MANDATED HEALTH BENEFIT PROPOSAL (MHBP) REVIEW
SESSION LAW—ACTS OF 2018 CHAPTER 208 SECTION 105
APPROVED, AUGUST 9, 2018:

AN ACT FOR PREVENTION & ACCESS TO APPROPRIATE CARE & TREATMENT OF ADDICTION

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by Berry Dunn McNeil & Parker, LLC

Mandated Benefit Review of Session Law – Acts of 2018 Chapter 208 Section 105 Submitted to the 191st General Court:

An Act for Prevention and Access to Appropriate Care and Treatment of Addiction

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1.0 Executive Summary

1.1 History of Chapter 208 Section 105

Chapter 208 Section 105 (Section 105)[1] requires the Massachusetts Center for Health Information and Analysis (CHIA) to review and evaluate the potential fiscal impact of four mandated health benefit proposals (MHBPs) pertaining to mental health services. Section 105's MHBPs are comparable to mandated service provisions in Chapter 258 of the Acts of 2014[i] limiting preauthorization and utilization review by insurance carriers (carriers) and shifting medical necessity determinations related to *substance use disorder services* to providers. Section 105's MHBPs provide nearly identical requirements pertaining to *mental health services* for four levels of care.

This report is not intended to determine whether the MHBPs of Section 105 would constitute health insurance benefit mandates for purposes of Commonwealth defrayal under the Affordable Care Act (ACA), nor is it intended to be the sole basis for the Commonwealth's estimates of defrayal if the requirements are determined to be health insurance benefit mandates requiring Commonwealth defrayal.

1.2 What Does Section 105 Propose?

The MHBPs in Section 105 would require carriers to cover medically necessary, as determined by the treating clinician in consultation with the patient, mental health acute treatment (AT), mental health crisis stabilization services (CSS), community-based acute treatment (CBAT), and intensive community-based acute treatment (ICBAT) and prohibit carriers from performing preauthorization and utilization review for specific periods for CSS, CBAT, and ICBAT. For mental health AT, carriers are prohibited from performing any preauthorization and utilization review for the duration of the services.

Appendix A provides a detailed side-by-side comparison of these four services across a number of key dimensions.

1.3 Medical Efficacy of Section 105

The research literature on community-based mental health service delivery describes many different models. The many ways of organizing and describing services, coupled with the inherent complexities in acute mental health care illnesses and treatment, make comparisons and generalizations difficult. The literature provides support for community-based services and residential services as cost-effective alternatives to AT with comparable outcomes.[2,3,4] Effective mental illness treatment requires multiple levels of service to provide individuals with the appropriate care for their level of acuity. By improving access to less-restrictive environments and increased patient autonomy, as well as more personalized treatment planning, CSS, CBAT, and ICBAT would be expected to improve mental health services access and quality for the relevant population.

In addition to required coverage for these less-restrictive settings, Section 105 also requires coverage for AT for adults, adolescents, and children. These are acute, inpatient services for patients who are a danger to others or

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i Chapter 258 of the Acts of 2014. An Act to Increase Opportunities for Long-Term Substance Abuse Recovery: https://malegislature.gov/Laws/SessionLaws/Acts/2014/Chapter258.

themselves. AT is a necessary part of the behavioral health care continuum but should only be used when this more-restrictive level of care is medically necessary.

Section 105 prohibits carriers from requiring authorization prior to receiving services, and it prohibits utilization review for specified periods for CSS, CBAT, and ICBAT. It prohibits utilization review for the duration of an AT stay. In a recent study, researchers at Harvard Medical School and Harvard Kennedy School interviewed professionals from state agencies and health care facilities across Massachusetts. Behavioral health provider interviewees reported they believe that readmissions are fueled by length of stay pressure[ii] and the need to "fail up"[iii] in order to access more acute services,[5] suggesting at least some providers believe quality of care would improve under Section 105. Massachusetts carriers surveyed for this study, on the other hand, expressed concerns that restriction of prior authorization and the requirement of different numbers of days before utilization review is permitted (14 days for CSS, 21 days for CBAT, 14 days for ICBAT, and not at all for AT) would increase readmissions.

Looking to the research literature on assessments of the effect of insurer utilization management on quality and outcomes in mental health, research targeted specifically at the question of efficacy effects of the utilization management restrictions contained in Section 105 have not been conducted. Other literature assessing quality and outcomes of insurer utilization management of mental health services may be applicable in a general way to this question. A comprehensive literature review of managed behavioral health carve-out arrangements published in 2007, after these arrangements had been in place for over a decade, found mixed results on quality and outcome measures, though the majority of research findings found no effect, including on readmissions.[6] Results finding improvements or deterioration in outcomes were generally found for narrow sub-populations or more vulnerable populations under Medicaid coverage.[7] Carve-out arrangements evaluated in this study would generally be assessed relative to previously unmanaged populations, and any changes in utilization, cost, or quality that resulted when managed care was implemented could be assumed to reverse if carrier care management were removed. Whether or not these extrapolations make this literature applicable to Section 105, there is not strong support for the positions of either providers or carriers regarding quality and outcome impacts.

1.4 Current Coverage

BerryDunn surveyed 10 carriers in Massachusetts, with 9 responding. All of the responding carriers currently cover medically necessary AT, CSS, CBAT, and ICBAT services for the treatment of mental health disorders without exclusions or benefit caps. All of the responding carriers reported they perform utilization management, which would change under the MHBPs. During the data collection phase from the carriers, BerryDunn discovered that carriers utilize different definitions and descriptions for the services in Section 105. Section 105 would standardize the terminology to be in alignment with MassHealth.

Carriers offering fully insured health plans in Massachusetts are mandated to include coverage for medically necessary behavioral health treatment according to the requirements of M.G.L. c. 175 §47B; M.G.L. c. 176A §8A;

[ii] Many provider interviewees (11 out of 33 interviewed) reported pressure from insurance providers to decrease length of stay (i.e., "length of stay pressure").

[iii] Several provider interviewees in the study specifically mentioned a "fail-up" system in which youth had to experience multiple acute psychiatric hospitalizations before insurance plans, state agencies, or schools would consider funding more-intensive treatment or residential care.

M.G.L. c. 176B §4A; and M.G.L. c. 176G §4M. In addition, mental health services, including behavioral health treatment, are considered one of the 10 essential health benefits (EHBs) under the federal ACA. Benefits are defined for Massachusetts according to its benchmark health plan[8] (the Blue Cross and Blue Shield of Massachusetts HMO Blue® plan), which covers medically necessary services[iv] to diagnose and/or treat behavioral health conditions. The plan covers inpatient services, intermediate treatments, and outpatient services.[9]

In a bulletin on December 14, 2018, the Massachusetts Division of Insurance (DOI) and Department of Mental Health (DMH)[v] clarified child and adolescent mental health services that must be covered by carriers under state law. CBAT and ICBAT are included, and the definitions provided are in alignment with those of MassHealth.[vi] Coverage becoming effective on or after July 1, 2020 is required to include these services, as outlined in the bulletin, and carriers must have established systems for members to access CBAT and ICBAT through their managed care provider networks.

Furthermore, under the federal Mental Health Parity and Addiction Equity Act of 2008 (MPHAEA), group health plans and health insurance issuers that offer insured mental health benefits or substance use disorder benefits may not impose less-favorable benefit limitations on those benefits than on medical/surgical benefits.

1.5 Cost of Implementing the Act

Requiring coverage for this benefit by fully insured health plans would result in an average annual increase, over five years, to the typical member's monthly health insurance premium of between $0.41 and $1.04 per member per month (PMPM), or between 0.1% and 0.2% of premiums. The impact on premiums is driven by the provisions of Section 105 that limit the carrier's ability to perform prior authorization and utilization review. The impact on any one individual, employer group, or carrier may vary from the overall results, depending on the current level of benefits each receives or provides, and on how those benefits would change under the proposed language of MHBP.

1.6 Plans Affected by the Proposed Benefit Mandate

Section 105 applies to commercial fully insured health insurance plans, hospital service corporations, medical service corporations, and HMOs, as well as to both fully and self-insured plans operated by the Group Insurance Commission (GIC) for the benefit of public employees. The proposed mandate as drafted affects MassHealth; however, CHIA's analysis does not estimate the potential effect of the mandate on MassHealth expenditures.

[iv] Under M.G.L. c. 1760, §16(b), "A carrier may develop guidelines to be used in applying the standard of medical necessity… Any such medical necessity guidelines utilized by a carrier in making coverage determinations shall be: (i) developed with input from practicing physicians and participating providers in the carrier's or utilization review organization's service area; (ii) developed under the standards adopted by national accreditation organizations; (iii) updated at least biennially or more often as new treatments, applications and technologies are adopted as generally accepted professional medical practice; and (iv) evidence-based, if practicable. In applying such guidelines, a carrier shall consider the individual health care needs of the insured…"

[v] Commonwealth of Massachusetts. Bulletin 2018-07. To: Commercial Health Insurers, Blue Cross and Blue Shield of Massachusetts, Inc. and Health Maintenance Organizations. From: Gary D. Anderson, Commissioner of Insurance and Joan Mikula, Commissioner of Mental Health. Date: December 14, 2018. Re: Access to Services to Treat Child-Adolescent Mental Health Disorders. https://www.mass.gov/files/documents/2018/12/14/BULLETIN%202018-07%20%28Child-Adolescent%29_0.pdf.

[vi] "In Massachusetts, Medicaid and the Children's Health Insurance Program (CHIP) are combined into one program called MassHealth." https://www.mass.gov/topics/masshealth.

1.7 Plans Not Affected by the Proposed Benefit Mandate

Self-insured plans (i.e., plans in which the employer or policyholder retains the risk for medical expenses and uses a third-party administrator or insurer to provide only administrative functions such as member services and claims processing), except for those provided by the GIC, are not subject to state-level health insurance mandates. State mandates do not apply to Medicare and Medicare Advantage plans or other federally funded plans, including TRICARE (covering military personnel and dependents), the Veterans Administration, and the Federal Employee's Health Benefit Plan, the benefits for which are determined by or under rules set by the federal government.

2.0 Background and Section 105 Requirements

Governor Charlie Baker signed Chapter 208 of the Acts of 2018[10] on August 9, 2018, enacting House Bill 3947. Section 105 of the new law requires the Center for Health Information and Analysis (CHIA) to review and evaluate the potential fiscal impact of four mandated health benefit proposals (MHBPs), consistent with its responsibilities under §38C of chapter 3[11] of the Massachusetts General Laws. Section 105's MHBPs require carriers to cover:

1. Medically necessary mental health acute treatment (AT) that does not require preauthorization prior to obtaining treatment;[vii] provided, however, that medical necessity shall be determined by the treating clinician in consultation with the patient and noted in the patient's medical record
2. Medically necessary mental health crisis stabilization services (CSS) for not more than 14 days without requiring preauthorization prior to obtaining such services; provided, however, that a facility shall provide the carrier with both notification of admission and the initial treatment plan within 48 hours of admission; provided further, that utilization review procedures may be initiated on day seven and medical necessity shall be determined by the treating clinician in consultation with the patient and noted in the patient's medical record
3. Medically necessary community-based acute treatment (CBAT) for not more than 21 days; provided, however, that a facility shall provide the carrier both notification of admission and the initial treatment plan within 48 hours of admission; provided further, that utilization review procedures may be initiated on day 10; and provided further, that medical necessity shall be determined by the treating clinician in consultation with the patient and noted in the patient's medical record
4. Medically necessary intensive community-based acute treatment (ICBAT) services for not more than 14 days; provided, however, that a facility shall provide the carrier with both notification of admission and the initial treatment plan within 48 hours of admission; provided further, that utilization review procedures may be initiated on day 7; and provided further, that medical necessity shall be determined by the treating clinician in consultation with the patient and noted in the patient's medical record

Appendix A provides a detailed side-by-side comparison of these four services across a number of key dimensions.

[vii] BerryDunn submitted an inquiry to the sponsoring legislators and staff and verified that timeframes for prior authorization and utilization review were intentionally omitted, and, therefore, they are not permitted by carriers for the duration of AT.

Section 105 charges CHIA with performing a review of the above MHBPs consistent with Chapter 3 §38C,[12] including a review of the medical efficacy review. Medical efficacy reviews summarize current literature on the effectiveness and use of the mandated treatment or service, and describe the potential impact of a mandated benefit on the quality of patient care and the health status of the population.

The report proceeds in the following sections:

3.0 Mental Illness

- Section 3.1 provides a description of adult mental illness and information about its prevalence
- Section 3.2 provides a description of child and adolescent mental illness and information about its prevalence

4.0 Medical Efficacy Assessment: Mental Health AT, CSS, CBAT, ICBAT

- Section 4.1 provides an introduction
- Section 4.2 reviews mental health AT
- Section 4.3 reviews mental health residential treatments

5.0 Conclusion

Appendix A: Side-by-Side Comparison of Section 105's Requirements by Type of Service

Appendix B: MassHealth Diversionary Services – Community Crisis Stabilization

Appendix C: MassHealth Diversionary Services – CBAT

Appendix D: MA DOI/DMH Definition – CBAT

Appendix E: MassHealth Diversionary Services – ICBAT

Appendix F: DOI/DMH Definition – ICBAT

3.0 Mental Illness

Globally, mental illness is the cause of one third of the world's disability and takes a great toll in terms of human suffering and socioeconomic costs. Mental illness is common in the United States, with an estimated 50% of all Americans diagnosed with a mental illness or disorder at some point during their lifetime.[13]

3.1 Adult Mental Illness

In 2017, an estimated 46.6 million adults (18.9% of all U.S. adults) experienced any mental illness (AMI), [viii] and an estimated 11.2 million adults (4.5% of all U.S. adults) experienced serious mental illness (SMI).[ix] Mental illness is the third most common cause of hospitalization nationally for individuals aged 18 – 44.[14]

Frequently, individuals with mental illness also suffer from substance use disorder. In 2016, over 55 million people aged 18 years and over (more than one in five adults) suffered from a mental disorder and/or substance use disorder.[15,16] Of these adults, nearly 45 million had a mental disorder alone, 11 million had a substance use disorder alone, and 8 million had both a mental disorder combined with a substance use disorder (referred to as “co-occurring disorders”).[17,18]

Table 1 provides mental health illness prevalence estimates for Massachusetts compared to national estimates.

Table 1: Percentages, Annual Averages Based on 2016 and 2017 National Survey on Drug Use and Health (NSDUHs) – Ages 18+19

	MASSACHUSETTS	95% CONFIDENCE INTERVAL (CI)	TOTAL UNITED STATES	95% CI
Serious Mental Illness (SMI) in the Past Year	4.76%	(3.94 - 5.72)	4.38%	(4.21 - 4.56)
Any Mental Illness (AMI) in the Past Year	20.57%	(18.52 - 22.78)	18.57%	(18.20 - 18.93)
Received Mental Health Services in the Past Year	19.69%	(17.53 - 22.06)	14.60%	(14.28 - 14.93)
Had Serious Thoughts of Suicide in the Past Year	4.57%	(3.75 - 5.57)	4.19%	(4.03 - 4.35)
Major Depressive Episode (MDE)[x] in the Past year	7.56	(6.68 - 7.11)	6.89	(6.46 - 8.83)

According to the 2017 NSDUH, less than half (42.6%) of adults with AMI received mental health services in the year prior to being surveyed.[20] More women (47.6%) than men (34.8%) with AMI received mental health services.[21] The percentage of adults with AMI who received mental health services by age was 38.4% for ages 18 – 25 years, 43.3% for ages 26 – 49 years, and 44.2% for ages 50 years and older.[22] Nationally, 1.0% of adults (0.6% of adults with private health insurance) received inpatient mental health services within the previous year, and 7.5% of adults (7.1% of adults with private health insurance) received outpatient mental health services.[23]

[viii] AMI is defined as a mental, behavioral, or emotional disorder. AMI can vary in impact, ranging from no impairment to mild, moderate, and even severe impairment (e.g., individuals with SMI).

[ix] SMI is defined as a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities.

[x] MDE is characterized by a period of at least two weeks in which an individual experiences a depressed mood or loss of interest or pleasure in daily activities and has a majority of specified depression symptoms as noted in the fifth edition of the Diagnostic and Statistical Manal of Mental Disorders (DSM-5).

3.2 Adolescent and Child Mental Illness

3.2.1 Adolescent Mental Illness

In 2017, 27% of Massachusetts high school students (grades 9 – 12) reported depression symptoms[xi] during the 12 months prior to the survey. This was below the national average of 31%. For the same period, 14% of Massachusetts adolescents reported at least one MDE compared to 13% nationally. Twelve percent of Massachusetts students reported they had seriously considered attempting suicide in the previous year compared to 17% nationally. Furthermore, 5% of Massachusetts students reported actually attempting suicide during this period, compared to 7% nationally.

The national number of individuals aged 12 – 17 who stayed overnight or longer in a hospital for a mental health diagnosis was 622,000 (2.5%); the number of those in that category who stayed overnight or longer in a residential treatment center was 318,000 (1.3%). In individuals aged 12 – 17, 41.5% who reported at least one MDE received treatment.

3.2.2 Adolescent Mental Illness

In children, mental disorders are described as serious changes in the way they typically learn, behave, or handle their emotions, causing distress and problems getting through the day.[24,25] Common mental disorders that can be diagnosed in childhood are attention-deficit/hyperactivity disorder (ADHD), anxiety, and behavior disorders.[26] Nationally, one in six children aged two to eight has a mental, behavioral, or developmental disorder.[27] Severe depression in children can lead to suicide. In children aged 10 – 14, suicide is the second leading cause of death after unintentional injury.[28]

4.0 Medical Efficacy Assessment: Mental Health AT, Mental Health CSS, CBAT, ICBAT

4.1 Introduction

Mental health services use many different labels that are often specific to geography and/or the clinical tradition from which the services were developed. As a result, there is much room for confusion in defining levels of care and the distinctions between them. Section 105 uses a service typology for the four levels of care described in the law; this typology is taken directly from the classification used in MassHealth, the Massachusetts Medicaid program. This typology/terminology is less familiar to those carriers who do not operate as subcontractors under MassHealth for Medicaid managed care. Appendix A and the summaries below describe how these levels of care are defined.

[xi] "Depression symptoms" are defined as feeling sad or hopeless almost every day for two or more weeks in a row so that they stopped doing some usual activities.

4.2 Mental Health AT

For purposes of Section 105, "mental health acute treatment" means 24-hour medically supervised mental health services provided in an inpatient facility licensed by the Department of Mental Health (DMH), that provides psychiatric evaluation, management, treatment, and discharge planning in a structured treatment setting. Inpatient mental health service is the most intense level of psychiatric care for patients who pose a significant danger to themselves or others.[29]

Psychiatric hospitals are licensed by the DMH and by the Department of Public Health (DPH) for substance abuse services.[30] These hospitals frequently offer residential and other mental health services in addition to acute inpatient services.

According to the Agency for Healthcare Research and Quality (AHRQ), mood disorders were ranked fifth nationally for inpatient principal diagnosis in 2015, with a rate of 267 stays per 100,000 population.[31] The other most common mental disorder diagnoses in order of ranking include schizophrenia and other psychotic disorders, anxiety disorders, adjustment disorders, and impulse disorders. In 2014, for every 100 patients with an SMI, there were approximately 18 hospitalizations in the United States and 20 hospitalizations in Massachusetts. Compared with non-mental health/substance use disorder admissions, mental health/substance use disorder stays are longer (6.6 days versus 4.8 days).[32] Between mental health and substance use disorder primary diagnoses, mental health stays are longer at an average of 8.3 days.[33]

4.2.1 Adult Mental Health AT

In 2014, 3.6% of adult patient hospitalizations in Massachusetts were due to SMI. Patients with bipolar disorder as a principal diagnosis had the highest number of hospitalizations, although patients with schizophrenia had a higher rate of hospitalization.[34] The three most common primary mental health diagnoses in order of number of admissions are bipolar disorder, major depressive disorder, and schizophrenia.[35] The average length of stay for patients with schizophrenia is 15 days, major depressive disorder 8.8 days, and bipolar disorder 8.7 days.[36]

4.2.2 Adolescents and Children Mental Health AT

In a 2015 study to understand how youth flow through the mental health system in Massachusetts, providers reported a perceived increase in acuity of the children in acute settings.[37] The providers believed the increased acuity was related to more children being treated in the community, leaving more complex and challenging youth in acute settings.[38]

"Psychotic disorder, not otherwise specified (NOS)" is most frequently the primary diagnosis for admission to AT for individuals 1 – 17 years old. This diagnosis is possibly used to prevent the stigmatization from other specific diagnoses.[39] The average length of stay for individuals under 18 years of age is a week longer on average than for adults.[40]

Mental health AT is a critical component of the behavioral health system. For patients who are suicidal, a danger to others, or experiencing psychosis, the inpatient setting provides a safe and secure environment for stabilization. However, the hospital is costly and disruptive for young patients and their families. Patients are transferred to a less-restrictive level of care as soon as they can be safely transitioned.

4.2.3 Mental Health AT Efficacy

There is a lack of research related to mental health AT efficacy, as randomized control trials are difficult for these high-level services. Since patients admitted to AT generally pose a danger to themselves or others, they need the added security of AT, and residential levels of treatment would not be adequate. For patients who do not pose a risk to themselves or others, residential levels of care have been found to be lower-cost alternatives with similar outcomes.[41,42,43] It is widely accepted that patients with mental illness should be treated in the least-restrictive environment. Accordingly, patients should be transitioned out of AT to a lower level of care as soon as this can be safely accomplished.

4.3 Mental Health Residential Treatments

4.3.1 Mental Health CSS

Mental health CSS are used as a diversion from AT and provide clinically managed mental health diversionary or step-down services for adults or adolescents. These services are usually provided as an alternative to mental health acute treatment and may include intensive crisis stabilization, counseling, outreach to families and significant others, and after-care planning. The primary objective of CSS is to promptly conduct a comprehensive assessment of the individual and to develop a treatment plan with emphasis on crisis intervention services necessary to stabilize and restore the individual to a level of functioning that requires a less restrictive level of care.[44] CSS provide continuous observation and supervision for individuals who do not require treatment in an acute inpatient setting. Under Section 105, mental health crisis stabilization has the same definition as defined by MassHealth. See Appendix B for MassHealth's description of CSS.

The primary differences between CSS and inpatient level of care is the acuity of the patient, the unlocked setting, the level of psychiatry services, and the absence of immediate need for hospital-based diagnostic tests or general medical treatment. CSS provide a safe environment to determine the appropriate level of care for the patient's longer-term needs and deflect from higher levels of care.[45,46]

4.3.2 CBAT

CBAT refers to 24-hour clinically managed mental health diversionary or step-down services provided to children and adolescents, usually provided as an alternative to mental health acute treatment. Services are provided to children/adolescents who require a 24-hour-a-day, seven-day-a-week staff-secure (unlocked) acute treatment center.

CBAT provides short-term crisis stabilization, therapeutic intervention, and specialized programming in a controlled staff-secure environment with the goal of supporting the rapid and successful transition of children and adolescents back to the community.[47] As with adults, mental health services for children and adolescents should take place in the least-restrictive setting. CBAT services may be used as an alternative to or transition from inpatient services.[48]

Patients are frequently moved from mental health AT to CBAT as soon as they can be safety treated at a lower acuity level, as it provides a less-restrictive alternative with more autonomy. Discharge planning begins at admission to facilitate a smooth reintegration to home, school, and community.

BerryDunn clarified with the sponsoring legislators and staff that Section 105's CBAT is intended to have the same definition as MassHealth's (see Appendix C). The MA DOI and DMH clarified in a joint bulletin[xii] to carriers that CBAT is intended to be a covered service under current law. The definition provided in the bulletin is consistent with MassHealth's[xiii] (see Appendix D).

4.3.3 ICBAT

ICBAT is a service similar to CBAT for children and adolescents but of higher intensity with more frequent psychiatric evaluation and medication management and a higher staff/patient ratio (see Appendix E). For a patient to be admitted to ICBAT, they must meet all CBAT criteria for admission as well as one of the following: 1) suicidal or homicidal ideation with plan; 2) commanded hallucinations; 3) persecutory delusions; 4) fire-setting or sexually reactive behavior; or 5) impairment to the degree that the patient manifests severe psychiatric symptoms which impact social and interpersonal function and is not responsive to less-intensive treatment and/or management efforts.

Children and adolescents receiving ICBAT services stay in a staff-secure setting. ICBAT programs allow children and adolescents to be admitted directly from the community. ICBAT programs are also able to treat the same population with clinical presentations similar to those referred to inpatient mental health services but who can be cared for safely in an unlocked setting.[49] Since children and adolescents are more likely to be impacted by Emergency Department (ED) boarding,[50,51,xiv] ICBAT allows the ability to avoid unnecessary time in the ED and potentially an inpatient admission for children and adolescents with behavioral health disorders.

BerryDunn clarified with the sponsoring legislators and staff that Section 105's ICBAT is intended to have the same definition as MassHealth's (see Appendix E). The MA DOI and DMH clarified in a joint bulletin to carriers that ICBAT is intended to be a covered service under current law. The definition provided in the bulletin is consistent to MassHealth's (see Appendix F).

4.3.4 CSS/CBAT/ICBAT Efficacy

CSS, CBAT, and ICBAT are based on utilization of commonly applied principles of least-restrictive environment, increasing patient autonomy as appropriate, and individualized care. There is little research directly evaluating the efficacy of community-based, residential mental health treatments, and the variety of community-based models complicate research, making valid comparisons and generalizations difficult.[52] However, there is support for community-based services and residential services as cost-effective alternatives to AT with comparable outcomes in the literature.[53,54,55] In a systematic review of 26 studies of acute and subacute residential health services, acute residential mental health services were found to offer treatment outcomes equivalent to those of inpatient services, with users reporting high satisfaction.[56] The author of the review suggested further research to determine the client groups that would benefit most from acute residential services.

[xii] Commonwealth of Massachusetts. Bulletin 2018-07. To: Commercial Health Insurers, Blue Cross and Blue Shield of Massachusetts, Inc. and Health Maintenance Organizations. From: Gary D. Anderson, Commissioner of Insurance and Joan Mikula, Commissioner of Mental Health. Date: December 14, 2018. Re: Access to Services to Treat Child-Adolescent Mental Health Disorders. **https://www.mass.gov/files/documents/2018/12/14/BULLETIN%202018-07%20%28Child-Adolescent%29.pdf**.

[xiii] Commonwealth of Massachusetts. Bulletin 2018-07.

[xiv] When patients wait in the ED for 12 or more hours, it is called boarding. Boarding has been shown to lead to ED crowding, poor patient experience and lower quality of care, delays in treatment, with increased morbidity and mortality, and lost revenue.

While there is research showing that managed behavioral health care for children and adolescents generated savings from fewer admissions,[57] there is little direct evidence showing how outcomes have been affected in general.[58,59] In a more narrow study—a systematic review of 21 publications—residential programs were found to foster healing among sexually exploited children and adolescents.[60] In a study by researchers from Harvard Medical School and Harvard Kennedy School, behavioral health providers reported they believe that readmissions are fueled by length of stay pressure[xv] and the need to "fail up"[xvi] in order to access more acute services,[61] suggesting at least some providers believe quality of care would increase with a shift of medical necessity determination to treating providers. Massachusetts carriers surveyed for this study, on the other hand, expressed concerns that restriction of prior authorization and the requirement of different numbers of days before utilization review is permitted (14 days for CSS, 21 days for CBAT, 14 days for ICBAT, and not at all for AT) would increase readmissions. Literature targeted specifically at the question of efficacy effects of the utilization management restrictions contained in Section 105 have not been conducted. A literature review of managed behavioral health carve-out arrangements found mixed results on outcome measures, though the majority of research findings found no effect, including on readmissions. [62] Results finding improvements or deterioration in outcomes were generally found for narrow populations or more vulnerable populations under Medicaid coverage.[63] Carve-out arrangements evaluated would generally be compared to previously unmanaged populations, and presumably the impacts of implementing managed care would be opposite of the effects of removing it. Even if these extrapolations made this literature applicable, it would not constitute strong support for the positions of either providers or carriers.

In understanding the efficacy of these services, it is important to understand that they serve as an alternative to scarce and more expensive AT services. Patients who present to an ED for mental health treatment often face long wait times, and the environment can be difficult for those with acute psychological needs.[64] The noise, activity, and long wait times in an ED may increase patients' level of distress.[65] While ED boarding affects patients with a wide variety of diagnoses, those with mental illness diagnoses are disproportionately affected, waiting on average more than three times longer for an inpatient bed than medical/surgical patients do.[66]

From 2011 – 2015, the number of patients in Massachusetts seeking care for behavioral health conditions increased 13%, and the proportion of patients who "boarded" grew from 17.4% in 2011 to 22.8% in 2015.[67] Since 2015, Massachusetts has made significant efforts to decrease ED boarding by those with behavioral health diagnoses. On January 3, 2018, the Massachusetts DMH, DOI, and DPH jointly issued a bulletin with instructions to expedite patients' admission to inpatient hospitalization or diversionary settings, such as CBAT, ICBAT, and CSS.

4.4 Conclusions about Efficacy

The four services mandated for coverage by Section 105 have significant evidence for their efficacy. The efficacy of the provisions of Section 105 prohibiting (CBAT, ICBAT, and CSS) utilization management activities before specified time periods after admission have elapsed, and completely prohibiting them for AT services are not directly addressed in current research. However, the experience of the introduction of these types of managed care utilization

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[xv] Many provider interviewees (11 out of 33 interviewed) reported pressure from insurance providers to decrease length of stay (i.e., "length of stay pressure").

[xvi] Several provider interviewees in the study specifically mentioned a "fail-up" system in which youth had to experience multiple acute psychiatric hospitalizations before insurance plans, state agencies, or schools would consider funding more-intensive treatment or residential care.

management activities in the 1990s, primarily by managed behavioral health carve-out vendors, and the research assessing their impact, may be useful. Stakeholders would need to agree that the implementation of managed care provided a reasonable parallel, and assume that any effects of implementing those programs would have opposite effects upon their removal. A comprehensive literature review of managed behavioral health carve-out arrangements published in 2007, after these arrangements had been in place for over a decade, found mixed results on quality and outcome measures, though the majority of research findings found no effect, including on readmissions.[68] Results finding improvements or deterioration in outcomes were generally found for narrow sub-populations or more vulnerable populations under Medicaid coverage.[69] Given the general lack of findings regarding impacts on quality and outcomes, the question of whether this research is applicable is more or less moot, as it provides little evidence on efficacy impacts of moving admission and continuing stay decisions to providers.

5.0 Conclusion

Section 105's provisions address the locus of decision-making control over level of care placement for residential mental health services. AT care is reserved for those patients who are a danger to themselves or others. AT is an important part of the behavioral health care continuum when it is needed, but it is intended for the highest-acuity cases. The CSS, CBAT, and ICBAT levels of care are intended to provide a less-acute level of behavioral health treatment with more effective, individualized services in less-restrictive environments than AT. CSS, CBAT, and ICBAT provide less-restrictive, more-conducive environments for treatment than EDs or AT for patients, especially children and adolescents, in mental illness crisis. For patients meeting admission criteria, these services can provide a step-down from more-acute and more-expensive service and a step-up to prevent escalation to AT. Evidence for the efficacy of these services is long-standing. It is generally accepted that a continuum of care providing alternatives for patients in their care process provides the best outcome. However, direct assessments of the incremental efficacy of moving the decision making for the appropriate level of care to providers and away from carriers have not been conducted.

Appendix A: Side-by-Side Comparison of Section 105's Requirements by Type of Service

	MENTAL HEALTH AT	MENTAL HEALTH CRISIS STABILIZATION	CBAT	ICBAT
Definition	24-hour medically supervised mental health services provided in an inpatient facility, licensed by the department of mental health, that provides psychiatric evaluation, management, treatment, and discharge planning in a structured treatment setting	24-hour clinically managed mental health diversionary or step-down services for adults or adolescents as defined by Mass Health, usually provided as an alternative to mental health acute treatment, which may include intensive crisis stabilization counseling, outreach to families and significant others and after-care planning	24-hour clinically managed mental health diversionary or step-down services for children and adolescents, as defined by the department of early education and care, usually provided as an alternative to mental health acute treatment	Intensive 24-hour clinically managed mental health diversionary or step-down services for children and adolescents, as defined by the department of early education and care, usually provided as an alternative to mental health acute treatment
Age	Adults, adolescents, and children	Adults and adolescents	Children and adolescents	Children and adolescents
Timeframe	Not specified	Not more than 14 days w/o preauthorization	Not more than 21 days w/o preauthorization	Not more than 14 days w/o preauthorization
Carriers may require preauthorization before treatment?	No	No	No	No
Medical necessity determinations?	Treating clinician in consultation with the patient	Treating clinician in consultation with the patient	Treating clinician in consultation with the patient	Treating clinician in consultation with the patient
Notification and treatment plan to carrier timeframe	N/A	Within 48 hours	Within 48 hours	Within 48 hours
Time before utilization review	N/A	May be initiated on day 7	May be initiated on day 10	May be initiated on day 7

Appendix B: MassHealth Diversionary Services – Community Crisis Stabilization

DIVERSIONARY SERVICES

Community Crisis Stabilization (Adult)

This level of care is a facility- or community-based program where individuals with an urgent/emergent need can receive crisis stabilization services in a staff-secure, safe, structured setting that is an alternative to hospitalization. It provides continuous 24-hour observation and supervision for individuals who do not require intensive clinical treatment in an inpatient psychiatric setting and would benefit from a short-term, structured stabilization setting.

Services at this level of care include crisis stabilization, initial and continuing bio-psychosocial assessment, care management, medication management, and mobilization of family/guardian/natural supports and community resources. Some of the functions, such as medication management, administration, and physical care, will require access to medical services while other services can be provided by mental health professionals. The primary objective of the crisis stabilization service is to promptly conduct a comprehensive assessment of the individual and to develop a treatment plan with emphasis on crisis intervention services necessary to stabilize and restore the individual to a level of functioning that requires a less restrictive level of care. Active family/guardian/significant other/natural supports involvement is necessary unless contraindicated; frequency should occur based on individual needs.

Criteria

Admission Criteria	***All** of the following criteria are necessary for admission to this level of care:* 1. The individual demonstrates active symptomatology consistent with a DSM-5 diagnosis, which requires and can reasonably be expected to respond to intensive, structured intervention within a brief period of time; 2. An adult demonstrates a significant incapacitating disturbance in mood/thought/behavior, interfering with activities of daily living so that immediate stabilization is required; OR A child/adolescent is experiencing emotional or behavioral problems in the home, school, community and/or treatment setting and is not sufficiently stable, either emotionally or behaviorally, to be treated outside of a 24-hour therapeutic environment; 3. Clinical evaluation of the individual's condition indicates recent significant decompensation with a strong potential for danger to self or others, and the individual cannot be safely maintained in a less restrictive level of care; 4. The individual requires 24-hour observation and supervision but not the constant observation of an inpatient psychiatric setting except when being used as an alternative to an inpatient level of care; and 5. Clinical evaluation indicates that the individual can be effectively treated with short-term intensive crisis intervention services and

	returned to a less-intensive level of care within a brief time frame. 6. It is reasonably expected that a short-term crisis stabilization period in a safe and supportive environment will ameliorate the individual's symptoms.
Psychosocial, Occupational, and Cultural and Linguistic Factors	*These factors, as detailed in the introduction, may change the risk assessment and should be considered when making level-of-care decisions.*
Exclusion Criteria	***Any** of the following criteria is sufficient for exclusion from this level of care:* 1. The individual's psychiatric condition is of such severity that it can only be safely treated in an inpatient setting; 2. The individual's medical condition is such that it requires treatment in a medical setting; 3. The individual/parent/guardian does not voluntarily consent to admission or treatment; 4. The individual can be safely maintained and effectively treated in a less intensive level of care; 5. The primary problem is not psychiatric. It is a social, legal, or medical problem without a concurrent major psychiatric episode meeting criteria for this level of care; or 6. Admission is being used as an alternative to incarceration, the juvenile justice system, protective services, specialized schooling, or as an alternative to medical respite or housing; 7. Conditions that would not be appropriate for treatment at this level of care are: a. permanent cognitive dysfunction without acute DSM-5 diagnosis b. primary substance use disorder requiring treatment in a specialized level of care c. medical illness requiring treatment in a medical setting d. impairment with no reasonable expectation of progress toward treatment goals at this level of care e. chronic condition with no indication of need for ongoing treatment at this level of care to maintain stability and functioning
Continued Stay Criteria	***All** of the following criteria are necessary for continuing treatment at this level of care:* 1. The individual's condition continues to meet admission criteria at this level of care; 2. The individual's treatment does not require a more-intensive level of care, and no less-intensive level of care would be appropriate or is available; 3. After initial evaluation and stabilization, it is determined that the presenting symptomatology is indicative of a DSM-5 diagnosis,

	which is amenable to continued treatment at this level of care. 4. Care is rendered in a clinically appropriate manner and is focused on the individual's behavioral and functional outcomes as described in the treatment and discharge plan; 5. Treatment planning is individualized and appropriate to the individual's age and changing condition, with realistic, specific, and attainable goals and objectives stated. Treatment planning should include active family or other support systems social, occupational and interpersonal assessment with involvement unless contraindicated. Expected benefit from all relevant treatment modalities, including family and group treatment, is documented. The treatment plan has been implemented and update with consideration of all applicable and appropriate treatment modalities. 6. All services and treatment are carefully structured to achieve optimum results in the most time efficient manner possible consistent with sound clinical practice; 7. Progress in relation to specific symptoms or impairments is clearly evident and can be described in objective terms, but goals of treatment have not yet been achieved, or adjustments in the treatment plan to address lack of progress are evident; 8. The individual is actively participating in treatment to the extent possible consistent with the individual's condition; 9. When medically necessary, appropriate psychopharmacological intervention has been prescribed and/or evaluated; 10. There is documented active discharge planning starting with admission; and, 11. There is documented active coordination of care with behavioral health providers, the primary care clinician (PCC), and other services and state agencies. If coordination is not successful, the reasons are documented and efforts to coordinate care continue.
Discharge Criteria	***Any*** *of the following criteria is sufficient for discharge from this level of care:* 1. The individual no longer meets admission criteria or meets criteria for a less or more intensive level of care; 2. Treatment plan goals and objectives have been substantially met and/or a safe, continuing care program can be arranged and deployed at a less intensive level of care. Follow-up aftercare appointment is arranged for a time frame consistent with the individual's condition and applicable MBHP standards; 3. The individual, parent, and/or legal guardian is not engaged in treatment or is not following program rules and regulations. The lack of engagement is of such a degree that treatment at this level of care becomes ineffective or unsafe, despite multiple, documented attempts to address engagement issues. In addition, either it has been determined that involuntary inpatient treatment is

	inappropriate, or a court has denied a request to issue an order for involuntary inpatient treatment; 4. Consent for treatment is withdrawn, and either it has been determined that involuntary inpatient treatment is inappropriate, or the court has denied involuntary inpatient treatment; 5. Support systems that allow the individual to be maintained in a less-restrictive treatment environment have been secured; 6. The individual is not making progress toward treatment goals, and there is no reasonable expectation of progress at this level of care, nor is it required to maintain the current level of functioning; or 7. The individual's physical condition necessitates transfer to a medical facility.

Appendix C: MassHealth Diversionary Services – CBAT

DIVERSIONARY SERVICES

Community-Based Acute Treatment (CBAT) (Child/Adolescent)

Community-Based Acute Treatment (CBAT) is provided to children/adolescents who require a 24-hour-a-day, seven-day-a-week staff-secure (unlocked) acute treatment setting. For children and adolescents with serious behavioral health disorders, CBAT provides therapeutic intervention and specialized programming in a controlled environment with a high degree of supervision and structure. CBAT services are provided in the context of a comprehensive, multidisciplinary, and individualized treatment plan that is frequently reviewed and updated based on the Member's clinical status and response to treatment. Intensive therapeutic services include, but are not limited to, daily medication monitoring; psychiatric assessment; nursing availability; specialing (as needed); individual, group and family therapy; case management; family assessment and consultation; discharge planning; and psychological testing as needed. Active family/caregiver involvement through family therapy, a key element of treatment, is expected. Discharge planning should begin at admission, including plans for reintegration into the home, school, and community. If discharge to home/family is not an option, alternative placement must be rapidly identified with regular documentation of active efforts to secure such placement.

Criteria

Admission Criteria	***All** of the following criteria are necessary for admission:* 1. The child/adolescent demonstrates symptomatology consistent with a DSM-5 diagnosis, which requires and can reasonably be expected to respond to therapeutic intervention; 2. The child/adolescent is experiencing emotional or behavioral problems in the home, school, community, and/or treatment setting and is not sufficiently stable, either emotionally or behaviorally, to be treated outside of a highly structured, 24-hour therapeutic environment; 3. The Member has only poor or fair motivation and/or insight and the community supports are inadequate to support recovery; 4. The family situation and functioning levels are such that the child/adolescent cannot currently remain in the home environment and receive outpatient treatment; and 5. The Member has sufficient cognitive capacity to respond to active acute and time limited psychological treatment and interventions.
Psychosocial, Occupational, and Cultural and Linguistic Factors	*These factors, as detailed in the introduction, may change the risk assessment and should be considered when making level-of-care decisions.*

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Exclusion Criteria	***Any** of the following criteria is sufficient for exclusion from this level of care:* 1. The child/adolescent exhibits severe suicidal, homicidal, or acute mood symptoms/thought disorder, which require a more intensive level of care; 2. The parent/guardian does not voluntarily consent to admission or treatment; 3. After initial evaluation and stabilization, it is determined that the presenting symptomatology is indicative of a DSM-5 diagnosis, which is amenable to continued treatment at this level of care. Conditions that would not be appropriate for continued treatment are: a. permanent cognitive dysfunction without an acute psychiatric disorder b. primary substance use disorder requiring treatment in a specialized level of care c. medical illness requiring treatment in a medical setting d. impairments indicate no reasonable expectation of progress toward treatment goals at this level of care e. chronic condition with no indication of need for ongoing treatment at this level of care to maintain stability and functioning 4. The child/adolescent can be safely maintained and effectively treated at a less intensive level of care; 5. The child/adolescent has medical conditions or cognitive or psychiatric impairments that would prevent beneficial utilization of services; 6. The primary problem is not psychiatric. It is a social, legal, or medical problem, without a concurrent major psychiatric episode meeting criteria for this level of care; or 7. The admission is being used as an alternative to placement within the juvenile justice or protective services system, or as an alternative to specialized schooling (which should be provided by the local school system) or as respite or housing.
Continued Stay Criteria	***All** of the following criteria are necessary for continuing treatment at this level of care:* 1. The child/adolescent's condition continues to meet admission criteria at this level of care; 2. The child/adolescent's treatment does not require a more intensive level of care, and no less intensive level of care would be appropriate; 3. Treatment planning is individualized and appropriate to the child/adolescent's age and changing condition, with realistic,

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Date Revised: 2/1/16

	specific, and attainable goals and objectives stated. Treatment planning includes family, support systems, social, educational, occupational, and interpersonal assessments. This process should actively involve family, guardian, and/or other support systems unless contraindicated. Expected benefit from all relevant treatment modalities is documented. The treatment plan has been updated and implemented with consideration of all applicable and appropriate treatment modalities; 4. All services and treatment are carefully structured to achieve optimum results in the most time-efficient manner possible consistent with sound clinical practice; 5. If treatment progress is not evident, then there is documentation of treatment plan adjustments to address the lack of progress; 6. Care is rendered in a clinically appropriate manner and focused on the child/adolescent's behavioral and functional outcomes; 7. An individualized discharge plan has been developed that includes specific realistic, objective, and measurable discharge criteria and plans for appropriate follow-up care. A timeline for expected implementation and completion is in place, but discharge criteria have not yet been met; 8. The child/adolescent is actively participating in treatment to the extent possible consistent with his/her condition, or there are active efforts being made that can reasonably be expected to lead to the child/adolescent's engagement in treatment, improve functionality and reduce acute psychiatric/behavioral symptoms; 9. Unless contraindicated, family, guardian, and/or natural supports are actively involved in the treatment as required by the treatment plan, or there are active efforts being made and documented to involve them; 10. When medically necessary, appropriate psychopharmacological intervention has been prescribed and/or evaluated; and 11. There is documented active coordination of care with other behavioral health providers, the PCC (primary care clinician), and other services and state agencies. If coordination is not successful, the reasons are documented and efforts to coordinate care continue.
Discharge Criteria	*The **following criteria** (1-2) are necessary for discharge from this level of care:* 1. The child/adolescent can be safely treated at an alternative level of care; and 2. An individualized discharge plan with appropriate, realistic, and timely follow-up care is in place. *One of the **following criteria** (3-8) is also necessary for discharge from this level of care:*

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	1. The child/adolescent no longer meets admission criteria or meets criteria for a less or more intensive level of care; 2. The child/adolescent's documented treatment plan goals and objectives have been substantially met, and/or a safe, continuing care program can be arranged and deployed at an alternate level of care; 3. The child/adolescent, parent, and/or legal guardian is competent but not engaged in treatment or is not following the program rules and regulations. The lack of engagement is of such a degree that treatment at this level of care becomes ineffective or unsafe, despite multiple, documented attempts to address engagement issues. In addition, it has been determined that the child/adolescent does not meet criteria for an inpatient level of care; 4. Consent for treatment is withdrawn, and it is determined that the child/adolescent or parent/guardian has the capacity to make an informed decision and does not meet criteria for an inpatient level of care; 5. The child/adolescent is not making progress toward treatment goals despite persistent efforts to engage him/her, and there is no reasonable expectation of progress at this level of care, nor is it required to maintain the current level of function; or 6. The child/adolescent's physical condition necessitates transfer to a medical facility.

Date Reviewed: 8/30/18
Date Revised: 2/1/16

Appendix D: MA DOI/DMH Definition – CBAT

Community-based acute treatment for children and adolescents (CBAT) – mental health services provided in a staff-secure setting on a 24-hour basis, with sufficient clinical staffing to ensure safety for the child or adolescent, while providing intensive therapeutic services including, but limited to daily medication monitoring; psychiatric assessment; nursing availability; specializing (as needed); individual, group and family therapy; case management; family assessment and consultation; discharge planning; and psychological testing, as needed. This service may be used as an alternative to or transition from inpatient services. Whenever a Carrier's Acute Residential (ART) program is substantially similar to CBAT, it may be considered to meet the requirements of this Bulletin.[xvii]

[xvii] Commonwealth of Massachusetts. Bulletin 2018-07. To: Commercial Health Insurers, Blue Cross and Blue Shield of Massachusetts, Inc. and Health Maintenance Organizations. From: Gary D. Anderson, commissioner of Insurance and Joan Mikula, Commissioner of Mental Health. Date: December 14, 2018. Re: Access to Services to Treat Child-Adolescent Mental Health Disorders. **https://www.mass.gov/files/documents/2018/12/14/BULLETIN%202018-07%20%28Child-Adolescent%29.pdf**.

Appendix E: MassHealth Diversionary Services – ICBAT

DIVERSIONARY SERVICES

Intensive Community-Based Acute Treatment (ICBAT) (Child/Adolescent)

Intensive Community-Based Acute Treatment (ICBAT) provides the same services as Community-Based Acute Treatment (CBAT) but of higher intensity, including more frequent psychiatric evaluation and medication management and a higher staff-to-patient ratio.

This is an addendum to Community-Based Acute Treatment (CBAT). All CBAT criteria for admission, exclusion, continued stay and discharge apply to this level of care as well as the specific criteria listed below

Criteria

Admission Criteria	*In addition to the criteria for CBAT level of care,* ***one*** *of the following criteria is necessary for admission to ICBAT level of care, and the Member must able to be safely contained in a staff-secure setting.* There is need for either daily psychiatry or a higher staff ratio due to: 1. Suicidal or homicidal ideation with plan; 2. Command hallucinations; 3. Persecutory delusions; 4. Fire-setting or sexually reactive behavior; or 5. Impairment to the degree that the Member manifests severe psychiatric symptoms which impact social and interpersonal functioning and is not responsive to less intensive treatment and/or management efforts.

Date Reviewed: 3/31/17
Date Revised: 3/31/17

Appendix F: DOI/DMH Definition – ICBAT

Intensive community-based treatment for children and adolescents (ICBAT) provides the same services as CBAT for children and adolescents but of higher intensity, including more frequent psychiatric and psychopharmacological evaluation and treatment and more intensive staffing and service delivery. ICBAT programs have the capability to admit children and adolescents with more acute symptoms than those admitted to CBAT. ICBAT programs are ability to tree children and adolescents with clinical presentations similar to those referred to inpatient mental health services but who are able to be cared for safely in an unlocked setting. Children and adolescents may be admitted to an ICBAT directly from the community as an alternative to inpatient hospitalization; ICBAT is not used as a step-down placement following discharge from a locked, 24-hour setting. Whenever a Carrier's ART program is substantially similar to ICBAT, it may be considered to meet the requirements of this Bulletin. [xviii]

[xviii] Commonwealth of Massachusetts. Bulletin 2018-07. To: Commercial Health Insurers, Blue Cross and Blue Shield of Massachusetts, Inc. and Health Maintenance Organizations. From: Gary D. Anderson, Commissioner of Insurance and Joan Mikula, Commissioner of Mental Health. Date: December 14, 2018. Re: Access to Services to Treat Child-Adolescent Mental Health Disorders. **https://www.mass.gov/files/documents/2018/12/14/BULLETIN%202018-07%20%28Child-Adolescent%29.pdf.**

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[48] Op. cit. DOI DMH Bulletin 2018-07.

[49] Op. cit. DOI DMH Bulletin 2018-07.

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[65] Op. cit. Pearlmutter M, Dwyer K, Burk L, et. al. Analysis of Emergency Department Length of Stay for Mental Health Patients at Ten Massachusetts Emergency Departments.

[66] Op. cit. Pearlmutter M, Dwyer K, Burk L, et. al. Analysis of Emergency Department Length of Stay for Mental Health Patients at Ten Massachusetts Emergency Departments.

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[69] Op. cit. Frank R and Garfield R. Managed Behavioral Health Care Carve-Outs: Past Performance and Future Prospects.

AN ACT FOR PREVENTION & ACCESS TO APPROPRIATE CARE & TREATMENT OF ADDICTION

COST REPORT

This report was prepared by Larry Hart; Valerie Hamilton, RN, MHA, JD; Andrea Clark, MS; and Jennifer Elwood, FSA, MAAA, FCA.

1.0 Executive Summary

Chapter 208 Section 105 (Section 105) requires the Center for Health Information and Analysis (CHIA) to review and evaluate the potential fiscal impact of four mandated health benefit proposals (MHBPs) pertaining to mental health services. These MHBPs are similar to mandated benefits found in Chapter 258 of the Acts of 2014[xix] limiting preauthorization and utilization review by insurance carriers (carriers) and shifting medical necessity determinations related to *substance use disorder services* to providers. Section 105's MHBPs provide nearly identical requirements pertaining to *mental health services* for four levels of care.

The MHBPs in Section 105 would require carriers to cover medically necessary mental health acute treatment (AT), as determined by the treating clinician in consultation with the patient, with pre-authorization or utilization review by the carrier prohibited. It also requires coverage of mental health crisis stabilization services (CSS), community-based acute treatment (CBAT), and intensive community-based acute treatment (ICBAT), and prohibits carriers from performing preauthorization and utilization review for specific periods. Section 105 charges CHIA with reviewing its MHBPs consistent with Massachusetts General Laws (MGL) c.3 §38C, requiring review of the potential impact of proposed mandated healthcare insurance benefits on the premiums paid by businesses and consumers. CHIA has engaged BerryDunn[xx] to provide an actuarial estimate of the effect enactment of the bill would have on the cost of health insurance in Massachusetts.

This report is not intended to determine whether the MHBPs of Section 105 would constitute health insurance benefit mandates for purposes of Commonwealth defrayal under the Affordable Care Act (ACA), nor is it intended to be the sole basis for the Commonwealth's estimates of defrayal if the requirements are determined to be health insurance benefit mandates requiring Commonwealth defrayal.

1.1 Current Insurance Coverage

BerryDunn surveyed 10 carriers in the Commonwealth, with 9 responding. All of the responding carriers currently cover medically necessary AT, CSS, CBAT, and ICBAT services for the treatment of mental health disorders without exclusions or benefit caps; however, at the time of the study, the majority of the commercial carriers did not have specific procedure or revenue codes applicable to these services. All of the responding carriers reported they perform utilization management, which would be restricted as noted above under the MHBPs should they become law.

Carriers offering fully insured health plans in the Commonwealth are mandated to include coverage for medically necessary behavioral health treatment according to the requirements of M.G.L. c. 175 §47B; M.G.L. c. 176A §8A; M.G.L. c. 176B §4A; and M.G.L. c. 176G §4M. In addition, mental health services, including behavioral health treatment, are considered one of the 10 essential health benefits (EHBs) under the federal ACA. Benefits are defined for the Commonwealth according to its benchmark health plan[1] (the Blue Cross Blue Shield HMO Blue® plan), which

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[xix] Chapter 258 of the Acts of 2014. An Act to Increase Opportunities for Long-Term Substance Abuse Recovery: https://malegislature.gov/Laws/SessionLaws/Acts/2014/Chapter258.

[xx] Formerly Compass Health Analytics, Inc.

covers medically necessary services[xxi] to diagnose and/or treat mental health conditions. The plan covers inpatient services, intermediate treatments, and outpatient services.[2]

In a bulletin on December 14, 2018, the Massachusetts Division of Insurance (DOI) and Department of Mental Health (DMH)xxii clarified the child and adolescent mental health services that must be covered by carriers under state law; CBAT and ICBAT were included.

Furthermore, under the federal Mental Health Parity and Addiction Equity Act of 2008 (MPHAEA), group health plans and health insurance issuers that offer fully insured mental health benefits or substance use disorder benefits may not impose less favorable benefit limitations on those benefits than on medical/surgical benefits.

Section 105 defines four levels of mental health services and places carrier preauthorization and utilization review restrictions on each. The defined services are currently offered by Commonwealth carriers but are not consistently labeled or defined. If the MHBPs were to become law, carriers would be required to have clear definitions, consistent with Section 105, for the four levels of service. BerryDunn clarified with the sponsor that the definitions of CBAT and ICBAT in Section 105 are intended to be consistent with MassHealthxxiii definitions.[xxiv] Furthermore, Section 105 specifically provides that "mental health CSS" are intended to be defined consistently with MassHealth's definition.[xxv]

1.2 Analysis

BerryDunn estimated the impact of Section 105 on fully insured health benefit plan premiums by assessing the incremental increases in utilized bed capacity and resulting carrier medical expense related to transferring to the providers, either fully or partially, the ability to both define and determine the medical necessity for patient treatment. The incremental increases in service costs pertain to four subsets of individuals for purposes of this analysis:

- Adults(ages 21-64) who would be admitted to existing and currently planned capacity, in the absence of Section 105
- Adults admitted incrementally, owing to the expanded provider capacity related to the presence of the MHBPs in Section 105

[xxi] Under M.G.L. c. 1760, Section 16(b), "A carrier may develop guidelines to be used in applying the standard of medical necessity…Any such medical necessity guidelines utilized by a carrier in making coverage determinations shall be: (i) developed with input from practicing physicians and participating providers in the carrier's or utilization review organization's service area; (ii) developed under the standards adopted by national accreditation organizations; (iii) updated at least biennially or more often as new treatments, applications and technologies are adopted as generally accepted professional medical practice; and (iv) evidence-based, if practicable. In applying such guidelines, a carrier shall consider the individual health care needs of the insured…"

[xxii] Commonwealth of Massachusetts. Bulletin 2018-07. To: Commercial Health Insurers, Blue Cross and Blue Shield of Massachusetts, Inc. and Health Maintenance Organizations. From: Gary D. Anderson, Commissioner of Insurance and Joan Mikula, Commissioner of Mental Health. Date: December 14, 2018. Re: Access to Services to Treat Child-Adolescent Mental Health Disorders. **https://www.mass.gov/files/documents/2018/12/14/BULLETIN%202018-07%20%28Child-Adolescent%29.pdf**.

[xxiii] "In Massachusetts, Medicaid and the Children's Health Insurance Program (CHIP) are combined into one program called MassHealth." https://www.mass.gov/topics/masshealth.

[xxiv] CBAT: **https://www.masspartnership.com/pdf/MNC-CBAT.pdf.** ICBAT: **https://www.masspartnership.com/pdf/MNC-ICBAT.pdf**.

[xxv] Diversionary Services Community Crisis Stabilization: **https://www.masspartnership.com/pdf/MNC-CCS.pdf**.

- Children/adolescents (ages 0-20) who would be admitted to existing and currently planned capacity, in the absence of Section 105
- Children/adolescents admitted incrementally, owing to the expanded provider capacity related to the presence of the MHBPs in Section 105

The incremental cost for each of these components is estimated drawing upon claims data from the Massachusetts All Payer Claims Database (APCD). Separately for adults and children, BerryDunn used the APCD to measure the historical paid claims cost and calculated the average length of stay (ALOS) and average cost per day for each service. The incremental cost of the mandate is based on new bed capacity beyond that currently planned, stemming from two sources of increased utilization pressure: (i) the additional number of days resulting from longer lengths of stay for patients who would be admitted in the currently planned provider capacity (in the absence of Section 105), and (ii) the total additional bed days for anticipated admissions that would not have occurred in the absence of the Section 105 MHBPs. BerryDunn multiplied the total increase in days stemming from new bed capacity established to accommodate both sources of utilization pressure by the average cost per day to determine the incremental cost of the MHBPs.

BerryDunn aggregated these components and projected them forward over the next five years (2020 – 2024) for the fully insured Commonwealth population, using an effective date of January 1, 2020. BerryDunn added carrier retention (administrative cost and profit) to arrive at an estimate of the bill's effect on premiums. Note the estimates assume carriers will fully comply with the provisions of the bill if it becomes law.

1.3 Summary Results

Table ES-1, on the following page, summarizes the estimated effect of Section 105 on premiums for fully insured plans over five years. This analysis estimates that the bill, if enacted, would increase fully insured premiums by as much as 0.2% on average over the next five years; a more likely increase is in the range of 0.1%, equivalent to an average annual expenditure of $14.5 million over the period 2020 – 2024.

The impact on premiums is driven by the provisions of Section 105 that limit the carrier's ability to perform preauthorization and utilization review. The impact of the bill on any one individual, employer group, or carrier may vary from the overall results, depending on the current level of benefits each receives or provides, and on how those benefits would change under the proposed language of the bill.

Table ES-1: Summary Results

	2020	2021	2022	2023	2024	WEIGHTED AVERAGE	FIVE-YEAR TOTAL
Members (000s)	2,144	2,137	2,130	2,123	2,115		
Medical Expense Low ($000s)	$5,406	$8,604	$8,991	$9,394	$9,813	$8,959	$42,208
Medical Expense Mid ($000s)	$7,301	$12,147	$12,692	$13,262	$13,853	$12,578	$59,254
Medical Expense High ($000s)	$10,746	$22,699	$23,719	$24,783	$25,887	$22,889	$107,835
Premium Low ($000s)	$6,247	$9,943	$10,390	$10,856	$11,340	$10,354	$48,777
Premium Mid ($000s)	$8,438	$14,037	$14,668	$15,326	$16,009	$14,535	$68,477
Premium High ($000s)	$12,419	$26,232	$27,410	$28,640	$29,916	$26,452	$124,618
Per Member Per Month (PMPM) Low	$0.34	$0.39	$0.41	$0.43	$0.45	$0.41	$0.41
PMPM Mid	$0.46	$0.55	$0.57	$0.60	$0.63	$0.57	$0.57
PMPM High	$0.68	$1.02	$1.07	$1.12	$1.18	$1.04	$1.04
Estimated Monthly Premium	$516	$531	$547	$563	$580	$548	$548
Premium % Rise Low	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Premium % Rise Mid	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Premium % Rise High	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%

Executive Summary Endnotes

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[1] Centers for Medicare & Medicaid Services (CMS), Center for Consumer Information and Insurance Oversight, Information on Essential Health Benefits (EHBs) Benchmark Plans. Accessed 11 July 2018: **https://www.cms.gov/cciio/resources/data-resources/ehb.html**.

[2] Schedule of Benefits: HMO Blue® New England. $2,000 Deductible Plan Option. Accessed 6 June 2019: **https://www.mass.gov/files/documents/2016/11/nq/ehbbp-hmoblue-2017.pdf**

2.0 Introduction

Chapter 208 of the Acts of 20181 was signed by Governor Charlie Baker on August 9, 2018, enacting House Bill 3947. Section 105 of the law requires the Center for Health Information and Analysis (CHIA) to review and evaluate the potential fiscal impact of four mandated health benefit proposals (MHBPs), consistent with its responsibilities under section 38C of chapter 3[2] of the Massachusetts General Laws.

This report is not intended to determine whether the MHBPs of Section 105 would constitute health insurance benefit mandates for purposes of Commonwealth defrayal under the Affordable Care Act (ACA), nor is it intended to be the sole basis for the Commonwealth's estimates of defrayal if the requirements are determined to be health insurance benefit mandates requiring Commonwealth defrayal.

The Section 105 MHBPs require carriers to cover:

- Medically necessary mental health acute treatment (AT) that does not require preauthorization prior to obtaining treatment; [xxvi] provided, however, that medical necessity shall be determined by the treating clinician in consultation with the patient and noted in the patient's medical record
- Medically necessary mental health crisis stabilization services (CSS) for not more than 14 days that do not require preauthorization prior to obtaining such services; provided, however, that a facility shall provide the carrier with both notification of admission and the initial treatment plan within 48 hours of admission; provided further, that utilization review procedures may be initiated on day seven, and medical necessity shall be determined by the treating clinician in consultation with the patient and noted in the patient's medical record
- Medically necessary community-based acute treatment (CBAT) for not more than 21 days; provided, however, that a facility shall provide the carrier both notification of admission and the initial treatment plan within 48 hours of admission; provided further, that utilization review procedures may be initiated on day ten; and provided further, that medical necessity shall be determined by the treating clinician in consultation with the patient and noted in the patient's medical record
- Medically necessary intensive community-based acute treatment (ICBAT) services for not more than 14 days; provided, however, that a facility shall provide the carrier with both notification of admission and the initial treatment plan within 48 hours of admission, provided further, that utilization review procedures may be initiated on day seven; and provided further, that medical necessity shall be determined by the treating clinician in consultation with the patient and noted in the patient's medical record

This analysis assumes an effective date of January 1, 2020.[xxvii] Section 3.0 of this analysis outlines the provisions and interpretations of the MHBP. Section 4.0 summarizes the methodology used for the estimate. Section 5.0

[xxvi] BerryDunn submitted an inquiry to the sponsoring legislators and staff and verified that timeframes limiting preauthorization and utilization review were intentionally omitted, and therefore, preauthorization and utilization review are not permitted by carriers for the duration of AT.

[xxvii] Chapter 208 requires an analysis of the financial impact of the mandated benefit proposals. It does not require that the mandated benefit proposals be implemented.

discusses important considerations in translating the MHBP language into estimates of its incremental impact on healthcare costs and steps through the calculations. Section 6.0 summarizes the results.

3.0 Interpretation of Section 105

Carriers offering fully insured health plans in the Commonwealth are mandated to include coverage for medically necessary behavioral health treatment according the requirements of M.G.L. c. 175 Section 47B; M.G.L. c. 176A Section 8A; M.G.L. c. 176B Section 4A; and M.G.L. c. 176G Section 4M. In addition, mental health services, including behavioral health treatment, are considered one of the 10 EHBs under the federal ACA. Benefits are defined for the Commonwealth according to its benchmark health plan[3] (the Blue Cross Blue Shield HMO Blue® plan), which covers medically necessary servicesxxviii to diagnose and/or treat mental conditions. The plan covers inpatient services, intermediate treatments, and outpatient services.[4]

In a bulletin on December 14, 2018, the Massachusetts Division of Insurance (DOI) and Department of Mental Health (DMH)[xxix] clarified which services are to be available to treat the behavioral health needs of children and adolescents under state law. CBAT and ICBAT were included, and the definitions provided are in alignment with those of MassHealth.[xxx] Coverage becoming effective on or after July 1, 2020 is required to include these services and carriers must have established systems for members to access through managed care systems.

Furthermore, under the federal Mental Health Parity and Addiction Equity Act of 2008 (MPHAEA), group health plans and health insurance issuers that offer fully insured mental health benefits or substance use disorder benefits may not impose less-favorable benefit limitations on those benefits than on medical/surgical benefits.

Section 105 defines four levels of mental health services and places carrier preauthorization and utilization review restrictions on each. The defined services are currently offered by Commonwealth carriers but are not consistently labeled or defined. If the MHBPs were to become law, carriers would be required to have clear definitions, consistent with Section 105, for the four levels of service. BerryDunn clarified with the sponsor that Section 105's definitions of CBAT and ICBAT are intended to be consistent with MassHealth definitions.[xxxi] Section 105 specifically provides that "mental health CSS" are intended to be defined consistently with MassHealth's definition.[xxxii]

[xxviii] Under M.G.L. c. 1760, Section 16(b), "A carrier may develop guidelines to be used in applying the standard of medical necessity…Any such medical necessity guidelines utilized by a carrier in making coverage determinations shall be: (i) developed with input from practicing physicians and participating providers in the carrier's or utilization review organization's service area; (ii) developed under the standards adopted by national accreditation organizations; (iii) updated at least biennially or more often as new treatments, applications and technologies are adopted as generally accepted professional medical practice; and (iv) evidence-based, if practicable. In applying such guidelines, a carrier shall consider the individual health care needs of the insured…"

[xxix] Commonwealth of Massachusetts. Bulletin 2018-07. To: Commercial Health Insurers, Blue Cross and Blue Shield of Massachusetts, Inc. and Health Maintenance Organizations. From: Gary D. Anderson, Commissioner of Insurance and Joan Mikula, Commissioner of Mental Health. Date: December 14, 2018. Re: Access to Services to Treat Child-Adolescent Mental Health Disorders. **https://www.mass.gov/files/documents/2018/12/14/BULLETIN%202018-07%20%28Child-Adolescent%29.pdf.**

[xxx] "In Massachusetts, Medicaid and the Children's Health Insurance Program (CHIP) are combined into one program called MassHealth." https://www.mass.gov/topics/masshealth.

[xxxi] CBAT: **https://www.masspartnership.com/pdf/MNC-CBAT.pdf.** ICBAT: **https://www.masspartnership.com/pdf/MNC-ICBAT.pdf**.

[xxxii] Diversionary Services Community Crisis Stabilization: **https://www.masspartnership.com/pdf/MNC-CCS.pdf**.

3.1 Plans Affected by the MHBPs

Section 105 amends statutes that regulate healthcare carriers in the Commonwealth. It includes the following sections, each of which addresses statutes dealing with a particular type of health insurance policy when issued or renewed in the Commonwealth:

- **Section 1: Chapter 32A –** Plans Operated by the Group Insurance Commission (GIC) for the Benefit of Public Employees
- **Section 2: Chapter 175 –** Commercial Health Insurance Company Plans
- **Section 3: Chapter 176A –** Hospital Service Corporation (Blue Cross) Plans
- **Section 4: Chapter 176B –** Medical Service Corporation (Blue Shield) Plans
- **Section 5: Chapter 176G –** Health Maintenance Organization (HMO) Plans

Self-insured plans, except for those managed by the GIC, are not subject to state-level health insurance benefit mandates. State mandates do not apply to Medicare or Medicare Advantage plans, the benefits of which are qualified by Medicare; this analysis excludes members over 64 years of age who have fully insured commercial plans, and this analysis does not address any potential effect on Medicare supplement plans, even to the extent they are regulated by state law. This analysis does not apply to MassHealth.

3.2 Covered Services

BerryDunn surveyed 10 carriers in the Commonwealth, and 9 responded. All of the responding carriers currently cover medically necessary AT, CSS, CBAT, and ICBAT services or their equivalents for the treatment of mental health disorders without exclusions or benefit caps. All of the responding carriers indicated that they perform utilization management, which would change under the Section 105 MHBPs.

3.3 Existing Laws Affecting the Cost of Section 105

State and federal law, as well as the Massachusetts DOI's interpretation of state law, require carriers to cover the four levels of mental health services provided for in Section 105.

M.G.L. c. 176O, Section 16(b) provides that a "carrier shall be required to pay for health care services ordered by a treating physician or a primary care provider if: (1) the services are a covered benefit under the fully insured's health benefit plan, and (2) the services are medically necessary. A carrier may develop guidelines to be used in applying the standard of medical necessity…Any such medical necessity guidelines utilized by a carrier in making coverage determinations shall be: (i) developed with input from practicing physicians and participating providers in the carrier's or utilization review organization's service area; (ii) developed under the standards adopted by national accreditation organizations; (iii) updated at least biennially or more often as new treatments, applications and technologies are adopted as generally accepted professional medical practice; and (iv) evidence-based, if practicable. In applying such guidelines, a carrier shall consider the individual health care needs of the fully insured…" Section 105 shifts the determination of medical necessity to the behavioral health provider.

4.0 Methodology

4.1 Overview

BerryDunn estimated the impact of Section 105 on insurance premiums by assessing the incremental increases in utilized bed capacity and resulting carrier medical expense related to transferring to the providers, either fully or partially, the ability to both define and determine the medical necessity for patient treatment. The incremental increases in service costs pertain to four subsets of individuals for purposes of this analysis:

- Adults(ages 21-64) who would be admitted to existing and currently planned capacity, in the absence of Section 105
- Adults admitted incrementally, owing to the expanded provider capacity related to the presence of the MHBPs in Section 105
- Children/adolescents(ages 0-20) who would be admitted to existing and currently planned capacity, in the absence of Section 105
- Children/adolescents admitted incrementally, owing to the expanded provider capacity related to the presence of the MHBPs in Section 105

The incremental cost for each of these components is estimated using claims data from the Massachusetts APCD. Separately for adults and children, BerryDunn used the APCD to measure the historical paid claims cost and calculated the average length of stay (ALOS) and average cost per day for each service. The incremental cost of the mandate is based on new bed capacity beyond that currently planned, stemming from two sources of increased utilization pressure: (i) the additional number of days resulting from longer lengths of stay for patients who would be admitted in the currently planned provider capacity (in the absence of Section 105), and (ii) the total additional bed days for anticipated admissions that would not have occurred in the absence of the Section 105 MHBPs. BerryDunn multiplied the total increase in days stemming from new bed capacity established to accommodate both sources of utilization pressure by the average cost per day to determine the incremental cost of the MHBPs.

Combining the components, and accounting for carrier retention, results in a baseline estimate of Section 105's incremental effect on premiums, which is projected over the five years following the assumed January 1, 2020 implementation date of the proposed law.

4.2 Data Sources

The primary data sources used in the analysis are:

- Information about the intended effect of the bill, gathered from sponsors
- Information, including descriptions of current coverage, from responses to a survey of commercial health carriers in the Commonwealth
- The Massachusetts APCD
- Academic literature, published reports, and population data, cited as appropriate
- Information gathered through interviews and e-mail exchanges with Commonwealth mental health providers
- Information provided by DMH about bed capacity projections

4.3 Steps in the Analysis

To implement the analysis, BerryDunn performed the steps summarized in this section.

1. **Estimated marginal costs to carriers, due to increase in ALOS for adults, of moving the determination of medical necessity from the carriers to the providers**

   To estimate the impact of moving the determination of medical necessity from the carriers to the providers, BerryDunn:

   A. Using claims data from the APCD, measured the total paid claims cost, the number of days, and the number of admissions for mental health treatment for commercially fully insured patients

   B. Divided the total paid claims cost by the total number of days and calculated the cost per day

   C. Divided the total number of days by the total number of admissions and calculated the ALOS

   D. Based on publically available literature, relevant experience from Chapter 258, input from carriers, and input from providers, estimated the increase in the ALOS

   E. Multiplied the estimated increase in the ALOS by the total number of admissions and calculated the additional number of days due to the MHBPs

   F. Multiplied the additional number of days by the cost per day to determine the incremental cost

   G. Divided the incremental cost from Step F above by corresponding member months to calculate incremental PMPM cost

2. **Estimated marginal costs to carriers, due to increase in admissions for adults, of moving the determination of medical necessity from the carriers to the providers**

   To estimate the impact of moving the determination of medical necessity from the carriers to the additional providers, BerryDunn:

   A. Based on information from providers and analysis of the impact of Chapter 258 on SUD service use, estimated the additional mental health bed capacity available for services covered by fully insured health plans as a result of capacity expansions that would occur as a result of the provisions of Section 105

   B. Estimated the number of new admissions for fully insured health plans due to the expanded capacity that would occur as a result of the provisions of Section 105

   C. Based on publically available literature, relevant experience from Chapter 258, input from carriers, and input from providers, estimated the increase in the ALOS and the total length of stay for the additional capacity of new providers entering the market as a result of Section 105

   D. Multiplied the ALOS by the total number of admissions and calculated the additional number of days covered by health plans due to the MHBPs

   E. Multiplied the additional number of days by the cost per day to determine the incremental cost

   F. Divided the incremental cost from Step E above by corresponding member months to calculate incremental PMPM cost

3. **Estimated marginal costs to carriers, due to increase in ALOS for children, of moving the determination of medical necessity from the carriers to the providers**

   To estimate the impact of moving the determination of medical necessity from the carriers to the providers, BerryDunn:

   A. Using the APCD, measured the total paid claims cost, the number of days, and the number of admissions for mental health treatment for commercially fully insured patients
   B. Divided the total paid claims cost by the total number of days and calculated the cost per day
   C. Divided the total number of days by the total number of admissions and calculated the ALOS
   D. Based on publically available literature, other relevant experience, input from carriers, and input from providers, estimated the increase in the ALOS
   E. Multiplied the estimated increase in the ALOS by the total number of admissions and calculated the additional number of days due to the MHBP
   F. Multiplied the additional number of days by the cost per day to determine the incremental cost
   G. Divided the incremental cost from Step F above by corresponding member months to calculate incremental PMPM cost

4. **Estimated marginal costs to carriers, due to an increase in admissions for children, of moving the determination of medical necessity from the carriers to the providers**

   To estimate the impact of moving the determination of medical necessity from the carriers to the additional providers, BerryDunn:

   A. Based on information from providers and analysis of the impact of Chapter 258 on SUD service use, estimated the additional mental health bed capacity available for services covered by fully insured health plans as a result of capacity expansions that would occur as a result of the provisions of Section 105
   B. Estimated the number of new admissions for fully insured health plans due to the expanded capacity expansions that would occur as a result of the provisions of Section 105
   C. Based on publically available literature, other relevant experience, input from carriers, and input from providers, estimated the increase in the ALOS and the total length of stay for the new providers entering the market as a result of Section 105
   D. Multiplied the estimated ALOS by the total number of admissions and calculated the additional number of days due to the MHBP
   E. Multiplied the additional number of days by the cost per day to determine the incremental cost
   F. Divided the incremental cost from Step E above by corresponding member months to calculate incremental PMPM cost

5. **Calculated the impact of the combined projected claim costs on insurance premiums**

   To add the other components of health insurance premiums to the estimated claims costs, BerryDunn:

   A. Summed the estimated incremental PMPM costs for adults and children

B. Estimated the fully insured Commonwealth population under age 65, projected for the next five years (2020 – 2024)

C. Multiplied the estimated aggregate incremental PMPM cost of the mandate by the projected population estimate to calculate the total estimated marginal claims cost of Section 105

D. Estimated carrier retention (administrative costs, taxes, and profit) and applied the estimate to the final incremental claims cost calculated in Step C

4.4 Limitations

This analysis includes assumptions that reflect considerable uncertainty, given the available data and the lack of recent literature on the effects of changing a carrier's ability to perform utilization management.

A key source of uncertainty is the response by providers to the changes in medical necessity requirements, which are different for each of the four service categories defined in Section 105. Under Section 105, medical necessity is determined by the treating provider/clinician in consultation with the patient with no permitted preauthorization or utilization review by the carrier for AT services. Carrier utilization review is allowed for CSS, CBAT, and ICBAT after specified periods. Given the different treatment of the carriers' ability to perform utilization review by MHBP, data at the service level are important to be able to estimate the impact of Section 105. Although carriers currently cover AT, CSS, CBAT, and ICBAT services, at the time the data available for this study were generated, the majority of the commercial carriers did not have specific procedure or revenue codes applicable to these services, but rather covered the services more generally. BerryDunn worked with the carriers to supplement the data in the APCD in order to obtain the data at the specific MHBP service level, but was unsuccessful in developing a clean dataset with each of the four services clearly defined. However, using the carrier-supplied supplemental data, BerryDunn could approximate the distribution between AT and residential services. This distribution was used to aggregate assumptions developed for each of the services subject to Section 105.

An additional area of significant uncertainty is the amount of additional bed capacity that would be added in response to Section 105's provisions. The potential changes in utilization stemming from medical necessity provisions will rely in part on how capacity changes. In Massachusetts, DMH grants each license for mental health AT facilities with a specific bed capacity limit, and must approve amendment of the licensed capacity for any expansion beyond that level. The existing system is often at or beyond capacity, with patients temporarily boarded in emergency rooms. DMH provided to BerryDunn the number of additional beds that have been requested by providers to be opened during 2019-2021. BerryDunn assumed that these requests would be approved, and that the proportion of that bed capacity to be covered by fully insured health plans would be consistent with historical patterns. Although BerryDunn's analysis assumes that the planned capacity will not fully resolve capacity issues, it is unclear if the additional beds will create excess capacity. In addition, if Section 105 is enacted, new providers not currently operating in Massachusetts will likely make bed expansion requests. The number of these additional bed requests is uncertain. New for-profit SUD providers added bed capacity after the enactment of Chapter 258. BerryDunn estimated the additional mental health beds due to the enactment of Section 105 based in part on relevant experience from Chapter 258. BerryDunn used this assumption in the high scenario, which is likely conservative, because the opioid epidemic created significant additional demand for residential SUD treatment, attracting new providers.

The impact Section 105 would have on ED boarding is uncertain. More challenging mental health patients prone to violent behavior are more often boarded in the ED. These patients end up with admissions, but often must wait for an appropriate bed to become available. The high-end scenario in this analysis would take into account the impact of any reduction in ED boarding (as capacity increases).

The experience of Chapter 258, which pertains to substance use treatment services, has similar medical necessity provisions, so it is worth considering whether the implementation experience is a useful source of information about the likely effects of Section 105. After the implementation of Chapter 258, a large substance abuse disorder services provider entered the Commonwealth, significantly increasing bed capacity with a higher ALOS and cost per day than those of other providers. The number of admissions increased during that period; however, underlying increases in opioid-related deaths during that period suggest that much of the increase in admissions was attributable to the growing opioid crisis occurring during the implementation of Chapter 258. (Prior to the implementation of Chapter 258, admissions had already been significantly increasing.) The surge in opioid use and consequent need for service capacity may not provide a useful parallel for what to expect for mental health services. It is true that currently, for-profit providers are entering the mental health inpatient and residential space. It is unclear how much additional provider capacity would open in the Commonwealth if Section 105 became law, how these providers' costs per day may differ from existing providers, and how their bed capacity may differ between adults and children.

There is also uncertainty regarding how the ALOS will change in the presence of Section 105. In general, literature on this subject is limited to the historical period when behavioral health managed care controls first went into effect (early 1990s), a time when the inpatient mental health ALOS was much higher than it is today. Experience from Chapter 258 provides evidence to suggest the ALOS would increase under Section 105 but providers would not treat the pre-defined number of days before utilization review as a minimum.[xxxiii] However, the ALOS for mental health services is longer than for substance abuse services. Given this difference, it is uncertain how the changes in ALOS under Chapter 258 would translate to a change in ALOS for the mental health services under Section 105.

There is uncertainty about how carriers might modify their provider contracts in response to Section 105. Currently carriers pay providers on a cost per day, or "per diem," basis. Section 105 will increase the ALOS, and carriers may seek to contract with providers using a Diagnosis Related Group (DRG). A DRG payment is a contracted rate for an entire residential admission for a given diagnosis. Carriers may seek to set DRG payments to providers such that providers would be incentivized to limit ALOS. This contracting approach would offset some of the cost impact of having limited or no utilization management on mental health services. It would take some time for carriers to put new DRG contracts in place. BerryDunn did not assume any impact of DRG contracting, which could mean that results are conservative in the later years of the projection period.

For AT, Section 105 fully removes the carriers' ability to perform utilization review and management. Given that the current reimbursement structure—generally a per diem—does not incent providers to limit services, it is uncertain to what degree providers' medical necessity determinations would increase admissions. The approach taken in this

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[xxxiii] To better understand the impact of limiting a carrier's ability to perform utilization review prior to 14 days, BerryDunn reviewed the SUD ATS ALOS distribution. Prior to enactment of Chapter 258, the vast majority of the ATS admissions were at or below 8 days, which was the 90th percentile of the length of stay distribution. After implementation of Chapter 258, the ALOS increased, and the 90th percentile increased to about 10 days. As anticipated, the ALOS increased, but the majority of the admissions still had an ALOS well below 14 days, demonstrating that without prior authorization the ALOS did not move to the 14 day limit.

analysis is to produce a range of scenarios, and the degree to which this is assumed to occur ranges from modest to significantly material.

BerryDunn considered using uncovered days in the APCD as a way to estimate the impact of Section 105, including additional admissions and the increase to the ALOS. However, this field was not reliable in the APCD, so BerryDunn was not able to utilize uncovered days

Finally, it is important to note that given any assumed level of increased demand, the estimated cost of Section 105 hinges on the increase in the number of mental health bed days available in the system. The analysis that follows utilizes estimated increases in the ALOS and the number of admissions. Both assumptions will increase the number of mental health bed days if capacity is available. Given the uncertainties discussed above, it is difficult to estimate with any precision what proportion of the increase in mental health bed days will be due to increased admissions versus increased ALOS. However, in aggregate, the assumptions used should allow for reasonable ranges for the increased number of bed days and the relative cost of Section 105, compared to current cost levels.

Detailed descriptions of the estimation process in the next sections further address these uncertainties.

5.0 Analysis

This section describes in more detail the calculations outlined in the previous section. The analysis includes development of a best estimate middle-cost scenario, as well as a low-cost scenario using assumptions that produced a lower estimate, and a high-cost scenario using more conservative assumptions that produced a higher estimated cost impact.

As discussed in Section 4.4, the majority of commercial carriers do not have specific procedure or revenue codes applicable to these specific services and so could not divide the claims into the four service categories. BerryDunn was able to estimate a distribution between AT and residential services, as detailed in the following sections.

Section 5.1 describes the steps used to calculate the impact of moving the determination of medical necessity for adults from the carriers to the providers, assuming admission levels that would be seen in the absence of Section 105. Section 5.2 describes the steps used to calculate the impact of moving the determination of medical necessity for adults from the carriers to the providers, assuming increased admissions in the presence of Section 105. Section 5.3 describes the impact of moving the determination of medical necessity for children from the carriers to the providers, assuming admission levels that would be seen in the absence of Section 105. Section 5.4 describes the steps used to calculate the impact of moving the determination of medical necessity for children from the carriers to the providers, assuming increased admissions in the presence of Section 105. Section 5.5 aggregates the incremental PMPM costs. Section 5.6 projects the fully insured population age 0 – 64 in the Commonwealth over the 2020 – 2024 analysis period. Section 5.7 calculates the total estimated marginal cost of Section 105, and Section 5.8 adjusts these projections for carrier retention to arrive at an estimate of the bill's effect on premiums for fully insured plans.

5.1 Moving the Determination of Medical Necessity for Adults from Carriers to Providers – ALOS Impact on Required Bed Capacity for Pre-Section 105 MBHP Admission Projections

BerryDunn estimated the impact of moving the determination of medical necessity, either fully or partially, from the carriers to the providers on admissions that would be occurring even in the absence of the Section 105 MHBPs.

Length-of-stay increases in a system at capacity will only increase cost if capacity increases. In this section BerryDunn calculates the first incremental cost component by determining what the Section 105-induced increase in ALOS would likely be for the admissions that would be occurring under the current law if capacity were available, and then estimates the cost of meeting the additional bed days generated with that new capacity. In the next section, BerryDunn estimates the impact of additional admissions that Section 105 may induce.

BerryDunn developed a historical service profile using the 2017 Massachusetts APCD and calculated paid claim amounts, the number of admissions, and the number of days for services (AT and CSS) for adults. BerryDunn divided the paid claim cost by the number of days and measured the average cost per day for commercially fully insured adults. Results are displayed in Table 1.

Table 1: Estimated Cost per Day for Adult Mental Health Service

PAID CLAIMS COST	NUMBER OF DAYS	COST PER DAY
$35,118,372	36,147	$972

Next, BerryDunn used the APCD to measure the total number of days and the number of admissions for these services for adults. BerryDunn divided the total number of days by the number of admissions and calculated the ALOS. Results are displayed in Table 2.

Table 2: Estimated ALOS

NUMBER OF DAYS	NUMBER OF ADMISSIONS	ALOS
36,147	3,982	9.1

Section 105 either fully or partially transfers the ability to define and determine the medical necessity for patients' mental health treatment from the carrier to the provider. Based on input from Massachusetts providers, although patients who need inpatient treatment are eventually able to receive it, there is a need for additional bed capacity, particularly for patients who need services that are more intense. The additional need for beds is evidenced by patients who present to an Emergency Department (ED) for mental health crisis treatment facing long wait times prior to admission. When patients wait in the ED for 12 or more hours, it is referred to as boarding. While boarding affects patients with a wide variety of diagnoses, those with mental illness diagnoses are disproportionately affected, waiting on average more than three times as long for an inpatient bed than medical/surgical patients do. From 2011 to 2015, the number of patients in the Commonwealth seeking care for behavioral health conditions increased 13%, and the proportion of patients who boarded in the ED grew from 17.4% in 2011 to 22.8% in 2015.[5]

Assessing the impact of the restriction on a carrier's ability to perform utilization management requires estimating how much utilization will increase without managed care controls. Transferring the determination of medical necessity from the carriers to the providers will have the effect of increasing utilization or increasing the number of approved bed days. Literature on this subject is limited to the historical period when managed care controls first went into effect. At that time, a study conducted by Frank Brookmeyer reviewed the data and literature and studied the impact of managed care on hospital care for depression. His study indicated preauthorizations were effective in reducing utilization. Preauthorization reduced the ALOS by just under 20%,[6] with this results meeting accepted standards of statistical significance.[7] These reductions are higher than would be applicable for all mental health services, because the study only addressed depression, which is more amenable to ALOS reduction than other mental health issues, such as schizophrenia. In addition, the ALOS was much longer during the 1988 – 1989 study period. For these reasons, the ALOS impact from the Brookmeyer study is conservative as it relates to the impact of Section 105.

BerryDunn also studied the impact to the ALOS under Chapter 258, which made similar changes by partially transferring the determination of medical necessity from the carrier to the provider for Substance Use Disorder (SUD) treatment. After Chapter 258 passed, new providers expanded bed capacity in the Commonwealth. Based on APCD data, these providers had both a higher cost per day and a higher ALOS. Since the impact of new provider entrants driving increased admissions is considered in Section 5.2, BerryDunn removed these providers from the data prior to calculating the ALOS. Excluding the new providers, the ALOS increased by approximately 0.8 days, or 15.4%. Mental health services have longer ALOS than the SUD services that fell under Chapter 258, so BerryDunn used both the incremental increase in days and the percentage increase in days to estimate a range for the impact of Section 105. The low-cost scenario assumes an increase of 0.8 days, resulting in an 8.8% increase in the ALOS. The high-cost scenario assumes a 15.4% increase in the ALOS, resulting in an increase of 1.4 days.[xxxiv] BerryDunn interviewed mental health providers from the Commonwealth that indicated they anticipated that a patient's length of stay would increase by approximately a day. The mid-range scenario therefore assumes that the ALOS will increase 12.1%, or 1.1 days. Table 3 displays the assumed increase in the ALOS.

Table 3: Estimated Increase in ALOS

	CURRENT ALOS	% INCREASE	NUMBER OF ADDITIONAL DAYS
Low Scenario	9.1	8.8%	0.8
Mid Scenario	9.1	12.1%	1.1
High Scenario	9.1	15.4%	1.4

[xxxiv] The increase under Chapter 258 was 15.3%. BerryDunn multiplied 15.3% by the 9.1 ALOS and calculated an increase of 1.392 days. BerryDunn used 1.4 days, which is a 15.4% increase in the ALOS.

An additional area of significant uncertainty is the amount of additional bed capacity that would be added in response to Section 105's provisions. The potential changes in utilization stemming from medical necessity provisions will rely in part on how capacity changes. In Massachusetts, DMH grants each license for mental health AT facilities with a specific bed capacity limit, and must approve amendment of the licensed capacity for any expansion beyond that level. The existing system is often at or beyond capacity or is not able to meet demand. This is in part because many hospitals are not able to fully staff and cannot optimize licensed capacity. As a result patients are temporarily boarded in emergency rooms or diverted to CBAT or ICBAT despite having an acuity level appropriate for AT. DMH provided to BerryDunn the number of additional beds that have been requested by providers to be opened during 2019-2021. BerryDunn assumed that these requests would be approved, that the proportion of that bed capacity to be covered by fully insured health plans would be consistent with historical patterns, and that the growth in bed days would not be constrained by capacity limitations.

The bed days attributable to the anticipated increase in the ALOS are incremental to Section 105. BerryDunn multiplied the estimated increase in the ALOS from Table 3 by the total number of admissions in Table 2 and calculated the additional number of bed days that are incremental due to the MHBP. The additional days are shown in Table 4.

Table 4: Estimated Additional Days

	2020	2021	2022	2023	2024
Low Scenario	3,186	3,186	3,186	3,186	3,186
Mid Scenario	4,380	4,380	4,380	4,380	4,380
High Scenario	5,575	5,575	5,575	5,575	5,575

The incremental cost of Section 105 is based on a projected cost per day and the additional days due to the longer ALOS. BerryDunn projected the cost per day using the long-term average national projection for cost increases to hospital care expenditures of 4.8% over the study period.8 BerryDunn multiplied the projection factor by the cost per day calculated in Table 1. Results are show in Table 5.

Table 5: Estimated Cost per Day

2017	2020	2021	2022	2023	2024
$972	$1,120	$1,174	$1,231	$1,290	$1,353

BerryDunn multiplied the additional number of bed days from Table 4 by the cost per day amounts in Table 5 to determine the incremental claims cost. Results are displayed in Table 6.

Table 6: Estimated Marginal Cost of the Longer ALOS ($000s)

	2020	2021	2022	2023	2024
Low Scenario	$3,567	$3,739	$3,921	$4,110	$4,309
Mid Scenario	$4,904	$5,142	$5,391	$5,652	$5,926
High Scenario	$6,242	$6,544	$6,861	$7,193	$7,542

BerryDunn divided the incremental cost by corresponding member months to calculate incremental PMPM costs which are shown in Table 7.

Table 7: Estimated Marginal PMPM Cost of the Longer ALOS

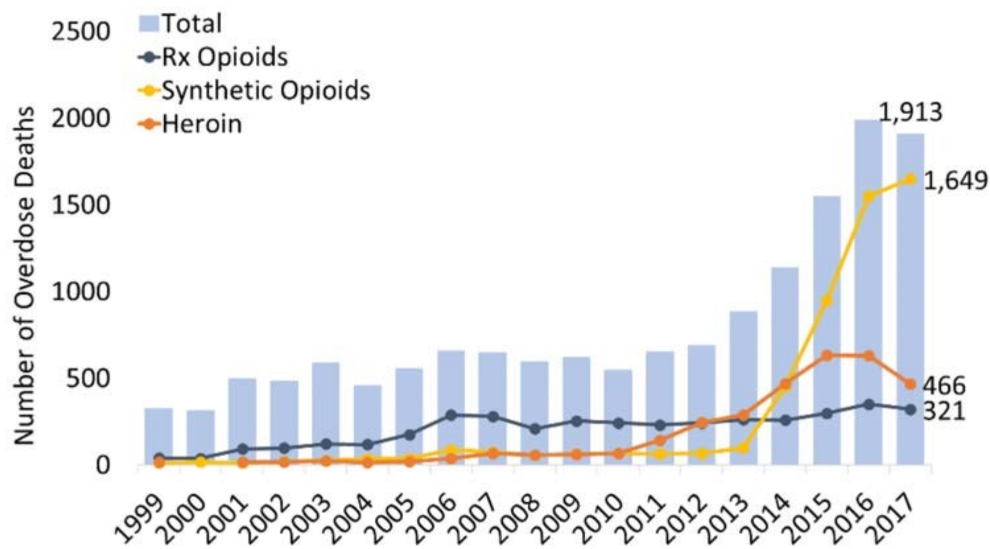
	2020	2021	2022	2023	2024
Low Scenario	$0.18	$0.19	$0.20	$0.21	$0.22
Mid Scenario	$0.25	$0.26	$0.27	$0.28	$0.30
High Scenario	$0.31	$0.33	$0.34	$0.36	$0.38

5.2 Moving the Determination of Medical Necessity for Newly Generated Adult Admissions from Carriers to Providers

BerryDunn estimated the impact of moving the determination of medical necessity, either fully or partially, from the carriers to providers on new admissions induced by Section 105.

If Section 105 is enacted, new admissions will likely result, potentially including provider firms not currently operating in Massachusetts. New for-profit SUD providers added bed capacity after the enactment of Chapter 258. BerryDunn estimated the additional mental health beds due to the enactment of Section 105 based in part on relevant experience from Chapter 258. After Chapter 258 went into effect, approximately 20% of the expanded bed capacity was from new provider entrants. The opioid crisis was at a critical stage when Chapter 258 was implemented. Massachusetts ranked among the top 10 states with the highest rates of drug overdose deaths involving opioids. In 2017, there were 1,913 drug overdose deaths involving opioids in Massachusetts.[9] That rate more than doubled from the years prior to Chapter 258, largely driven by synthetic opioids, and has since leveled off, as illustrated in Figure 1.

Figure 1: Number of overdose deaths involving opioids in Massachusetts, by category[10]



While there is unmet demand for mental health services, it is less likely that Section 105 will attract additional for-profit providers to the extent experienced from Chapter 258. After the implementation of Chapter 258, the additional admissions were a result of the new providers. Chapter 258 took effect on October 1, 2015, and impacted coverage for members once their health coverage renewed after that date. Because employers can renew health coverage at any time during the year, the last plans to add Chapter 258 coverage were plans with a September 2016 renewal. Thus 2017 was the first calendar year that Chapter 258 was fully implemented. Overall admissions increased by about 11% in 2015 and 2016 and by 5.2% in 2017, the year that Chapter 258 was fully implemented. It is uncertain how many of the additional admissions were due to Chapter 258 vs. increases because of the growing opioid epidemic.[xxxv] To address this uncertainty, in the high-cost scenario, BerryDunn conservatively assumes the increase in admissions were all attributable to Chapter 258, and that Section 105 will result in the same percent increase in the number of SUD admissions observed in 2017 following the implementation of Chapter 258. It will take some time to get the new beds licensed and operational, and, based on Chapter 258 experience, it will take approximately two years for the new facilities to be fully operational. The high-cost scenario assumes that new providers, will add an additional 1% in the first year and another 4% in the second year beyond planned capacity. The low-cost scenario assumes admissions will increase by 0.25% in the first year and another 0.75% in the second year. The middle-cost scenario assumes admissions will increase 0.5% in the first year and an additional 1.5% in the second year. The cumulative increases relative to the current number of admissions are shown in Table 8.

[xxxv] CHIA's report estimating the impact of Chapter 258 was published in 2014 and was based on APCD data from 2012 and prior, immediately preceding the dramatic increase displayed in Figure 1.

Table 8: Estimated Percent Increase in Admissions

	2020	2021	2022	2023	2024
Low Scenario	0.25%	1.0%	1.0%	1.0%	1.0%
Mid Scenario	0.5%	2.0%	2.0%	2.0%	2.0%
High Scenario	1.0%	5.0%	5.0%	5.0%	5.0%

Applying the admission rate percentage increases from Table 8 to the current number of admissions, BerryDunn estimated the number of new admissions due to the expanded capacity beyond that currently planned. Results are shown in Table 9.

Table 9: Estimated New Admissions Due to Expanded Capacity

	2020	2021	2022	2023	2024
Low Scenario	10	40	40	40	40
Mid Scenario	20	80	80	80	80
High Scenario	40	199	199	199	199

As discussed in the previous section, relevant experience from Chapter 258 indicated a longer ALOS for new providers that entered the Commonwealth. For the new providers, the ALOS increased by approximately 1.7 days or 33%. Mental health services have longer ALOS than the SUD services addressed by Chapter 258, so BerryDunn used both the incremental increase in days and percentage increase in days to estimate a range for the impact of Section 105. The low-cost scenario assumes an increase of 1.7 days relative to the historical average, resulting in an 18.7% increase in the ALOS. The high-cost scenario assumes a 33.0% increase in the ALOS resulting in an increase of 3.0 days. The middle-cost scenario assumes that the increase in ALOS will increase 25.9% or 2.4 days. Table 10 displays the estimated increase in the ALOS and the estimated new total ALOS under Section 105.

Table 10: Estimated Additional LOS

	CURRENT ALOS	% INCREASE	ADDITIONAL DAYS	NEW TOTAL ALOS
Low Scenario	9.1	18.7%	1.7	10.8
Mid Scenario	9.1	25.9%	2.4	11.4
High Scenario	9.1	33.0%	3.0	12.1

The expanded bed capacity is expected to go into effect due to Section 105, so the entire cost of new admissions is incremental to Section 105. It is important to note that the assumed ALOS does not include the impact of any increased lengths of stay due to a reduction in ED boarding (as capacity increases); BerryDunn conservatively considered the effect to be cost neutral. BerryDunn multiplied the estimated ALOS from Table 10 by the number of new admissions in Table 9 to calculate the additional number of bed days that are incremental due to the MHBP. The additional days are shown in Table 11.

Table 11: Estimated Additional Days

	2020	2021	2022	2023	2024
Low Scenario	107	429	429	429	429
Mid Scenario	228	910	910	910	910
High Scenario	481	2,405	2,405	2,405	2,405

For the low- and middle-cost scenarios, BerryDunn projected the cost per day using the long-term average national projection for cost increases to hospital care expenditures of 4.8% over the study period.[11] BerryDunn multiplied the projection factors by the cost per day calculated in Table 1. When Chapter 258 was enacted, the new providers had a cost per day that was 70% higher than that of in-state providers. In the high-cost scenario, BerryDunn estimates that the 2020 cost per day will be 70% higher than the other scenarios and then increase at the long-term national average projection of 4.8% per year for the rest of the study period. Cost per day amounts are shown in Table 12.

Table 12: Estimated Cost per Day

	2017	2020	2021	2022	2023	2024
Low Scenario	$972	$1,120	$1,174	$1,231	$1,290	$1,353
Mid Scenario	$972	$1,120	$1,174	$1,231	$1,290	$1,353
High Scenario	$972	$1,903	$1,996	$2,092	$2,194	$2,300

BerryDunn multiplied the additional number of days by the cost per day to determine the incremental cost. AT services make up approximately 90% of the total paid claim amounts. It is anticipated that the provider expansion only includes AT beds, so BerryDunn multiplied the incremental cost by 90%. Estimated incremental claims costs are displayed in Table 13.

Table 13: Estimated Marginal Cost of Additional Admissions (in $000s)

	2020	2021	2022	2023	2024
Low Scenario	$108	$453	$475	$498	$523
Mid Scenario	$229	$961	$1,008	$1,057	$1,108
High Scenario	$824	$4,319	$4,528	$4,747	$4,977

BerryDunn divided the incremental cost by corresponding member months to calculate incremental PMPM costs, which are shown in Table 14.

Table 14: Estimated Marginal PMPM Cost of Additional Admissions

	2020	2021	2022	2023	2024
Low Scenario	$0.01	$0.02	$0.02	$0.02	$0.03
Mid Scenario	$0.01	$0.05	$0.05	$0.05	$0.06
High Scenario	$0.04	$0.22	$0.23	$0.24	$0.25

5.3 Moving the Determination of Medical Necessity for Children from Carriers to Providers – ALOS Impact on Required Bed Capacity for Pre-Section 105 MBHP Admission Projections

BerryDunn estimated the impact of moving the determination of medical necessity, either fully or partially, from the carriers to the providers on admissions that would be occurring even in the absence of the Section 105 MHBPs.

Section 105 transfers the ability to define and determine the medical necessity for patients' mental health treatment from the carrier to the provider. BerryDunn used 2017 claims data from the APCD to calculate paid claim amounts, the number of admissions, and the number of days for AT, CSS, CBAT, and ICBAT services. BerryDunn divided the paid claim cost by the number of days and measured the cost per day for commercially fully insured children. Results are displayed in Table 15.

Table 15: Estimated Cost per Day for Child Mental Health Services

PAID CLAIMS COST	NUMBER OF DAYS	COST PER DAY
$23,883,325	25,438	$939

Next BerryDunn used the APCD to measure the total number of days and the number of admissions. BerryDunn divided the total number of days by the number of admissions and calculated the ALOS. Results are displayed in Table 16.

Table 16: Estimated ALOS

NUMBER OF DAYS	NUMBER OF ADMISSIONS	ALOS
25,438	2,500	10.2

As discussed in Section 5.1, transferring the determination of medical necessity from the carriers to the providers has the effect of increasing utilization or increasing the number of approved bed days. While it is likely that the impact on child and adolescent services will be different from the impact on adult services (and possibly lower, based on provider input), given the limited information available to set assumptions for this population, BerryDunn used the adult assumptions from Section 5.1. BerryDunn used both the incremental increase in days and the percentage increase in days to estimate a range for the impact of Section 105. The low-cost scenario assumes an increase of 0.8 days, resulting in a 7.9% increase in the ALOS. The high-cost scenario assumes a 15.2% increase in the ALOS, resulting in an increase of 1.6 days.[xxxvi] The middle-cost scenario assumes that the ALOS will increase 9.8%, or 1.0 day. Table 17 displays the assumed increase in the ALOS.

Table 17: Estimated Additional LOS

	ALOS	% INCREASE	ADDITIONAL DAYS
Low Scenario	10.2	7.9%	0.8
Mid Scenario	10.2	9.8%	1.0
High Scenario	10.2	15.2%	1.6

Based on an interview with a Commonwealth provider, the greatest lack of capacity is for children under age 13 with more complex needs, such as children with autism spectrum disorders (ASD) and children with intellectual or developmental disabilities (IDD). It is more difficult for these children to get into a bed during the school year, and there is excess capacity during the summer months and December. BerryDunn did not adjust for this seasonal effect because the data (including the number of admissions) used to make this projection includes this seasonality impact. Similar to the analysis for adults, this analysis assumes bed capacity will expand over time for AT services. The days attributable to the anticipated increase in the ALOS are incremental to Section 105. BerryDunn multiplied the estimated increase in the ALOS from Table 17 by the total number of admissions in Table 16 and calculated the additional number of bed days that are incremental due to the MHBP. The additional days are shown in Table 18.

[xxxvi] The increase under Chapter 258 was 15.3%. BerryDunn multiplied 15.3% by the 10.2 ALOS and calculated an increase of 1.56 days. BerryDunn used 1.55 days, which is a 15.2% increase in the ALOS.

Table 18: Estimated Additional Days

	2020	2021	2022	2023	2024
Low Scenario	2,000	2,000	2,000	2,000	2,000
Mid Scenario	2,500	2,500	2,500	2,500	2,500
High Scenario	3,875	3,875	3,875	3,875	3,875

The incremental cost of Section 105 is based on a projected cost per day and the additional days due to the longer ALOS. BerryDunn projected the cost per day using the long-term average national projection for cost increases to hospital care expenditures of 4.8% over the study period.[12] BerryDunn multiplied the projection factor by the cost per day calculated in Table 15. Results are show in Table 19.

Table 19: Estimated Cost per Day

2017	2020	2021	2022	2023	2024
$939	$1,082	$1,134	$1,189	$1,247	$1,307

BerryDunn multiplied the additional number of bed days from Table 18 by the cost per day amounts in Table 19 to determine the incremental claims cost. Results are displayed in Table 20.

Table 20: Estimated Marginal Cost of the Longer ALOS (in $000s)

	2020	2021	2022	2023	2024
Low Scenario	$2,164	$2,269	$2,379	$2,494	$2,615
Mid Scenario	$2,705	$2,836	$2,973	$3,117	$3,268
High Scenario	$4,193	$4,396	$4,609	$4,832	$5,066

BerryDunn divided the annual incremental cost by the corresponding membership to estimate the incremental PMPM amounts. Table 21 displays incremental PMPM amounts.

Table 21: Estimated Marginal PMPM Cost of the Longer ALOS

	2020	2021	2022	2023	2024
Low Scenario	$0.11	$0.11	$0.12	$0.12	$0.13
Mid Scenario	$0.14	$0.14	$0.15	$0.16	$0.16
High Scenario	$0.21	$0.22	$0.23	$0.24	$0.25

5.4 Moving the Determination of Medical Necessity for Newly Generated Child and Adolescent Admissions from Carriers to Providers

BerryDunn estimated the impact of moving the determination of medical necessity, either fully or partially, from the carriers to providers on new admissions induced by Section 105.

As discussed in Section 5.2, if Section 105 is enacted, new provider capacity will likely enter Massachusetts because of the change in the law. After Chapter 258 went into effect, approximately 20% of the expanded bed capacity was from out-of-state providers.

As discussed in Section 5.2, the additional admissions for SUD were a result of new providers, and admissions increased by 5.2% in 2017, the year that Chapter 258 was fully implemented. It is uncertain if the growth in admissions was due to the presence of Chapter 258 or in reaction to the opioid epidemic. Based on an interview with a Commonwealth provider, the same phenomenon of a large provider entering the market for children's mental health services is less likely. However, based on discussions with the DMH, it is a requirement that if a new facility is adding adult beds it must also add beds for children. Given the uncertainty in assumptions around the potential impact of Section 105 on children's admissions, this analysis conservatively uses the adult assumptions discussed in Section 5.2. The high-cost scenario assumes that admissions will increase 1% in the first year and another 4% in year two. The low-cost scenario assumes admissions will increase by 0.25% in the first year and another 0.75% in the second year. The middle-cost scenario assumes admissions will increase 0.5% in the first year and an additional 1.5% in the second year. The cumulative increases relative to the current number of admissions are displayed in Table 22.

Table 22: Estimated Rate of Increase in Admissions

	2020	2021	2022	2023	2024
Low Scenario	0.25%	1.0%	1.0%	1.0%	1.0%
Mid Scenario	0.5%	2.0%	2.0%	2.0%	2.0%
High Scenario	1.0%	5.0%	5.0%	5.0%	5.0%

Applying the admission rate of increase from Table 22 to the current number of admissions, BerryDunn estimated the number of new admissions due to the expanded capacity beyond that currently planned. Results are shown in Table 23.

Table 23: Estimated New Admissions Due to Expanded Capacity

	2020	2021	2022	2023	2024
Low Scenario	6	25	25	25	25
Mid Scenario	13	50	50	50	50
High Scenario	25	125	125	125	125

As discussed in the previous section, relevant experience from Chapter 258 indicated a longer ALOS for new providers that entered the Commonwealth. BerryDunn analyzed the increase in the ALOS due to Chapter 258. For the new providers, the ALOS increased by about 1.7 days or about 33%. Mental health services have longer ALOS than the SUD services that fell under Chapter 258. The low-cost scenario assumes an increase of 1.7 days or a 16.7% increase in the ALOS. The high-cost scenario assumes a 33.4% increase in the ALOS, or 3.4 days. The middle-cost scenario assumes that the ALOS will increase 24.6% or 2.5 days. Table 24 displays the estimated increase in the ALOS and the resulting new ALOS under Section 105.

Table 24: Estimated Additional LOS

	ALOS	% INCREASE	ADDITIONAL DAYS	NEW ALOS
Low Scenario	10.2	16.7%	1.7	11.9
Mid Scenario	10.2	24.6%	2.5	12.7
High Scenario	10.2	33.4%	3.4	13.6

This expanded bed capacity will go into effect because of Section 105, so the entire additional cost of new admissions is incremental to Section 105. BerryDunn multiplied the estimated new ALOS from Table 24 by the total number of new admissions in Table 23 to calculate the additional number of bed days that are incremental due to the MHBP. The additional days are shown in Table 25.

Table 25: Estimated Additional Days

	2020	2021	2022	2023	2024
Low Scenario	74	297	297	297	297
Mid Scenario	158	634	634	634	634
High Scenario	339	1,697	1,697	1,697	1,697

For the low- and middle-cost scenarios, BerryDunn projected the cost per day using the long-term average national projection for cost increases to hospital care expenditures of 4.8% over the study period.[13] BerryDunn multiplied the projection factors by the cost per day calculated in Table 15. Similar to adults, the high-cost scenario assumes that the new providers will have a cost per day that is 70% higher than the Massachusetts-based providers. BerryDunn increased the 2020 high scenario cost per day by 70% and then increased it at the long-tern national average projection of 4.8% per year for the rest of the projection period. Cost per day amounts are shown in Table 26.

Table 26: Estimated Cost per Day

	2017	2020	2021	2022	2023	2024
Low Scenario	$939	$1,082	$1,134	$1,189	$1,247	$1,307
Mid Scenario	$939	$1,082	$1,134	$1,189	$1,247	$1,307
High Scenario	$939	$1,839	$1,928	$2,022	$2,120	$2,222

BerryDunn multiplied the additional number of days by the cost per day to determine the incremental cost. AT services make up approximately 75% of the total paid claim amounts. It is anticipated that the provider expansion will only include AT beds, so BerryDunn multiplied the incremental cost by 75%. Estimated incremental claims costs are displayed in Table 27.

Table 27: Estimated Marginal Cost of Additional Admissions (in $000s)

	2020	2021	2022	2023	2024
Low Scenario	$60	$253	$265	$278	$291
Mid Scenario	$129	$539	$565	$593	$621
High Scenario	$468	$2,454	$2,573	$2,698	$2,828

BerryDunn divided the incremental cost by corresponding member months to calculate incremental PMPM cost, which is shown in Table 28.

Table 28: Estimated Marginal PMPM Cost of Additional Admissions ALOS

	2020	2021	2022	2023	2024
Low Scenario	$0.00	$0.01	$0.01	$0.01	$0.01
Mid Scenario	$0.01	$0.03	$0.03	$0.03	$0.03
High Scenario	$0.02	$0.12	$0.13	$0.13	$0.14

5.5 Marginal Cost PMPM

Adding the estimated PMPM costs associated with the four relevant provisions (from Tables 7, 14, 21, and 28) yields the total PMPM marginal cost, shown in Table 29.

Table 29: Estimated Marginal PMPM Cost of Section 105

	2020	2021	2022	2023	2024
Low Scenario	$0.29	$0.34	$0.35	$0.37	$0.39
Mid Scenario	$0.40	$0.47	$0.50	$0.52	$0.55
High Scenario	$0.59	$0.89	$0.93	$0.97	$1.02

5.6 Projected Fully Insured Population in the Commonwealth

Table 30 shows the fully insured population in the Commonwealth ages 0 – 64 projected for the next five years. Appendix A describes the sources of these values.

Table 30: Projected Fully Insured Population in the Commonwealth, Ages 0 – 64

YEAR	TOTAL (0 – 64)
2020	2,143,554
2021	2,137,204
2022	2,130,078
2023	2,122,832
2024	2,115,005

5.7 Total Marginal Medical Expense

Multiplying the total estimated PMPM cost by the projected fully insured membership over the analysis period results in the total cost (carrier medical expense) associated with the proposed requirement, shown in Table 31. This analysis assumes the MHBP, if enacted, would be effective January 1, 2020.[xxxvii]

[xxxvii] The analysis assumes the mandate would be effective for policies issued and renewed on or after January 1, 2020. Based on an assumed renewal distribution by month, by market segment, and by the Commonwealth market segment composition, 71.3% of the member months exposed in 2020 will have the proposed mandate coverage in effect during calendar year 2020. The annual dollar impact of the mandate in 2020 was estimated using the estimated PMPM and applying it to 71.3% of the member months exposed.

Table 31: Estimated Marginal Cost of Section 105 (in $000s)

	2020	2021	2022	2023	2024
Low Scenario	$5,406	$8,604	$8,991	$9,394	$9,813
Mid Scenario	$7,301	$12,147	$12,692	$13,262	$13,853
High Scenario	$10,746	$22,699	$23,719	$24,783	$25,887

5.8 Carrier Retention and Increase in Premium

Carriers include their retention expenses in fully insured premiums. Retention expenses include general administration, commissions, taxes, fees, and contribution to surplus or profit. Assuming an average retention rate of 13.5% based on CHIA's analysis of fully insured premium retention in the Commonwealth,[14] the increase in medical expenses was adjusted upward to approximate the total impact on premiums. Table 32 shows the result.

Table 32: Estimate of Increase in Carrier Premium Expense (in $000s)

	2020	2021	2022	2023	2024
Low Scenario	$6,247	$9,943	$10,390	$10,856	$11,340
Mid Scenario	$8,438	$14,037	$14,668	$15,326	$16,009
High Scenario	$12,419	$26,232	$27,410	$28,640	$29,916

6.0 Results

The estimated impact on medical expenses and premiums of the MHBPs described in Section 105 appears below. The analysis includes development of a best estimate mid-level cost scenario, as well as a low-cost scenario using assumptions that produced a lower estimate, and a high-cost scenario using more conservative assumptions that produced a higher estimated impact.

The impact on premiums is driven by the provisions of Section 105 that transfer from the carriers to the providers the ability to define and determine the medical necessity for their patients' treatment of mental health services. Variation between scenarios is attributable to the uncertainty surrounding how much the ALOS will increase, how much the provider capacity will expand, and how much the provider expansion will increase admissions.

Starting in 2022, the federal ACA will impose an excise tax, commonly known as the "Cadillac Tax," on expenditures on health insurance premiums and other relevant items (e.g., health savings account contributions) that exceed specified thresholds.[xxxviii] To the extent that relevant expenditures exceed those thresholds (in 2022), S.B. 543—by increasing premiums—has the potential of creating liability for additional amounts under the tax. Estimating the amount of potential tax liability requires information on the extent to which premiums, notwithstanding the effect of S.B. 543, will exceed or approach the thresholds, and is beyond the scope of this analysis.

6.1 Five-Year Estimated Impact

For each year in the five-year analysis period, Table 33 displays the projected net impact of the proposed language on medical expense and premiums using a projection of Commonwealth fully insured membership. Note that the relevant provisions of Section 105 are assumed effective January 1, 2020.[15]

The low-cost scenario impact is $10.3 million per year on average. This scenario assumes admissions will grow by 1.0% and the ALOS will increase less than one day for existing providers. The high-cost scenario impact is $26.5 million per year on average and is based on an assumption that admissions will grow by 5% and the ALOS will increase by about 1.4 days for adults and 1.6 days for children. The middle scenario assumes admissions will grow by 2.0% and the ALOS will increase by one day for children and 1.1 days for adults for existing providers. The middle scenario has average annual costs of $14.5 million, or an average of 0.1% of premium.

Finally, the impact of the proposed law on any one individual, employer group, or carrier may vary from the overall results, depending on the current level of benefits each receives or provides, and on how the benefits will change under the proposed language.

[xxxviii] The Cadillac Tax was originally scheduled to take effect in 2018, but Congress delayed the effective date until 2022. Congress is currently considering a permanent repeal of the tax through H.R. 748: Middle Class Health Benefits Tax Repeal Act of 2019 which would permanently repeal the Cadillac Tax. On July 17, 2019, H.R. 748 passed in the House. https://www.congress.gov/bill/116th-congress/house-bill/748.

Table 33: Summary Results

	2020	2021	2022	2023	2024	WEIGHTED AVERAGE	FIVE-YEAR TOTAL
Members (000s)	2,144	2,137	2,130	2,123	2,115		
Medical Expense Low ($000s)	$5,406	$8,604	$8,991	$9,394	$9,813	$8,959	$42,208
Medical Expense Mid ($000s)	$7,301	$12,147	$12,692	$13,262	$13,853	$12,578	$59,254
Medical Expense High ($000s)	$10,746	$22,699	$23,719	$24,783	$25,887	$22,889	$107,835
Premium Low ($000s)	$6,247	$9,943	$10,390	$10,856	$11,340	$10,354	$48,777
Premium Mid ($000s)	$8,438	$14,037	$14,668	$15,326	$16,009	$14,535	$68,477
Premium High ($000s)	$12,419	$26,232	$27,410	$28,640	$29,916	$26,452	$124,618
PMPM Low	$0.34	$0.39	$0.41	$0.43	$0.45	$0.41	$0.41
PMPM Mid	$0.46	$0.55	$0.57	$0.60	$0.63	$0.57	$0.57
PMPM High	$0.68	$1.02	$1.07	$1.12	$1.18	$1.04	$1.04
Estimated Monthly Premium	$516	$531	$547	$563	$580	$548	$548
Premium % Rise Low	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Premium % Rise Mid	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Premium % Rise High	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%

6.2 Impact on the GIC

The proposed legislative change is assumed to apply to both fully insured and self-insured plans operated for state and local employees by the GIC, with an effective date for all GIC policies of July 1, 2020.

Benefit offerings of GIC plans are similar to those of most other commercial plans in the Commonwealth. To estimate the medical expense separately for the GIC, the PMPMs were applied to the GIC membership starting in July 2020.

Table 34 breaks out the GIC-only fully insured membership and the GIC self-insured membership, as well as the corresponding incremental medical expense and premium. Note that the total medical expense and premium values for the general fully insured membership displayed in Table 33 also include the GIC fully insured membership. Finally, the proposed legislative requirement is assumed to require the GIC to implement the provisions on July 1, 2020; therefore, the results in 2020 are approximately one-half of an annual value.

Table 34: GIC Summary Results

	2020	2021	2022	2023	2024	WEIGHTED AVERAGE	FIVE-YEAR TOTAL
GIC Fully Insured							
Members (000s)	72	72	72	72	71		
Medical Expense Low ($000s)	$127	$289	$303	$316	$331	$304	$1,367
Medical Expense Mid ($000s)	$172	$409	$427	$447	$467	$427	$1,922
Medical Expense High ($000s)	$253	$764	$799	$835	$873	$783	$3,523
Premium Low ($000s)	$147	$334	$350	$366	$382	$351	$1,579
Premium Mid ($000s)	$199	$472	$494	$516	$540	$494	$2,221
Premium High ($000s)	$293	$882	$923	$965	$1,008	$905	$4,071
GIC Self-Insured							
Members (000s)	270	270	269	269	268		
Medical Expense Low ($000s)	$477	$1,085	$1,136	$1,188	$1,243	$1,140	$5,130
Medical Expense Mid ($000s)	$645	$1,532	$1,604	$1,677	$1,755	$1,603	$7,213
Medical Expense High ($000s)	$949	$2,863	$2,997	$3,135	$3,279	$2,940	$13,223

Endnotes

[1] Session Law: Acts (2018) Chapter 208. An act for prevention and access to appropriate care and treatment of addiction. Accessed 8 July 2019: **https://malegislature.gov/Laws/SessionLaws/Acts/2018/Chapter208**.

[2] M.G.L. Chapter 3 §38C. Accessed 8 July 2019: **https://malegislature.gov/Laws/GeneralLaws/PartI/TitleI/Chapter3/Section38C**.

[3] Centers for Medicare & Medicaid Services (CMS), Center for Consumer Information and Insurance Oversight, Information on Essential Health Benefits (EHB) Benchmark Plans. Accessed 11 July 2018: **https://www.cms.gov/cciio/resources/data-resources/ehb.html**.

[4] Schedule of Benefits: HMO Blue® New England. $2,000 Deductible Plan Option. Accessed 6 June 2019: **https://www.mass.gov/files/documents/2016/11/nq/ehbbp-hmoblue-2017.pdf**.

[5] Press Release: HPC Issues New Research on Behaviorial Helath-Related Emergency Department Boarding. Accessed 6 June 2019: **https://www.mass.gov/news/hpc-issues-new-research-on-behavioral-health-related-emergency-department-boarding**.

[6] Frank R Brookmeyer, “Managed Mental Health Care and Patterns of Inpatient Utilization for Treatment of Affective Disorders”, Soc Psychiatry Psychiatr Epidemiol 1995 30: 220-223 Accessed 14 June 2019: **https://www.ncbi.nlm.nih.gov/pubmed/7482007**

[7] *Ibid.*

[8] U.S. Centers for Medicare & Medicaid Services (CMS), Office of the Actuary. National Health Expenditure Projections. Table 6, Hospital Care Expenditures; Aggregate and per Capita Amounts, Percent Distribution and Annual Percent Change by Source of Funds: Calendar Years 2018-2027; Private Insurance. Accessed 07 May 2019: **https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html**.

[9] National Institute on Drug Abuse, Massachusetts Opioid Summary, Accessed 08 May 2019: **https://www.drugabuse.gov/opioid-summaries-by-state/massachusetts-opioid-summary**

[10] Op. cit. National Institute on Drug Abuse, Massachusetts Opioid Summary.

[11] U.S. Centers for Medicare & Medicaid Services (CMS), Office of the Actuary. National Health Expenditure Projections. Table 6, Hospital Care Expenditures; Aggregate and per Capita Amounts, Percent Distribution and Annual Percent Change by Source of Funds: Calendar Years 2018-2027; Private Insurance. Accessed 07 May 2019: **https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html**.

[12] U.S. Centers for Medicare & Medicaid Services (CMS), Office of the Actuary. National Health Expenditure Projections. Table 6, Hospital Care Expenditures; Aggregate and per Capita Amounts, Percent Distribution and Annual Percent Change by Source of Funds: Calendar Years 2018-2027; Private Insurance. Accessed 07 May 2019: **https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html.**

[13] U.S. Centers for Medicare & Medicaid Services (CMS), Office of the Actuary. National Health Expenditure Projections. Table 6, Hospital Care Expenditures; Aggregate and per Capita Amounts, Percent Distribution and Annual Percent Change by Source of Funds: Calendar Years 2018-2027; Private Insurance. Accessed 07 May 2019: **https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html**.

[14] Massachusetts Center for Health Information and Analysis. Annual Report on the Massachusetts Health Care System, September 2018. Accessed 05 December 2018: **http://www.chiamass.gov/annual-report**.

[15] With an assumed start date of January 1, 2020, dollars were estimated at 71.3% of the annual cost, based upon an assumed renewal distribution by month (Jan through Dec) by market segment and the Massachusetts market segment composition.

Appendix A: Membership Affected by the Proposed Language

Membership potentially affected by the proposed mandated change to the use of medical necessity criteria includes Commonwealth residents with fully insured employer-sponsored health insurance issued by a Commonwealth-licensed company (including through the GIC); non-residents with fully insured employer-sponsored insurance issued in the Commonwealth; Commonwealth residents with individual (direct) health insurance coverage; and those with GIC self-insured coverage. BerryDunn's 2020 – 2024 membership projections for these populations are derived from the following sources:

- The 2016 MA APCD formed the base for the projections. The MA APCD provided fully insured and self-insured membership by carrier. The MA APCD was also used to estimate the number of non-residents covered by a Commonwealth policy. These are typically cases in which a non-resident works for a Commonwealth employer that offers employer-sponsored coverage. BerryDunn made adjustments to the data for membership not in the MA APCD, based on published membership reports available from CHIA and the Massachusetts DOI.

- CHIA publishes a quarterly enrollment trends report and supporting data book (enrollment-trends-july-2016-databook[1]), which provides enrollment data for Commonwealth residents by insurance carrier for most carriers. (Some small carriers are excluded.) CHIA used supplemental information beyond the data in the MA APCD to develop its enrollment trends report and provided BerryDunn with details regarding the use of supplemental carrier information for its December 2016 reported enrollment. The supplemental data were used to adjust the resident totals from the MA APCD.

- The DOI published reports titled Quarterly Report of HMO Membership in Closed Network Health Plans as of September 30, 2016[2] and Massachusetts DOI Annual Report Membership in MEDICAL Insured Preferred Provider Plans by County as of September 30, 2016.[3] These reports display fully insured covered members for licensed Commonwealth carriers where the member's primary residence is in the Commonwealth. The DOI report includes all carriers and was used to supplement the MA APCD membership for small carriers not in the MA APCD.

- BerryDunn estimated the distribution of members by age and gender using MA APCD population distribution ratiosMembership was projected from 2016 through 2024 using Census Bureau population growth-rate estimates by age and gender.[4]

- BerryDunn developed projections for the GIC self-insured lives using the GIC base data for 2014[5] and 2015,[6] as well as the same projected growth rates from the Census Bureau that were used for the Commonwealth population. Breakdowns of the GIC self-insured lives by gender and age were based on the Census Bureau distributions.

Appendix A Endnotes

[1] Center for Health Information and Analysis. Estimates of fully insured and self-insured membership by insurance carrier. Accessed 22 September 2016: www.chiamass.gov/enrollment-in-health-insurance/.

[2] Massachusetts Division of Insurance. HMO Group Membership and HMO Individual Membership: https://www.mass.gov/files/documents/2017/05/zm/4q16dist-group.pdf, https://www.mass.gov/files/documents/2017/05/zm/4q16dist-individual.pdf.

[3] Massachusetts Division of Insurance Annual Report. Membership in MEDICAL Insured Provider Plans by County as of December 31, 2016. Accessed 22 September 2016: https://www.mass.gov/files/documents/2018/02/16/2016-prefprov2.pdf.

[4] U.S. Census Bureau. Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2015. Accessed 28 April 2016: http://www.census.gov/popest/data/state/totals/2015/index.html.

[5] Group Insurance Commission. GIC Health Plan Membership by Insured Status FY2016. Accessed 6 December 2018: https://www.mass.gov/files/documents/2018/10/12/GIC_Annual%20Report%20FY2016.pdf

[6] Group Insurance Commission Fiscal Year 2016 Annual Report. Accessed 6 December 2018: https://www.mass.gov/files/documents/2018/10/12/GIC_Annual%20Report%20FY2016.pdf.