serve. We found:

- The parties have committed to increase the share of services NEBH provides to Medicaid patients; however, it is unclear on what timeframe such an increase will occur.
 - The MetroWest transactions may improve access to certain services in MetroWest's service area.
1. The parties have committed to increase the share of services NEBH provides to Medicaid patients; however, it is unclear on what timeframe such an increase will occur.

The contracting affiliation between NEBH and BIDCO does not include any specific proposed changes in the services available at NEBH or at BIDCO hospitals. However, the proposed NEBH transaction could provide an opportunity to expand access for Medicaid patients to quality orthopedic and musculoskeletal care given the low proportion of such patients currently served by NEBH.²⁴³ For example, NEBH could receive more Medicaid patient referrals from BIDCO physicians, or BIDCO hospitals with high Medicaid patient populations could work with NEBH to adopt systems of care that improve the quality of orthopedic and musculoskeletal services for these patients. The parties have stated that they are committed to expanding Medicaid access at NEBH so that NEBH sees a share of Medicaid patients proportionate to that of BIDMC's orthopedic patients, citing NEBH's designation by BIDCO as an "in-network" hospital for BIDCO PCPs as a key driver for such an increase.²⁴⁴ However, the timeline for such an increase is not yet clear.²⁴⁵ We expect to continue to monitor NEBH's payer mix in future.

2. The MetroWest transactions may improve access to certain services in MetroWest's service area.

As described in Section II.F, the proposed clinical affiliation between BIDMC and MetroWest would include collaboration in several specialty areas, including surgery, oncology, and obstetrics/gynecology; recruitment of specialists to staff or support specialty service lines; recruitment of new PCPs to MetroWest's service area; and discussion of potential future clinical collaborations. MetroWest has provided analysis suggesting that there is some

²⁴³ See Section III.C.3.

²⁴⁴ See Parties' Response, Exh. A, at 9.

²⁴⁵ As discussed in Section III.C.3, this commitment is part of NEBH's existing clinical affiliation with BIDMC, and it is the HPC's understanding that efforts toward this goal are expected to continue regardless of the outcome of NEBH's proposed contracting affiliation with BIDCO.

community need for additional specialists in its service area in the services identified for expansion,²⁴⁶ and the MetroWest transactions therefore have the potential to add capacity in services in line with community need. The PCPs the parties plan to recruit may also enhance access to primary care services in the region so long as they are not recruited from among physicians already practicing in the region.

As discussed in Section III.C.4, MetroWest is an important behavioral health provider in its service area, and has recently expanded its behavioral health capacity. The parties have stated a commitment to maintain MetroWest's strong behavioral health programs, and MetroWest and BIDMC have stated a commitment to facilitating access to psychiatric services for patients of new primary care practices developed through their clinical affiliation, as well as to evaluate opportunities for collaboration on behavioral health programs.²⁴⁷ We welcome these commitments given the importance of behavioral health services to MetroWest and to the Commonwealth, and look forward to observing the results of these commitments.

MetroWest also serves a large share of patients covered by government payers, including a relatively large share of Medicaid patients in its PSA. One of the goals articulated in the parties' planning documents is to increase MetroWest's ability to retain additional local patient volume. Although attracting more local commercially insured patients would result in government payer patients accounting for a smaller share of MetroWest's revenue and discharges, the hospital has sufficient capacity to serve additional commercial patients without limiting access for current patients.²⁴⁸ In addition, we welcome the parties' stated commitment that proposed new MetroWest primary care practices developed with BIDMC and HMFP will accept all payers, which may help to improve access to primary care for Medicaid patients in the area.²⁴⁹

V. CONCLUSION

As described in Section IV, the HPC found:

1. **Cost and Market Impact:** These transactions would increase market concentration and solidify BIDCO's position as the Commonwealth's second largest hospital network. The NEBH transaction would make BIDCO the state's largest provider network for certain inpatient orthopedic and musculoskeletal services, and the MetroWest transactions would expand the BIDCO network westward. These changes could strengthen BIDCO's ability to leverage higher prices and other favorable contract terms in negotiations with commercial payers. As NEBCIO physicians join BIDCO contracts, we anticipate small to moderate increases to health care spending of up to

²⁴⁶ The needs assessment provided by MetroWest was based on local population trends, utilization, and the number of physicians of each specialty serving MetroWest's region. While the HPC has not conducted its own assessment of community needs in MetroWest's service areas, we find the methodology used in the provided materials generally credible.

²⁴⁷ See Parties' Response, Exh. A, at 6-7.

²⁴⁸ MetroWest's inpatient occupancy rate in 2014 was only just over 50%. See *supra* note 93.

²⁴⁹ See Parties' Response, Exh. A, at 7.

\$4.5 million annually for the three largest commercial payers combined; changes in MetroWest physician prices are not anticipated to significantly impact spending. To the extent that BIDCO both retains its historically low to mid-range prices and is successful in redirecting volume from higher-priced systems to BIDCO hospitals and physician groups, there is the potential to reduce health care spending. However, BIDCO has had limited success to date in significantly redirecting commercially insured patients from higher-priced systems.

2. **Care Delivery and Quality Impact:** BIDCO's focus on supporting its members' risk contract performance has resulted in a set of targeted care delivery reform programs, but uniform quality improvement across BIDCO providers is not evident in the most recent available data. It is therefore not yet clear that joining BIDCO will result in measurable quality improvement for MetroWest, NEBH, or NEBCIO. NEBH's strong quality performance for orthopedic and musculoskeletal care suggests that BIDCO hospitals could benefit from adopting NEBH's care delivery systems, but the parties have not yet developed details of their plans for collaboration. While MetroWest's performance on most quality measures is already comparable to that of many BIDCO community hospitals, MetroWest's clinical affiliation with BIDMC and HMFP has the potential to improve patient experience and clinical quality for specific services that the parties have committed to enhance.
3. **Access Impact:** The parties have stated a commitment to increase access to NEBH's high-quality orthopedic and musculoskeletal care for Medicaid patients; however, the timeline for expanding Medicaid access is not yet clear. The service enhancements contemplated in the MetroWest transactions may increase access to certain needed services in MetroWest's service area. The parties have also stated a commitment to maintain MetroWest's status as an important provider of behavioral health services to the communities it serves.

In summary, we find that these transactions are anticipated to increase market concentration, solidify BIDCO's position as the second largest hospital network in the state, and could strengthen BIDCO's ability to leverage higher prices and other favorable contract terms. However, BIDCO's market share will remain far smaller than the dominant system in the state for most services. We also anticipate a small to moderate increase in spending (up to \$4.5 million annually) from changes to physician prices as the NEBCIO physicians shift to BIDCO rates.

To the extent that BIDCO retains its position as a low- to mid-priced provider network and is successful in redirecting care from higher-priced systems, there is some potential for savings. However, BIDCO has had limited success to date in significantly redirecting commercially insured patients from higher-priced systems. We also find that the MetroWest transactions may increase access to certain services, and that there is some potential for quality and care delivery improvement for both the NEBH and MetroWest transactions. The likelihood of such quality improvement will largely depend on the extent to which the parties capitalize on their respective strengths and make sufficient resource commitments to execute on their stated plans.

Recognizing the potential for both positive and negative impacts from these transactions, the HPC finds ongoing monitoring of the parties' performance necessary, including the parties' progress on stated goals of the transactions.²⁵⁰ The HPC will assess the parties' performance over time through its authority to monitor the health care market including, but not limited to, its authority to require specific written and oral testimony in connection with the HPC's annual cost trends hearings (M.G.L. c. 6D, § 8), to evaluate future transactions in light of the parties' historic performance (c. 6D, § 13), and to potentially require a performance improvement plan or cost and market impact review if a party is identified by CHIA as having excessive health care cost growth (c. 6D, § 10). However, based on our findings and the Parties' Response, the HPC declines to refer this report to the AGO pursuant to MASS. GEN. LAWS c. 6D.

²⁵⁰ As the parties state, "It is certainly reasonable to expect that Parties will, in time, have more data to support their positions" that BIDCO membership and BIDMC clinical affiliations will lead to improved efficiency and quality performance, and that the proposed transactions will also yield positive results in these "impact domains." Parties' Response, Exh. A, at 6.



COMMONWEALTH OF MASSACHUSETTS HEALTH POLICY COMMISSION

Commissioners

Dr. Stuart Altman

Chair

Dr. Wendy Everett

Vice Chair

Dr. Carole Allen

Dr. Don Berwick

Dr. David Cutler

Mr. Martin Cohen

Mr. Rick Lord

Mr. Ron Mastrogiovanni

Ms. Veronica Turner

Ms. Marylou Sudders

*Secretary of Health and
Human Services*

Ms. Kristen Lepore

*Secretary of
Administration and
Finance*

Executive Director

Mr. David Seltz

Acknowledgements

Sasha Hayes-Rusnov, Project Manager for Market Performance, Megan Wulff, Deputy Director for Market Performance, and Amy Katzen, Project Manager for Market Performance, prepared this report under the direction of Katherine Scarborough Mills, Director of Policy for Market Performance, with significant contributions by Samuel Breen, Elizabeth Reidy, Jennifer Huer, Karbert Ng, Katherine Shea Barrett, Kaitlin Parker, and Lois Johnson.

The HPC wishes to acknowledge the analytic support provided by Bates White, LLC, Freedman Healthcare, LLC, Gorman Actuarial, Inc., and Health Management Associates, Inc.

The HPC would also like to thank the health insurers and providers who provided information for this report for their courtesy and cooperation.

Health Policy Commission
50 Milk Street, 8th Floor
Boston, MA 02109
www.mass.gov/HPC
(617) 979-1400
HPC-Info@state.ma.us

Exhibit A:

**Beth Israel Deaconess Care Organization, Beth Israel
Deaconess Medical Center, Harvard Medical Faculty
Physicians at Beth Israel Deaconess Medical Center,
MetroWest Medical Center, and New England Baptist
Hospital and New England Baptist Clinical Integration
Organization's Response to Preliminary Report**

RESPONSE ON BEHALF OF

BETH ISRAEL DEACONESS CARE ORGANIZATION

BETH ISRAEL DEACONESS MEDICAL CENTER

HARVARD MEDICAL FACULTY PHYSICIANS AT BETH ISRAEL
DEACONESS MEDICAL CENTER

METROWEST MEDICAL CENTER

NEW ENGLAND BAPTIST HOSPITAL AND
NEW ENGLAND BAPTIST CLINICAL INTEGRATION
ORGANIZATION

TO THE

COST AND MARKET IMPACT REVIEW PRELIMINARY REPORT

ISSUED BY

The Massachusetts Health Policy Commission

REGARDING

HPC-CMIR-2015-1

HPC-CMIR-2015-2

HPC-CMIR-2016-1

RESPONSE ORGANIZATION

Given the Health Policy Commission's ("HPC") decision to present its Cost and Market Impact Review ("CMIR") of transactions identified as HPC-CMIR-2015-1¹, HPC-CMIR-2015-2², and HPC-CMIR-2016-1³ in a single Preliminary Report (the "Report") dated July 27, 2016, all entities involved in the aforementioned transactions (together, the "Parties") have agreed to respond in kind.

This joint response addresses issues raised in the Report and the themes identified by HPC Commissioners on August 1, 2016 after Report issuance. The response is organized as follows:

- **SECTION I:** The first section comments on the Report's characterization of Parties (BIDCO, in particular) and addresses key Report statements, methodologies, and conclusions across transactions;
- **SECTION II:** The second section attends to Report findings that are unique to one of the transactions and/or one of the Parties; and
- **SECTION III:** The final section is a list of more technical clarifications to information presented in the Report.

INTRODUCTION

We appreciate the HPC's significant effort in producing the Report and the highly collaborative approach to working with Parties during Report development. The Parties agree with a number of Report statements and findings, and believe it effectively highlights the existing disparities and competitive realities unique to the Eastern Massachusetts health care market. The Parties concur with the HPC that the proposed transactions have the potential to yield savings and improve care delivery, access, and quality. We appreciate that it is difficult to quantify these potential benefits at this time for reasons indicated in the Parties' initial CMIR submissions and reiterated in this response.

As referenced above, the intent of this response is to document the Parties' reactions to Report methodologies and findings, and propose additional considerations and reasonable alternative interpretations. In addition, the response will comment on, and, to the extent possible, address, priority concerns noted in the Report and by the Commissioners.

SECTION I: REPORT FINDINGS ACROSS TRANSACTIONS

The HPC consolidates into one review the combined efforts of the Parties under more than one affiliation and more than one *type of* affiliation. While understandable, it may make it more difficult to distinguish between and/or precisely portray the respective roles of each Party. Though we appreciate that the relationships between and functions of BIDCO, BIDMC, and HMFP are complex and interconnected (with regard to these transactions and in general), the Parties' initial submissions to the HPC supplied information and statements that could have added beneficial clarity to the Report.

1 HPC-CMIR-2015-1: Beth Israel Deaconess Care Organization ("BIDCO") proposed contracting affiliation with New England Baptist Hospital ("NEBH") and New England Baptist Clinical Integration Organization ("NEBCIO").

2 HPC-CMIR-2015-2: BIDCO proposed contracting affiliation with MetroWest Medical Center ("MetroWest").

3 HPC-CMIR-2016-1: Beth Israel Deaconess Medical Center ("BIDMC") and Harvard Medical Faculty Physicians at BIDMC ("HMFP") proposed clinical affiliation with MetroWest.

CLARIFICATION ON BIDCO AND RELATED IMPLICATIONS

The number of ways that BIDCO, in particular, is depicted may be especially confusing given the Report's disproportionate reference to and focus on BIDCO relative to other Parties. It is important to clarify BIDCO's purpose and role(s) since any ambiguity may affect the appropriateness and reasonableness of Report findings.

BIDCO is an Accountable Care Organization (ACO) comprised of and governed by physicians and hospitals on a membership basis. Members pay dues to use BIDCO as a vehicle to share risk, exchange information, manage cost and quality, coordinate care, and contract with payers. BIDCO is not a corporately integrated system, and thus does not own or operate any hospitals or physician groups. BIDCO does not deliver patient care, and thus does not generate any patient revenue. Though these concepts are alluded to in the Report, BIDCO is referred to as a hospital network and physician network, among other terms.⁴ Phrases such as "BIDCO Care Delivery Capabilities" (p. 40) and "BIDCO refers..." (p. 70) reiterate the sense that BIDCO is directly involved in or responsible for care delivery and clinical decision-making. Similarly, the Report characterizes BIDCO as a "close substitute" for NEBH (p. 67, n. 207) and MetroWest (p. 69, n. 209), as if BIDCO itself provided patient care, and as though BIDCO member hospitals were not separately licensed, owned, and governed provider organizations.

Though many of the terms used to describe BIDCO are reasonable, taken together, they may be misleading. The use of mixed terminology and various comparator groups may confuse rather than clarify the roles and contributions of each BIDCO member (current or proposed), and of BIDCO itself. More important than any one instance of a questionable BIDCO characterization is that the sum of members' collective parts and attributes are pooled and then "assigned" to BIDCO for analysis and comparison. As an example, current and proposed future BIDCO member hospital beds and inpatient market share are combined and compared to corporately-integrated health systems⁵ in order to opine on market position. In fact, this methodology leads to a key Report conclusion that these transactions will "...solidify BIDCO's position as the second largest hospital network in the state...". PLEASE NOTE THAT THE FOLLOWING SUB-SECTION – REVIEW OF SELECT FINDINGS AND THEMES – PRESENTS ADDITIONAL CONSIDERATIONS REGARDING THIS PARTICULAR CONCLUSION.

The Parties recognize that the Report offers a rationale for using corporately-integrated hospital networks as a proxy for BIDCO, but note that there are other schools of thought and precedent pertaining to treatment of ACOs and non-corporately integrated networks that are not cited or utilized. And while the rationale provided may support treatment of BIDCO as a hospital network *or* a physician network *or* an ACO, the Report treats BIDCO as all of these simultaneously, which may distort analyses and findings. It is thus unclear which role and related indicators should be considered primary in assessing baseline position and potential impact of transactions. With regard to indicators, the Parties also note that primary market position conclusions rely on hospital-centric measures, and there is a seeming absence of metrics typically used to evaluate ACO size and success, such as covered lives/member months or value-based-contract performance.

ADDITIONAL ANTITRUST IMPLICATIONS

The HPC has a critical role in reviewing proposed transactions among health care organizations in order to improve cost, quality, and access, and its findings affect consideration by the Office of the Attorney General

4 Including "hospital contracting network," "provider network," "ACO," "contracting Network," and "integrated provider organization that operates clinical integration programs and contracts."

5 With the exception of Partners, for which shares of [unnamed] hospitals that "contract through its network" are included.

("OAG"). These findings inform any need to apply additional and more technical legal antitrust scrutiny. As such, and related to above-noted issues on the clarity of BIDCO's role, the Parties have two concerns regarding application of antitrust guidelines in the Report.

The first concern relates to application of FTC/DOJ Horizontal Merger Guidelines (and associated analyses) to transactions that do not quite fit into the traditional merger or acquisition "box." While the Parties understand that rationale is provided as to why this approach was taken, there is value in recognizing that this approach is one of several available, particularly in light of the concerning characterization of BIDCO and the specifics of these transactions. Thus, findings based exclusively on use of Horizontal Merger Guidelines may be best viewed as one potential set of interpretations among other possible sets.

The second concern relates to the Report's reliance on the HPC's primary service area ("PSA") definition rather than a "relevant geographic market."

Although the Parties understand the need to move quickly and be efficient, and that the HPC's PSA definition incorporates elements of the broader "relevant geographic market," the Parties are also keenly aware that the decision as to whether or not to refer these transactions to the OAG depends on the existence of a prima facie case for antitrust concerns. If the Report relies only partially on standard antitrust measures, then a conclusion to refer to the OAG may be incomplete or potentially even flawed. Moreover, because the Report uses PSA as the basis to assess market concentration using the FTC/DOJ HHI tool, it is unclear if the same HHI results would be reached when using the "relevant geographic market" basis. Accordingly, the Report's conclusions on market concentration that use a PSA definition to conduct HHI analyses are potentially problematic. As an example, using "relevant geographic market" rather than PSA for BIDH-Needham and MetroWest indicates little overlap, and thus the associated HHI analysis would not yield meaningful market concentration concerns.

Further, the United States District Court for the Middle District of Pennsylvania recently ruled that even the FTC/DOJ "relevant geographic market" is "unrealistically narrow and [does] not assume the commercial realities faced by consumers in the region."⁶ Though unclear how this ruling could impact future antitrust regulation, if a federal court has classified the "relevant geographic market" definition as too narrow, then the PSA definition, as an already narrowed subset of the FTC/DOJ definition, would almost certainly be deemed too narrow. As such, the Parties propose that the HPC reference PSA as "an available measure" of geographic market definition rather than "one of the best available measures," and clarify that an analysis of market concentration using the current or potentially expanded future FTC/DOJ "relevant geographic market" definition could yield different results.

REVIEW OF SELECT FINDINGS AND THEMES

REGARDING PROPOSED MARKET PROMINENCE

In light of the issues noted above, the Parties are concerned that one of the Report's key findings is that the transactions "...would solidify BIDCO's position as the #2 hospital network in the state," though they appreciate and acknowledge the inference that a strong #2 (and #3, #4) would likely improve market functioning and efficiency. However, the Report demonstrates the disparity between the positions of

⁶ Federal Trade Commission v. Penn State Hershey Med. Ctr., No. 1:15-CV-2362, 2016 WL 2622372, at *4 (M.D. Pa. May 9, 2016).

Notes: FTC = Federal Trade Commission; DOJ = Department of Justice; HHI = Herfindahl-Hirschman Index.

Partners and “the rest” of the providers in the market more than any potential “solidification” of the Parties’ position.

Based on Report findings, a more precise conclusion might be that BIDCO⁷ is likely to remain a tenuous “#2 hospital network,” not within competitive reach of the current market leader in terms of hospital commercial market share or number of beds.⁸ Though a bit of an oversimplified example, but hopefully an accessible analogy for illustrative purposes: Bing is the second most popular internet search engine, but it is not really seen as or considered “#2” because of Google’s clear market leadership; it is one quarter the size of Google, and is roughly the same size as Yahoo and Ask,⁹ but these #2, #3, and #4 companies are, from a market position and power perspective, largely irrelevant given the gap between each of them and Google.

The Report also describes BIDCO as “... among the largest physician networks and one of Massachusetts’ largest ACOs” (p. 1), though this description may not be adequately substantiated. Based on 2014 commercial member months¹⁰ (see **Figure 1**, below), BIDCO ranks fifth after Partners, Atrius, Steward, and NEQCA. The Report actually supports a less-prominent BIDCO market position by indicating that BIDCO physician members combined have the fourth-largest share of adult primary care provider (“PCP”) visits, and tie with Steward for the third-largest share of PCP revenue. These findings indicate that a more central Report conclusion [regarding current and potential future market position] is that Partners is far larger and more prominent than any other hospital, physician, or contracting network in the Commonwealth.

Figure 1: 2014 Commercial Member Months by “MPG” for Top Three Payers

"Managing Physician Group"	2014 Commercial Member Months (TOP 3 PAYERS)	% 2014 Member Months	
		Listed "MPGs" only	All "MPGs"
Partners	3,120,900	26.9%	17.0%
Atrius	2,665,750	22.9%	14.5%
Steward	2,007,180	17.3%	10.9%
NEQCA	1,518,990	13.1%	8.3%
BIDCO	1,153,170	9.9%	6.3%
UMass	1,153,170	9.9%	6.3%
Total	11,619,160	100%	63.3%

Source: Parties’ analysis of CHIA Annual Report on the Performance of the Massachusetts Health Care System Data Appendix, 2012-2014, released September 2015. Figure uses naming conventions established in the Report. Member months have been rounded.

REGARDING POTENTIAL TO LEVERAGE HIGHER PRICES

The Report also raises the concern that “transactions could strengthen BIDCO’s ability to leverage higher prices and other favorable contract terms.” If the question is focused only on any change in the ability to negotiate, it likely overlooks whether there is a level playing field at the outset of negotiation. The Report clearly shows (p. 33) that “BIDCO hospital” prices are meaningfully lower than those of Partners and other competing networks (overall and by category of provider), and states that “BIDCO members are low-to-mid-

⁷ Assumes that the Parties do not take issue with the characterization of BIDCO as a “hospital network” or the comparison of BIDCO to corporately integrated hospital systems.

⁸ Using the Report’s methodology to combine and attribute staffed beds and commercial inpatient market share to what are defined as “hospital systems”: Partners= 3,713 beds and 28.6% share; BIDCO = 1,564 beds and 10.5% share.

⁹ Based on unique monthly visitors.

¹⁰ By “managing physician group” for the top three commercial payers through end of calendar year 2014.

Note: NEQCA = New England Quality Care Alliance.

priced providers and hospitals...with comparable or better TME.” Some BIDCO prices, like the prices of other non-market leading provider networks, can be expected to increase over time, which may help to reduce existing market disparities, regardless of these transactions. However, given the current state, and even assuming appropriate and necessary price adjustments, price disparity will continue to exist on a relative basis given the starting point for most networks relative to Partners. To that end, BIDCO looks forward to working with policymakers to address price variation and afford market participants the opportunity to invest in and successfully implement infrastructure for population health management, better coordination of care, and care delivery that reduces attraction to more expensive providers.

Further, even if the proposed transactions could “...strengthen BIDCO’s ability to leverage higher prices and other favorable contract terms,” any such increases are unlikely to have a meaningful effect on statewide prices or spending based on the current positions of BIDCO and BIDMC relative to others:¹¹

- When categorized as a “Managing Physician Group,” BIDCO members accounted for 6% of total commercial payments in 2013, compared to Partners at 28%, Atrius at 12%, Steward at 11%, and NEQCA at 7%. Though these figures are from 2013, and therefore do not account for 2014 transactions, BIDCO is still a fraction of the size of Partners, and is most comparable to NEQCA.
- Similar results follow when examining BIDMC compared to relevant general acute care hospitals: in 2014, BIDMC accounted for 6% of commercial payments, compared to the two Partners academic medical centers (“AMCs”) combined comprising 25%, UMass Memorial with 5%, Lahey Hospital and Medical Center with 4%, and Tufts Medical Center with 3%.

REGARDING COMMITMENTS TO MITIGATE CONCERNS

The Parties have demonstrated and will continue to demonstrate a commitment to supporting the HPC’s role and fulfillment of Chapter 224 objectives. The Parties evidence commitment to these aims via:

- Active participation in annual cost trends dialogue and hearings
- Responsiveness to all ongoing HPC reporting requirements
- Extensive engagement and cooperation throughout these CMIR processes

However, the Parties could not reasonably be expected to define and adhere to unique reporting and monitoring requirements inconsistent with those of others in the market, nor specify a period of time by which certain results could be demonstrated. Such commitments would constitute an undue reporting burden and heightened scrutiny that appear unwarranted in light of Report findings.

The comprehensive data and extensive written submissions provided by the Parties throughout the first six months of 2016 describe how quality improvement is approached in affiliations with BIDCO and BIDMC/HMFP, as well as the care delivery and quality objectives of affiliations. The submissions also offer examples of how the Parties have interacted with other affiliates as proposed starting points. The primary reasons that the Parties have not yet expended the time and resources to generate more detailed plans with timelines and targets for these transactions include: uncertainty as to whether the transactions would move forward and diversion of resources necessary to do so to ensure cooperation and compliance with CMIR requests.

¹¹ Per The Annual Report Series on Relative Price: Health Care Provider Price Variation in the Massachusetts Commercial Market, The Center for Health Information and Analysis, February 2016.

As part of this CMIR process, the Parties provided all available requested data and crafted substantive narrative responses in order to address the HPC's concerns such as "...potential for additional patients seeking care at BIDMC rather than at community providers," provided reasons for "limited BIDCO results to date," and cited examples of "...decreased spending and/or improved quality for BIDCO affiliates to-date." Fundamental shifts in each of these "impact domains" - referrals, price, TME, quality performance - take significant time and effort to achieve, and are the result of years of building and investment. BIDCO is a young organization and many of BIDMC's clinical affiliations are also recent. It is certainly reasonable to expect that Parties will, in time, have more data to support their positions. As such, the absence of supporting data at this moment in time should not be considered a shortcoming nor a reason to conclude that positive results in each "impact domain" are unlikely.

Finally, the Parties encourage and pledge their support to all policymakers' efforts to link commercial health care pricing to value, and to spur more effective competition. Report findings are important evidence of the continued and meaningful price disparity among hospital, physician, and contracting organizations in the current marketplace, and will help to advance the above-referenced policy efforts.

SECTION II: FINDINGS SPECIFIC TO SELECT PARTIES OR TRANSACTIONS

BIDMC

BASELINE PAYER MIX

BIDMC sees fit to provide context for the "Inpatient Payer Mix at AMCs Statewide" chart and related findings (p. 55), and suggests adding commentary to clarify the finding that BIDMC serves "relatively low proportions of government payer patients".

First, the chart shows that BIDMC's percentage of government payers is virtually identical to that of the MGH and larger than that of BWH. Additionally, the chart shows that government payer inpatients at BIDMC represent the majority of BIDMC inpatient discharges (~60%). Of that nearly 60%, ~17% is accounted for by Medicaid discharges. Medicaid is, in fact, BIDMC's third largest payer, and Medicaid discharges are significantly higher than discharges for two of the three largest commercial payers. Additionally, BIDMC's share of government payer inpatients for psychiatric and NICU discharges is significantly higher than its overall share of government payer inpatients, which is not depicted in the chart.

Finally, the organization of the chart and comparators used may be misleading. Six AMCs are shown (left to right) in ascending order of commercial payer discharge share, *not* ascending order of government payer discharge share. If this were true, BIDMC would appear fourth, not fifth, from the left, before both Partners' AMCs, as BIDMC has greater combined government payer discharge share than either MGH or BWH. Moreover, if the comparison were limited to Eastern Massachusetts AMCs, BIDMC's relative position would be at the median.

METROWEST

BEHAVIORAL HEALTH AND PRIMARY CARE

MetroWest will maintain strong behavioral health programs to meet the needs of its communities. As evidence of MetroWest's commitment to these critical services, 28 adult and 8 geriatric beds have been

added in the past 24 months, in addition to renovating space for geriatric psychiatry, adult psychiatry, and partial hospital programs. The MetroWest behavioral health department now has 86 inpatient beds for child/adolescent, adult, and geriatric psychiatry, and a robust partial hospital program for adult and dual-diagnosis clients. In addition, MetroWest and BIDMC will evaluate opportunities for collaboration on behavioral health programs and will facilitate access to psychiatric services for patients in new primary care practices developed through the affiliation.

As all BIDMC affiliated physicians currently do, proposed new MetroWest primary care practices developed with BIDMC and HMFP will accept all payers. Further, MetroWest, BIDMC, and HMFP refer to their initial data and narrative CMIR submissions for descriptions on how joint recruitment of PCPs, and recruitment of physician leaders, will be carried out, as well as how MetroWest intends to participate in and benefit from affiliation with BIDMC with regard to quality improvement.

NEBH/NEBCIO

NEBH supports the Report's conclusion that the proposed relationship between NEBH/NEBCIO and BIDCO would have limited impact on the market and offers the potential to improve quality and access, and to reduce spending, for orthopedic and musculoskeletal ("MSK") care in the Commonwealth.

NEBH appreciates this opportunity to re-establish appropriate context for Report findings, and to reiterate NEBH's position on themes raised in the Report and highlighted by the Commissioners at the July meeting.

MARKET CONTEXT

The proposed relationship between NEBH/NEBCIO and BIDCO must be viewed within the context of the broader healthcare environment in Massachusetts, which has become increasingly more organized around ACO networks. Consistent with the goals of Chapter 224, these networks are taking greater responsibility and risk for managing population health and engaging with payers to design alternative payment models that foster innovative and cost-effective care delivery, as well as enhance quality and access.

As ACOs have evolved, it has become increasingly important to retain specialty care within the network in order to provide more effective care coordination. Each ACO network is seeking to reduce its TME by shifting appropriate secondary care from high-cost AMCs to local in-network community hospitals. NEBH is the only specialty hospital in the Commonwealth that is not aligned with a major ACO network and as such, is considered an "out-of-network" provider by most ACO networks despite its position as a Tier One provider (highest quality, lowest cost) for every major commercial health insurance plan.

In the face of these market dynamics, NEBH recognized the need to reposition itself through closer alignment and integration with a high value ACO network while continuing to pursue important relationships with other high-value providers.

POTENTIAL IMPACTS

The Report cites two potential market impacts of the transaction of concern to the HPC and Commissioners: first, greater market share concentration in orthopedics that has the potential to increase market leverage, and second, projected increases in physician prices. NEBH would like to address each of these concerns in turn.

Market Concentration

The Parties respectfully disagree with the conclusion that the NEBH/NEBCIO/BIDCO transaction will increase BIDCO's market leverage for three reasons.

First, it will **not materially change the market concentration** for inpatient general acute care services – and as the HPC rightly notes, “BIDCO would still face substantial competition from Partners, which would remain the dominant provider in most service areas and service lines.” Orthopedic and MSK care represents less than 12 percent of total inpatient admissions in Massachusetts, and as such, these services have a minimal impact on BIDCO's overall ability to negotiate commercial payment rates for its hospitals and physicians.

Second, per initial NEBH/NEBCIO CMIR submissions¹², the market for inpatient orthopedic and MSK care will continue to be competitive and offer patients a broad range of choices, with the majority of community hospitals offering these services, and with no provider garnering more than ~30-35% market share. While the Parties could highlight a range of differences between their analytic approach and that of the HPC in this area, it is worth noting that the HPC clearly indicates that both the pre-affiliation and post-affiliation inpatient market share would remain moderately concentrated (HHI values of 1,948 and 2,357, respectively) for the relevant product market in NEBH's primary service area.

Third, a full assessment of market concentration requires evaluating services across the care continuum, including on an outpatient-basis, which is how and where the vast majority of orthopedic and MSK services are delivered. The Report does not dispute that the Parties represent only 14-22% of practicing orthopedic surgeons combined within each of the relevant service areas. In addition, according to the HPC's analysis, the outpatient orthopedic and MSK surgery market share would also remain only moderately concentrated, with BIDCO and NEBH having the second greatest share and Partners maintaining about 47% greater market share than the Parties combined. For these reasons, the Parties submit that the transaction would maintain the breadth of patient choices and a high degree of competition for orthopedic and MSK services throughout all relevant service areas.

Physician Price Increases

The Report uses a relative price index methodology to compare the anticipated pricing differences among NEBH physicians and BIDCO physicians for the three largest commercial payers. Using this methodology, the Report finds that the transaction would result in a small to moderate increase in healthcare spending in the NEBH service area of up to \$4.5 million, representing a .04% potential increase. However, a more precise black-box analysis comparing contractual reimbursement rates [previously submitted by the Parties] found a **maximum increase of only \$1.3 million, or a .01% potential increase**, in healthcare spending for the same geography.

The black-box analysis is likely more accurate for two reasons. First, it uses a direct CPT®-to-CPT® comparison of fee schedules under existing contracts with the three largest commercial payers, including projected payment rate updates. Second, the 2013 relative price index methodology used by the HPC does not account for changes in contractual rates from 2013-2015 (as depicted in the NEBH/NEBCIO initial CMIR submissions) that reduce the estimated index differential between NEBH/NEBCIO and BIDCO physicians.

¹² Dated March 9, 2016.

*OTHER**Access*

NEBH has a long standing commitment to providing access to Medicaid patients. Its historically small percentage of Medicaid patients served is driven by the organization's structure and limited scope of services as an elective orthopedic surgical referral hospital. NEBH draws patients from a very broad geographic region, does not have an emergency department, does not serve pediatric patients, and has a very small primary care base of only 13 physicians, most of whom are in private practice. The majority of NEBH's surgical staff are private practice orthopedic surgeons with varying rates of individual participation in Medicaid.¹³

One of NEBH's central commitments as part of its partnership with BIDMC is for NEBH to care for patients in the Medicaid program in a share proportionate to that of BIDMC over time. NEBH has taken concrete steps to fulfill this pledge.¹⁴

1. NEBH expanded participation in Medicaid program by establishing new contracts in 2015 with Tufts Health Public Plan – which represents the largest concentration of Medicaid Managed Care patients served by the BIDCO network – as well as several dual-eligible programs (e.g., Commonwealth Care Alliance - Senior Care Options and Senior Whole Health). NEBH will continue to negotiate with any payers that currently (or may in the future) offer public plans. For those Medicaid Managed Care Organizations with whom NEBH does not have a contract, several have stated that they are either not interested in a contract with NEBH or have exclusive relationships with other providers in the market.
2. NEBH invested in the development of an Orthopedic Specialty Practice (OSP) for the purpose of expanding access for Medicaid patients in 2014. Patients are seen in the orthopedic specialty practice by NEBH trained orthopedic fellows and attending physicians (both private practice and employed) for the evaluation, diagnosis and treatment of surgical and non-surgical MSK injuries, disorders, or complaints. Details regarding the OSP were provided in the NEBH/NEBCIO initial CMIR response.
3. As part of ongoing clinical integration efforts between the Parties, several of HMFP's orthopedic physicians began taking care of a portion of their patients at NEBH outpatient sites in Dedham and Brookline in October 2014. The patient mix includes a variety of payers, including Medicaid. Atrius physicians who practice at NEBH bring/refer Medicaid patients to the hospital. As documented in our initial CMIR response, NEBH has experienced a material increase in Medicaid as a proportion of total revenue over the past several years, and its payer mix today closely approximates that of other Boston-area specialty hospitals.
4. As part of the financial arrangement between BIDMC and NEBH, payer mix at both institutions is monitored regularly to ensure achievement of progress toward our combined goal.
5. As a member of the BIDCO network with a larger group of PCPs able to refer to NEBH and its specialists "in-network", we expect to serve an increasing number of Medicaid patients over time.

¹³ NEBH provided the HPC a roster of its physicians, specialties, and office locations in its initial CMIR data submission.

¹⁴ This pledge has significant negative financial implications for NEBH, as the Medicaid payment system disproportionately disadvantages NEBH as a specialty surgical institution, with payment that covers approximately only 25% of the costs of surgical care. Never the less, NEBH has made a commitment to expanding Medicaid access.

Quality Improvement

Development of detailed plans for extending the NEBH model of care to enhance the quality and patient experience in orthopedics at BIDMC, its affiliates, and other BIDCO members is pending NEBH's entry into BIDCO. However, this has always been a stated goal of the Parties.

In 2014, BIDMC and NEBH agreed to adopt a more closely aligned clinical model (clinical affiliation between NEBH and BIDMC) to enhance quality, efficiency, and the patient experience for orthopedic and MSK services at the BIDMC campus as a first step in the journey toward broader clinical integration.

Key elements include:

- An operational redesign plan for orthopedic and MSK services at BIDMC focused on improving performance on process and outcomes of care through the implementation of key elements of the NEBH model of care
- Adoption of a common model of care - including standardized care pathways and operational processes - across pre-operative evaluation, perioperative care, inpatient, and post-operative areas
- Competency-based training and orientation of clinical and administrative staff
- Shared performance dashboard for quality and outcomes measurement
- Joint oversight and governance of clinical protocol and guideline development
- Physician alignment through NEBCIO

In compliance with the data request from the HPC related to this transaction, NEBH/NEBCIO submitted materials that exhibit the progress made toward this goal including:

- BIDMC clinical leadership and staff have participated in a comprehensive orientation program at NEBH. Initial areas of focus included: Pre-Admission Testing/High Risk Screening, Case Management, Rehabilitation. In addition, roles of nurses, technologists and other personnel were reviewed in detail to improve staffing and operational efficiencies. As a result, BIDMC:
 - Has hired the appropriate staff in an effort to mirror NEBH's model of care
 - Is currently working on improving its high risk preoperative screening process
 - Provides inpatient physical therapy using NEBH's protocols to allow patients to return to function sooner
 - Continues to make improvements in its case management efforts for orthopedic patients and enabling them to be discharged home, instead of a post-acute facility
 - Has improved its turnaround time in its operating rooms for joint replacement patients
 - An initial quality and performance dashboard has been developed. NEBH and BIDMC will continue monitoring a range of metrics to track the success of the joint venture.

The goal of the NEBH clinical affiliation model at BIDMC is to create a template for the extension of the NEBH model of care to BIDH-Needham, BIDH-Plymouth, and other select BIDCO community providers over time. Orthopedic and MSK care will continue to be provided on a highly distributed basis throughout the BIDCO network, with numerous patient access points across participating facilities.

SECTION III: TECHNICAL CLARIFICATIONS

DESCRIPTION	PAGE NO.
Describes MetroWest entering into a clinical affiliation with BIDMC and HMFP, which co-chair BIDCO's board of directors. Technically, it is not the organizations that co-chair, rather, the presidents of each organization are named as co-chairs of BIDCO.	1
BIDCO did not contract for all owned hospitals in 2013; in 2013, BIDCO's only member hospital was BIDMC. Other hospitals joined BIDCO in 2014.	12
For the three largest commercial payers in the state, until such time as the BIDCO contract comes up for renewal, BIDCO employs a "messenger model" of negotiation on behalf of its hospital Members who are not yet part of the contract. Contract terms are negotiated by BIDCO and signed by that individual hospital and the payer, with a renewal term that coincides with the BIDCO contract renewal date. When hospitals are incorporated into the BIDCO contract, BIDCO negotiates and is signatory to the contract with the payer. BIDCO currently does not negotiate commercial payer contracts for its hospitals, outside of the 3 largest commercial payers.	15
NEBH is licensed for 118 beds, not 95.	19
Description of MetroWest affiliations with BIDMC and HMFP may be misleading with regard to sequencing. The BIDMC/HMFP clinical affiliation ensures MetroWest and employed physicians will join BIDCO within 2 years.	23
Per footnotes, CHA hospitals are not included in the BIDCO "hospital network."	27
An 8% or \$25.30 increase in per member per month in health status-adjusted TME of BCBS patients in NEQCA was described as "comparable to BIDCO." The Parties question the range or dollar determination of "comparable" as used in the Report.	38
HSA TME for HPHC only is shown; chart features BIDCO as second highest after Partners. BIDCO's adjusted and normalized weighted average TME across commercial payers is 12.1% lower than that of Partners' providers and 4.4% lower than NEQCA's. BIDCO is most similar to Atrius and Steward from an all-commercial-payer HSA TME perspective.	39
Report comments on "strong role granted to BIDMC and HMFP." While the presidents of BIDMC and HMFP serve as co-chairs of BIDCO, this structure does not grant either organization disproportionate voting rights.	42
BIDCO hosts one EHR platform, not two. BIDCO policy states that no change in platform is required if a member enters with one of six approved platforms. If not, a change is required to the BIDCO hosted platform or Athena, which is not technically hosted by BIDCO.	42

Exhibit B:
**HPC Analysis of Parties' Response
to Preliminary Report**

Exhibit B
HPC Analysis of the Parties' Written Response to the HPC's Preliminary Report

This document analyzes and addresses the principal topics raised in the August 19, 2016 Response on Behalf of Beth Israel Deaconess Care Organization, Beth Israel Deaconess Medical Center, Harvard Medical Faculty Physicians at Beth Israel Deaconess Medical Center, MetroWest Medical Center, and New England Baptist Hospital and New England Baptist Clinical Integration Organization to the Cost and Market Impact Review Preliminary Report Issued by the Health Policy Commission Regarding HPC-CMIR-2015-1, HPC-CMIR-2015-2, and HPC-CMIR-2016-1 (Parties' Response). These include:

1. The HPC's methodologies and findings regarding potential cost and market impacts of the transactions;
2. The consolidation of the HPC's reviews into a single report and characterizations of the various roles of BIDCO; and
3. The parties' commitments and future interactions with the HPC.

In addition to these three topics, this document also addresses minor technical clarifications raised by the parties. We note, as applicable, where these points are addressed in the HPC's Final Report.¹

I. The HPC's methodologies and findings regarding potential cost and market impacts of the transactions

As detailed in the Final Report, the HPC finds that the proposed transactions could strengthen BIDCO's ability to leverage higher prices and other favorable contract terms as a result of increases in market concentration and BIDCO's market share.² The NEBH transaction would make BIDCO the largest commercial provider network for certain inpatient orthopedic and musculoskeletal services statewide and in most BIDCO member hospitals' service areas, and the MetroWest transactions would expand the BIDCO network westward. In addition, as NEBCIO physicians join BIDCO contracts, we anticipate small to moderate increases to health care spending of up to \$4.5 million annually for the three largest commercial payers combined. The Parties' Response makes certain misstatements about these findings, raises questions about the HPC's market impact methodologies, and suggests that our findings are mitigated by the existing disparity in provider prices in the Commonwealth and by BIDCO's small share of the statewide commercial market. The parties also offer an alternative figure of \$1.3 million as the

¹ MASS. HEALTH POLICY COMM'N, REVIEW OF BETH ISRAEL DEACONESS CARE ORGANIZATION'S PROPOSED CONTRACTING AFFILIATION WITH NEW ENGLAND BAPTIST HOSPITAL AND NEW ENGLAND BAPTIST CLINICAL INTEGRATION ORGANIZATION (HPC-CMIR-2015-1) AND BETH ISRAEL DEACONESS CARE ORGANIZATION'S PROPOSED CONTRACTING AFFILIATION AND BETH ISRAEL DEACONESS MEDICAL CENTER'S AND HARVARD MEDICAL FACULTY PHYSICIANS' PROPOSED CLINICAL AFFILIATION WITH METROWEST MEDICAL CENTER (HPC-CMIR-2015-2 AND HPC-CMIR-2016-1), PURSUANT TO M.G.L. C. 6D, § 13 FINAL REPORT (Sept. 7, 2016) [hereinafter Final Report].

² See Final Report, *supra* note 1, at Section IV.A.1.

projected annual increase in spending due to changes in NEBCIO prices. We address each of these assertions in turn.

The HPC respectfully disagrees with the parties' characterization that the Preliminary Report concluded that the proposed transaction between NEBH/NEBCIO and BIDCO would have "limited impact on the market[.]"³ Indeed, we found that the proposed transaction would give BIDCO the largest commercial market share for core inpatient orthopedic and musculoskeletal services in nearly every party hospital primary service area (PSA).⁴ For outpatient orthopedic surgery, we found that BIDCO's post-transaction share of these services in NEBH's outpatient PSA (23.6%) would be smaller than that of Partners (34.7%), but more than triple the share of the next largest system, Lahey (8.1%).⁵ The HPC also found significant increases in market concentration and, as a result of all of these findings, the HPC concluded that the transaction could strengthen BIDCO's ability to leverage higher prices and other favorable contract terms in negotiations with commercial payers.⁶

The Parties' Response also questions whether the HPC's use of PSAs in its market analyses would yield the same results as an analysis using a "relevant geographic market" as would be defined in antitrust litigation.⁷ We acknowledge that a PSA may not be equivalent to a "relevant geographic market" for antitrust purposes, and that the results of a competitive analysis using such a geographic market could differ from our own.⁸ However, as discussed in our reports,⁹ CMIRs function in part as a screening tool to determine whether transactions warrant

³ Parties' Response, Exh. A, at 7.

⁴ BIDCO would have the highest post-transaction share of these services in every party hospital PSA except for that of Cambridge Health Alliance, including the PSA of NEBH, which includes most of Eastern Massachusetts. Final Report, *supra* note 1, at page 22.

⁵ Final Report, *supra* note 1, at pages 65-66. We agree with the parties that a full assessment of orthopedic and musculoskeletal services requires assessing market shares and concentration for both inpatient and outpatient care, Parties' Response, Exh. A, at 8, and for that reason we examined the markets for both NEBH's primary inpatient and outpatient services. We found significant impacts for both inpatient orthopedic and musculoskeletal services as well as outpatient orthopedic surgical services, with inpatient services becoming particularly highly concentrated. The concentration of inpatient services is important to note as NEBH still receives the majority of its revenue from inpatient care, despite a general shift of care toward the outpatient setting. See CTR. FOR HEALTH INFO. & ANALYSIS, HOSPITAL PROFILE: NEW ENGLAND BAPTIST HOSPITAL (Nov. 2015), available at <http://www.chiamass.gov/assets/docs/r/hospital-profiles/2014/ne-bapti.pdf> (indicating that NEBH received 60% of revenue from inpatient care in 2014).

⁶ The parties also characterize our report as supporting an inference that "a strong #2" hospital network "would likely improve market functioning and efficiency." Parties' Response, Exh. A, at 3. While we acknowledge the potential for some beneficial impacts as a result of the proposed transactions, it is unclear, based on the data currently available, whether "a strong #2" hospital system would improve market functioning.

⁷ Parties' Response, Exh. A, at 2-3.

⁸ Although the parties imply on page 3 of their response that they analyzed market impacts based on relevant geographic markets for MetroWest and BID-Needham, they have confirmed that they have not defined a relevant geographic market for either hospital. All geographic market definitions and analysis provided by the parties for the MetroWest transactions were based on PSAs.

⁹ See MASS. HEALTH POLICY COMM'N, REVIEW OF PARTNERS HEALTHCARE SYSTEM'S PROPOSED ACQUISITIONS OF SOUTH SHORE HOSPITAL (HPC-CMIR-2013-1) AND HARBOR MEDICAL ASSOCIATES (HPC-CMIR-2013-2), PURSUANT TO M.G.L. C. 6D, § 13, FINAL REPORT at Exh. B, Section II.A (Feb. 19, 2014), available at <http://www.mass.gov/anf/docs/hpc/20140219-final-cmir-report-phs-ssh-hmc.pdf>; MASS. HEALTH POLICY COMM'N, REVIEW OF PARTNERS HEALTHCARE SYSTEM'S PROPOSED ACQUISITION OF HALLMARK HEALTH CORPORATION

further review – whether for antitrust or other concerns – “to protect consumers in the health care market.”¹⁰ As such, the HPC’s market analyses are intended to complement, not replicate, the work of antitrust authorities. The HPC’s use of PSAs for its market analyses appropriately fills this screening function and is consistent with relevant antitrust precedent and guidelines,¹¹ and the HPC’s statutory mandate.¹²

The Parties’ Response also suggests that any increases in BIDCO’s bargaining leverage as a result of the transactions should not be concerning because of existing disparities in providers’ commercial prices.¹³ However, the fact that BIDCO member hospitals have historically received lower prices than some other market participants¹⁴ does not imply that increases in BIDCO prices as a result of the proposed transactions would be appropriate. As the parties acknowledge in their response, increasing prices for members of BIDCO and other non-market leading provider networks will not eliminate provider price variation,¹⁵ and the goal of efforts to address price variation should be to align price differences with value to patients.¹⁶ We welcome the parties’ statement that they look forward to working with the Commonwealth to address price variation;¹⁷ yet, price increases based solely on increased bargaining leverage from higher market concentration and market shares would not be aligned with this goal.

The fact that BIDCO member providers have historically had low to mid-range prices relative to competitors also does not address the question of how BIDCO has used its growing market share in negotiations with payers over the last two years or how it expects the proposed transactions to impact its bargaining leverage. As noted in the Final Report, several payers have

(HPC-CMIR-2013-4), PURSUANT TO M.G.L. c. 6D § 13, FINAL REPORT at Exh. B, Section I.B (Sept. 3, 2014), available at <http://www.mass.gov/anf/docs/hpc/material-change-notice/phs-hallmark-final-report-final.pdf>.

¹⁰ MASS. GEN. LAWS ch. 6D, § 13(h). The parties incorrectly state that “the decision as to whether or not to refer to the [AGO] depends on the existence of a prima facie case for antitrust concerns.” Parties’ Response at 3. The HPC has the discretion to refer its reports to the AGO and is required to do so where a provider organization has dominant market share, materially higher price, and materially higher health status adjusted total medical expenses. 958 CODE MASS. REGS. 7.14.

¹¹ Although a PSA may not be equivalent to a “relevant geographic market” defined in antitrust litigation, the Department of Justice (DOJ) and Federal Trade Commission (FTC) have described market shares within PSAs as “a useful screen for evaluating potential competitive effects.” See U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, STATEMENT OF ANTITRUST ENFORCEMENT POLICY REGARDING ACCOUNTABLE CARE ORGANIZATIONS PARTICIPATING IN THE MEDICARE SHARED SAVINGS PROGRAM 7 (2011), available at <https://www.justice.gov/sites/default/files/atr/legacy/2011/10/20/276458.pdf>. The Herfindahl-Hirschmann Index (HHI) is simply a sum of the squares of those market shares. The calculation of HHIs is standard practice to evaluate competitive effects of mergers. See U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 5.3 (2010), available at <http://www.justice.gov/atr/public/guidelines/hmg-2010.pdf>.

¹² MASS. GEN. LAWS c. 6D § 13(d)(i).

¹³ Parties’ Response, Exh. A, at 4-5.

¹⁴ See Final Report, *supra* note 1, Section III.A.4.

¹⁵ Parties’ Response, Exh. A, at 5. (“even assuming appropriate and necessary price adjustments, price disparity will continue to exist on a relative basis...”).

¹⁶ As documented in reports by the HPC, CHIA, and the AGO, there is significant variation in provider prices that is not tied to measurable differences in quality, complexity, or other common measures of value. See MASS. HEALTH POLICY COMM’N, 2015 COST TRENDS REPORT: PROVIDER PRICE VARIATION (Jan. 20, 2016), available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/publications/2015-ctr-ppv.pdf>.

¹⁷ Parties’ Response, Exh. A, at 5.

reported to the HPC that BIDCO has sought more aggressive price increases as it has gained members and have expressed concerns about the potential for the transactions to further increase BIDCO's bargaining leverage.¹⁸ For this reason, it will be critical to continue to monitor the parties' price and spending trends as BIDCO grows as described below in Exhibit B, Section III.

The parties also assert that any increases in BIDCO prices as a result of increased bargaining leverage would not have a meaningful effect on statewide spending due to BIDCO's size and position relative to the market leader.¹⁹ To support their claim, the parties cite managing physician group data from 2013 and 2014 as well as the share of 2014 commercial hospital payments accounted for by BIDMC. However, the figures cited by the parties both understate the size of BIDCO and the scope of patients who would be impacted by increases in the prices of BIDCO hospitals and physicians. As discussed in the Final Report,²⁰ the BIDCO network has grown substantially in recent years; 2013 and 2014 data reflect only a part of current BIDCO membership. Similarly, the parties note only BIDMC's share of commercial hospital payments, despite the fact that BIDCO negotiates on behalf of all seven of the hospitals that are part of its network. BIDCO member hospitals accounted for 10.5% of commercial discharges in 2015; the parties' share of commercial discharges would further increase to 13.4% if MetroWest and NEBH were to join BIDCO.²¹ While this share remains substantially less than Partners' 28.6% share, it is also substantially greater than that of other hospital networks in the state. For example, BIDCO would have over 75% more discharges in its network after the proposed transactions than Lahey, the third largest hospital network, at 7.6%. Finally, increases in BIDCO physician prices would impact all patients served by BIDCO physicians, not only those HMO/POS patients attributed to BIDCO as a "managing physician group" as suggested by the parties.²² The HPC calculates that BIDCO physicians currently receive approximately 11.1% of statewide adult primary care revenue, the third highest share in the state.²³

Finally, the parties agree with the HPC finding that NEBCIO physicians moving to BIDCO physician rates would result in a small to moderate increase in total spending, but the parties provide an alternative estimate of the spending impact of \$1.3 million per year for the three largest payers, based on a "black-box" analysis of payer contracts.²⁴ The HPC appreciates that the parties provided the summary results of this analysis for our review; however, the HPC

¹⁸ See Final Report, *supra* note 1, at page 71, note 220.

¹⁹ See Parties' Response, Exh. A, at 5.

²⁰ See Final Report, *supra* note 1, at Section III.A.1.

²¹ See Final Report, *supra* note 1, at Section IV.A.1.a.

²² Parties' Response, Exh. A, at 4.

²³ See Final Report, *supra* note 1, at Section III.A.1. The parties also dispute the description of BIDCO as "among the largest physician networks and one of Massachusetts' largest ACOs." Parties' Response, Exh. A, at 4. The Final Report maintains this description based on our primary care services market share findings, CHIA data cited in the Parties' Response indicating that BIDCO had the 5th largest number of commercial member months out of almost 20 managing physician groups in 2014, and the fact that BIDCO had the second largest number of aligned beneficiaries in its Pioneer ACO in Massachusetts in 2015. See CTR. FOR HEALTH INFO. & ANALYSIS, ANNUAL REPORT ON THE PERFORMANCE OF THE MASSACHUSETTS HEALTH CARE SYSTEM: DATA BOOK (Sept. 2015), available at <http://www.chiamass.gov/assets/2015-annual-report/2015-Annual-Report-Data-Books.zip> ("2015 Annual Report APM Databook" file); Pioneer ACO Model, CTRS. FOR MEDICARE & MEDICAID SERVS., <https://innovation.cms.gov/initiatives/Pioneer-ACO-Model/> (last visited Aug. 31, 2016).

²⁴ Parties' Response, Exh. A, at 8.

was not able to substantiate this figure based on party production and other available data sources. As a result, Section IV.A of the Final Report states that, based on independently verifiable data, we anticipate a small to moderate cost impact of *up to* \$4.5 million for the three largest commercial payers. We acknowledge that the parties' analysis indicates a smaller price impact of \$1.3 million in footnote 224.²⁵

II. The rationale for the consolidation of the HPC's reviews into a single report and characterizations of the various roles of BIDCO

In their Response, the parties note that the combination of three affiliations, and of clinical and contracting affiliations, into a single review "may make it more difficult to distinguish between and/or precisely portray the respective roles of each party."²⁶ The HPC appreciates the complexity of the proposed transactions and the parties' current and proposed relationships. In presenting these reviews in a single report, the HPC sought to balance both clarity around the individual parties and transactions and the acknowledgement that the proposed transactions are interrelated and raise common questions such as how the growth of BIDCO has impacted the cost and quality of its member hospitals and physicians to-date, and how its continued growth as a result of the proposed transactions²⁷ might impact health care spending, market functioning, quality improvement and care delivery structures, and access to care.²⁸ We also sought to minimize administrative burden on the parties and other market participants by

²⁵ The HPC noted in our Preliminary Report that the parties had provided an estimated spending impact that was smaller than the HPC's finding, but did not disclose the estimated amount in the interest of minimizing the disclosure of confidentially provided information. MASS. HEALTH POLICY COMM'N, REVIEW OF BETH ISRAEL DEACONESS CARE ORGANIZATION'S PROPOSED CONTRACTING AFFILIATION WITH NEW ENGLAND BAPTIST HOSPITAL AND NEW ENGLAND BAPTIST CLINICAL INTEGRATION ORGANIZATION (HPC-CMIR-2015-1) AND BETH ISRAEL DEACONESS CARE ORGANIZATION'S PROPOSED CONTRACTING AFFILIATION AND BETH ISRAEL DEACONESS MEDICAL CENTER'S AND HARVARD MEDICAL FACULTY PHYSICIANS' PROPOSED CLINICAL AFFILIATION WITH METROWEST MEDICAL CENTER (HPC-CMIR-2015-2 AND HPC-CMIR-2016-1), PURSUANT TO M.G.L. C. 6D, § 13 PRELIMINARY REPORT at page 70, note 214 (July 27, 2016), available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/material-change-notices-cost-and-market-impact-reviews/bidco-preliminary-cmir.pdf>.

²⁶ Parties' Response, Exh. A, at 1.

²⁷ Although the BIDCO-HMFP-MetroWest transaction is a clinical affiliation, BIDMC, HMFP, and MetroWest describe the BIDCO-MetroWest contracting affiliation as "an important component of the organizations' overall relationship." BETH ISRAEL DEACONESS CARE ORGANIZATION (BIDCO), NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Oct. 30, 2015), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, available at <http://www.mass.gov/anf/docs/hpc/material-change-notices/20151030-notice-of-material-change-bidco-mwmc.pdf>; VHS SUBSIDIARY NUMBER 9, INC. D/B/A METROWEST MEDICAL CENTER, NOTICE OF MATERIAL CHANGE TO THE HEALTH POLICY COMM'N (Oct. 30, 2015), AS REQUIRED UNDER MASS. GEN. LAWS ch. 6D § 13, available at <http://www.mass.gov/anf/docs/hpc/material-change-notices/20151030-mwmc-notice-of-material-change.pdf>. In addition, the clinical affiliation includes a requirement that MetroWest incorporate its employed physicians into BIDCO, and contains other provisions related to BIDCO contracting. Final Report, *supra* note 1, at Section II.F. Thus, although the proposed clinical affiliation is "different in type" from the other proposed transactions, it also relates to BIDCO contracting, and the parties acknowledge the close relationship between the two MetroWest transactions.

²⁸ The HPC rejects the parties' statement on page 2 of the Party Response that reference to and focus on BIDCO in our analyses is "disproportionate" in light of the centrality of these questions to our review, the fact that BIDCO is party to two of the three transactions under review, and the fact that BIDCO's contracting relationship with MetroWest is "an important part" of the third transaction.

streamlining the reviews.²⁹ In response to the parties' feedback, we have added certain language throughout the Final Report to further clarify the roles of each of the parties.

The parties also suggest that because the HPC characterizes BIDCO as a hospital network, a physician network, and an ACO, it is "unclear which role and related indicators should be considered primary in assessing baseline position and potential impact of transactions."³⁰ However, BIDCO itself acknowledges its multiple roles in the market, describing itself as "a value-based physician and hospital network and an Accountable Care Organization" that offers "physician groups and hospitals the structure to contract, share risk, and build care management systems together, with the goal of providing the highest quality care in the most cost-efficient way."³¹ The Parties' Response echoes this description.³² The HPC has sought to describe BIDCO in terms relevant to our analyses of costs, market functioning, quality and care delivery, and access, and to compare it to relevant comparators for each analysis.³³ We have also added language to certain descriptions of our analyses in the Final Report to further clarify BIDCO's roles in relation to its members and other market participants in light of the parties' feedback.

III. The parties' commitments and future interactions with the HPC

Based on the findings in the Preliminary Report and concerns highlighted by Commissioners at the HPC's July 27th public meeting, the HPC identified certain key issues for the parties to address in their response, including:

- specific commitments to mitigate concerns about increases in spending due to NEBCIO physician rate increases, potential increased utilization of BIDMC, and the potential for the transactions to strengthen BIDCO's negotiating position with commercial payers;

²⁹ See MASS. HEALTH POLICY COMM'N, MINUTES OF THE HEALTH POLICY COMM'N (Dec. 16, 2015), available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/public-meetings/board-meetings/20160120-commission-document-board-minutes-for-december-16-2015.pdf>; MASS. HEALTH POLICY COMM'N, MINUTES OF THE HEALTH POLICY COMM'N (Mar. 2, 2016), available at <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/public-meetings/board-meetings/20160302-board-minutes.pdf>.

³⁰ Parties' Response, Exh. A, at 2.

³¹ See *About Us*, BETH ISRAEL DEACONESS CARE ORGANIZATION, <http://www.bidpo.org/aboutus/index.html> (last visited Aug. 24, 2016).

³² The Parties' Response states that BIDCO is "an [ACO] comprised of and governed by physicians and hospitals on a membership basis. Members pay dues to use BIDCO as a vehicle to share risk, exchange information, manage cost and quality, coordinate care, and contract with payers." Parties' Response, Exh. A, at 2.

³³ For example, when calculating market shares, we compared BIDCO network shares to those of other contracting networks, including their non-corporately affiliated members. Final Report, *supra* note 1, at page 27, note 107. Specifically, Emerson Hospital and Hallmark Health System are included in the inpatient shares of Partners HealthCare through 2015 because Partners establishes contracts on behalf of those hospitals (Cambridge Health Alliance, Emerson Hospital, and the Hallmark hospitals were mistakenly omitted from note 105 of our Preliminary Report, even though their shares were included for appropriate years of our analyses, but this oversight has been corrected in the Final Report). Similarly, in assessing primary care market shares, the share of Charles River Medical Associates, for example, is included in Partners' share because Partners establishes commercial contracts on behalf of that physician group even though Charles River is not corporately affiliated with Partners.

- data indicating that BIDCO affiliation has been responsible for decreased spending and/or improved quality for current affiliates;
- details regarding how quality improvement would be achieved, such as how progress toward quality improvement would be measured, specific improvements or benchmarks that would be expected in specific time periods, and how progress would be made transparent to the public;
- additional information regarding NEBH's payer mix and commitments to improve access for Medicaid patients; and
- commitments to maintain (or further enhance) behavioral health services at MetroWest and commitments that new primary care providers would serve Medicaid patients.

The HPC appreciates the following specific commitments made by the parties regarding access to care in their response:

- the specific commitment by NEBH to increase its share of Medicaid patients over time to a share proportionate to that of BIDMC's orthopedic patients;
- the specific commitment by MetroWest, BIDMC, and HMFP to maintaining behavioral health services at MetroWest, evaluating opportunities to collaborate on behavioral health programs, and facilitating access to psychiatric services for patients of new primary care practices established as a result of the clinical affiliation; and
- the specific commitment by MetroWest, BIDMC, and HMFP that new primary care practices established as a result of the clinical affiliation will accept all payers.

However, the HPC is disappointed that the parties made only limited specific commitments, outside of compliance with their existing legal requirements, to further enhance transparency and accountability for other impacts of the proposed transactions. Specifically, the Parties' Response states a commitment to supporting the HPC's role and Chapter 224 objectives, but declines to specify timeframes by which positive results of the transactions could be demonstrated, rejects any additional reporting or monitoring requirements, and states that the parties had already provided all available information regarding their plans and performance to date.³⁴

Recognizing the potential for both positive and negative impacts from these transactions, the HPC finds ongoing monitoring of the parties' performance necessary, including the parties' progress on stated goals of the transactions.³⁵ The HPC will assess the parties' performance over time through its authority to monitor the health care market including, but not limited to, its authority to require specific written and oral testimony in connection with the HPC's annual cost trends hearings (M.G.L. c. 6D, § 8), to evaluate future transactions in light of the parties' historic performance (c. 6D, § 13), and to potentially require a performance improvement plan or cost

³⁴ Parties' Response, Exh. A, at 5-6.

³⁵ As the parties state, "It is certainly reasonable to expect that Parties will, in time, have more data to support their positions" that BIDCO membership and BIDMC clinical affiliations will lead to improved efficiency and quality performance, and that the proposed transactions will also yield positive results in these "impact domains." Parties' Response, Exh. A, at 6.

and market impact review if a party is identified by CHIA as having excessive health care cost growth (c. 6D, § 10).

IV. Other responses and clarifications

The following are responses to some of the other points raised in the Parties' Response. We have commented only where we feel it necessary to clarify our methodology or identify changes in our Final Report as a result of helpful clarifications by the parties.

Description and comment	Page of Parties' Response
The parties raise concerns with the Preliminary Report's characterization of BIDMC's payer mix and the chart showing inpatient payer mix at AMCs on page 55. The characterization of BIDMC's public payer mix as relatively low is intended only as a comparison to other AMCs. The chart orders hospitals by total percent of payer mix represented by Medicare, Medicaid, and other government payer discharges, not by commercial payer mix as suggested by the parties. The parties also suggest BIDMC should be compared only to Eastern Massachusetts AMCs. Limiting the comparison to only Eastern Massachusetts AMCs and patients within BIDMC's PSA does not change BIDMC's position relative to other AMCs. We have added certain clarifying language to the notes following the payer mix charts.	6
We have changed descriptions of BIDCO governance and voting shares based on the parties' statements that the BIDCO and HMFP presidents co-chair BIDCO's board, and that this structure does not grant either organization disproportionate voting rights.	11
We have modified our description of BIDCO's contracting practices based on the parties' statements about how BIDCO establishes contracts on behalf of its hospital members.	11
We have clarified that NEBH's bed count, as with all bed counts in the report, is based on the number of staffed beds reported in CHIA's 2014 Hospital Profiles. ³⁶	11
The parties suggest that the HPC should compare the TME of provider groups on an adjusted and normalized weighted average basis. However, because commercial payers use unique and proprietary health status adjustment methodologies, health status adjusted TME cannot be validly combined across commercial payers in the way that the parties suggest. The Final Report thus includes separate descriptions of TME for provider groups for each of the three largest payers, with further clarification around the TME performance of different provider groups in response to the parties' comments.	11
We have changed our description of BIDCO's EHR policies in response to the parties' clarification that BIDCO hosts only one EHR platform.	11

³⁶ CTR. FOR HEALTH INFO. & ANALYSIS, HOSPITAL PROFILE: NEW ENGLAND BAPTIST HOSPITAL (Nov. 2015), available at <http://www.chiamass.gov/assets/docs/r/hospital-profiles/2014/ne-bapti.pdf>.