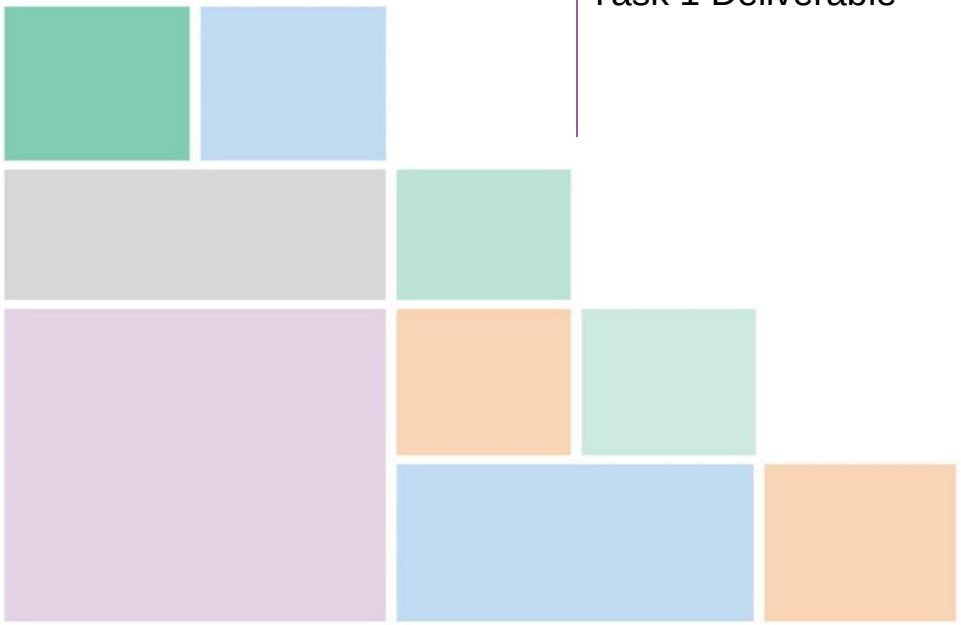
Advocates for Human Potential, Inc.

wellforce

# Review of Documents, Data Reports, and Analyses

Task 1 Deliverable



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## Background

The state of Massachusetts has invested significant time and money into healthcare redesign to improve care and accountability through its MassHealth Delivery System Reform Incentive Payment (DSRIP) Program. With much of the highest service consumption and poorest outcomes among MassHealth enrollees stemming from those with the serious mental illness (SMI), substance use disorders (SUD), co-occurring disorders (CODs), or other social and health-related issues, it is critical that services be coordinated to respond to the urgent needs of these vulnerable populations.

In an effort to address the needs of this population, Wellforce Care Plan Accountable Care Organization (ACO) developed a Behavioral Health Engagement Team (BHET) in its Lowell locations. Implementation of this model is in its infancy and a modified version of the model is being considered for two other Wellforce ACO sites: Melrose-Wakefield Hospital (Hallmark Health System) and Tufts Medical Center.

***Performance Goals for Lowell BHET***

- Decrease ED utilization by 5% by 2020
- Decrease avoidable readmissions by 5% by 2020
- Improve performance on ACO measure 13: 7 day follow up post ED discharge w/ mental illness diagnosis
- Improve performance on ACO measure 14: 7 day follow up post inpatient discharge with mental health provider

The BHET in Lowell is a multidisciplinary team charged with providing strategic engagement to a cohort of patients experiencing any of the following:

- increased utilization of the Emergency Department (ED)/Emergency Room (ER), psychiatric hospitalizations, and medical admissions driven by behavioral health diagnoses;
- unstable mental or behavioral health conditions;
- absence of long-term behavioral health providers;
- intentional and unintentional overdoses;
- need for detoxification and other supportive services for substance use;
- social determinants of health (SDOH) that drive ED visits (e.g., transportation); or
- SDOH that drive inpatient utilization (e.g., homelessness, food instability).

In 2019, Wellforce engaged healthcare consulting company Advocates for Human Potential, Inc. (AHP) to help them identify the critical pathways for treatment intersection and design and implement a plan and procedures to reduce avoidable admissions, re-admissions, and ED visits. This report is the deliverable for the Task 1: Review of Documents, Data Reports, and Analyses.

## Observation

This brief report is a summary of observations based on the review of two sets of data reports provided by Wellforce:

1. A series of Excel files titled "ER Wellforce_Pd Jul 19," and accompanying HCO-specific reports for Lowell Community Health Center (LCHC) and others. These reports cover year-to-date (YTD) cost and utilization and patterns of ED admissions by the local care organization (LCO) as organized by Wellforce.
2. The "Wellforce Care Plan Reporting Package" with reports from all seven local care organizations (LCOs) including cost and utilization comparisons of January through May (Jan-May) YTD between 2018 and 2019.

AHP's technical and clinical team reviewed and assessed these reports for the following data points:

1. Current reporting methodologies.
2. Structure, reporting outputs, and (in some cases) specific logic deployed or developed in assessing and stratifying high-risk cohorts.
3. Strategic areas of interest identified as potential opportunities that require further analysis and consideration between Wellforce and AHP.

What follows is a summary of observations meant to serve as a starting point for further discussion with the Wellforce Steering Committee. These observations are opportunities for ongoing collaboration.

### Observations from "ER Wellforce_Pd Jul 19"

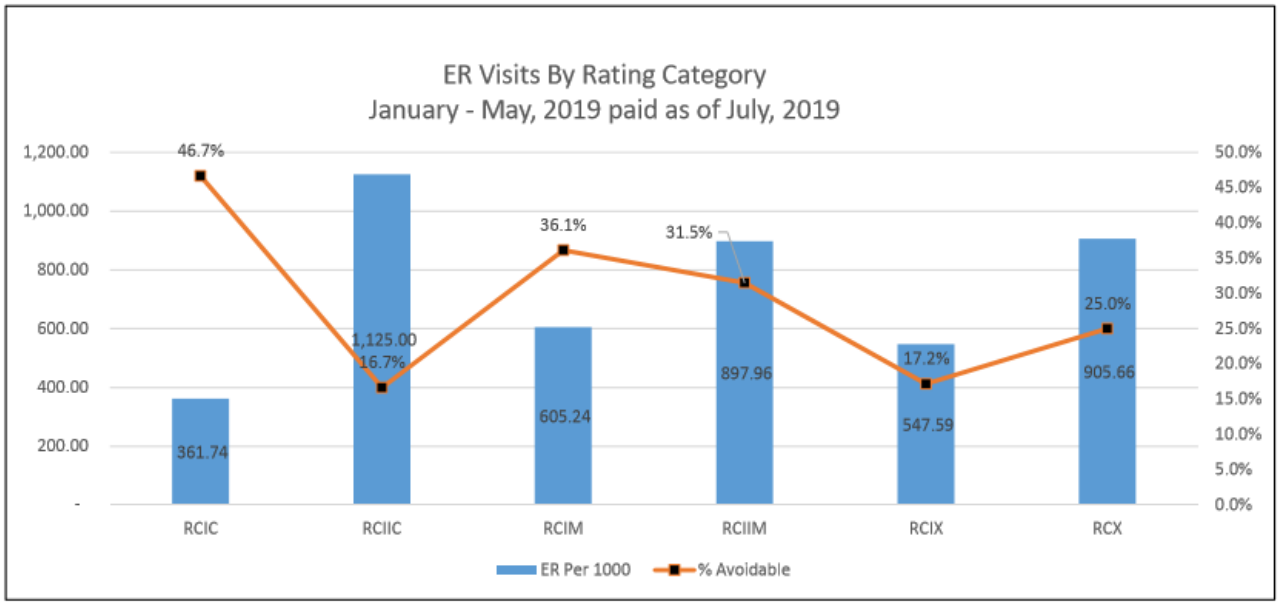
**1. Avoidable ED Utilization.** Initial evaluation of the reports provided October 15 (files titled: [site name] Jan-May 2019 Paid July 2019.pdf) found each report to include aggregate data and graphic reporting, including trended avoidable diagnoses. In follow up conversations, Wellforce provided the AHP team with a brief overview of the logic deployed in establishing diagnostic justification for avoidable visits. Open source logic available from New York University (NYU) was evaluated and cross referenced to the supplemental reporting provided, specifically in the file named "WCP ED Facility Visits working spreadsheet." (See appendix for copy of NYU logic.)

Based on the diagnoses listed within the Excel (.xls) sheet labeled "Avoidable Top 25 Diagnosis" in the WCP ED Facility Visits working spreadsheet, diagnoses primarily matched those diagnoses captured within the NYU logic as "Non-Emergent." NYU defines non-emergent as: "The patient's initial complaint, presenting symptoms, vital signs, medical history, and age indicated that immediate medical care was not required within 12 hours."

From the reports provided by the Wellforce team, AHP was unable to determine if the logic included avoidable ED utilization across all of the same categories identified by NYU (preventable but ED care needed, emergent PC treatable, nonemergent, alcohol, drug, injury, psych, and unclassified).

*See the below Wellforce report screenshots for reference.*

| Primary Diagnosis Code & Description | ER Visits | ER Allowed | Allowed Per Visit |
|---|---|---|---|
| J069 - Acute upper respiratory infection, unspecified | 19 | $5,507 | $289.86 |
| R51 - Headache | 12 | $6,773 | $564.41 |
| N390 - Urinary tract infection, site not specified | 11 | $5,990 | $544.56 |
| R112 - Nausea with vomiting, unspecified | 10 | $6,233 | $623.26 |
| M545 - Low back pain | 8 | $1,506 | $188.24 |




*Below is a screen shot of the New York University (NYU) domains referenced in this analysis. This screen shot, with the Non_Emergent boxed in red, reflects each of the categories used by NYU to fully represent their avoidable logic.*

| ED_Care_Needed__not_Preventable | ED_Care_Needed__Preventable_Avoi | Emergent__PC_Treatable | Non_Emergent | Alcohol | Drug | Injury | Psych | Unclassified |
|---|---|---|---|---|---|---|---|---|

**2. ED Utilization by HCO Site.** There was limited variation in utilization across sites observed.

1. LCHC and Milton Primary Care accounted for less than one-third of all HCO utilization and have a relatively lower rate of avoidable visits.
2. Tufts Medical Center and MetroWest have a disproportionately large rate of avoidable ED utilization.
3. Woburn and Highland account for the fewest ED utilizations per 1,000.

## Observations on Cost and Utilization from the Wellforce Care Plan Reporting Package for LCHC

**1. Cost and Utilization on Facility Inpatient – Row 114 Alcohol and Drug Abuse.** Year over year utilization trends based on admissions/1,000 and allowed PMPM (per member per month) were observed to increase greatly between YTD 2018 and 2019 in alcohol and drug abuse admissions. Most notably, allowed PMPM was observed to increase from $5.67 to $12.50 YTD 2018 to 2019 for LCHC adults. These increases appear to be similar for other LCOs across Wellforce.

| | 2018 YTD_May | | | | | | 2019YTD_May | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCG | Admits Per 1000 | Avg LOS | Utils per 1000 | Allowed Per Admit | Allowed per Util | Allowed PMPM | Admits Per 1000 | Avg LOS | Utils per 1000 | Allowed Per Admit | Allowed per Util | Allowed PMPM |
| 1. Facility Inpatient | 230.5 | 6.13 | 1,412.1 | $9,699 | $1,583 | $186.33 | 307.3 | 5.82 | 1,787.9 | $8,777 | $1,508 | $224.75 |
| I11 - Medical | 69.1 | 5.23 | 361.2 | $10,817 | $2,069 | $62.29 | 98.7 | 4.82 | 475.7 | $10,432 | $2,164 | $85.77 |
| I12 - Surgical | 18.8 | 6.10 | 115.0 | $24,786 | $4,063 | $38.92 | 24.7 | 4.94 | 121.9 | $23,840 | $4,823 | $49.00 |
| I13 - Psychiatric | 56.5 | 8.11 | 458.6 | $6,958 | $858 | $32.78 | 57.8 | 8.05 | 465.5 | $6,740 | $837 | $32.46 |
| I14 - Alcohol and Drug Abuse | 18.8 | 3.40 | 64.1 | $3,612 | $1,062 | $5.67 | 60.3 | 5.63 | 339.3 | $2,489 | $442 | $12.50 |

**2. Facility Outpatient.** While the utilization per 1,000 for facility outpatient psychiatric and alcohol and drug abuse treatment increased by 47% and 31% respectively, the allowed PMPM costs increased by 30% for psychiatric and ***decreased by 31% for alcohol and drug abuse.***

| | 2018 YTD_May | | | | | | 2019YTD_May | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCG | Admits Per 1000 | Avg LOS | Utils per 1000 | Allowed Per Admit | Allowed per Util | Allowed PMPM | dmits Per 1000 | Avg LOS | Utils per 1000 | Allowed Per Admit | Allowed per Util | Allowed PMPM | Admits Per 1000 | Utils Per 1000 | Allowed Per Admit | Allowed Per Util | Allowed PMPM |
| **2. Facility Outpatient** | | | **5,341.3** | | **$226** | **$100.70** | **0.0** | | **5,444.4** | | **$208** | **$94.37** | | **1.9%** | | **-8.1%** | **-6.3%** |
| O10 - Observation | | | 29.1 | | $1,315 | $3.19 | 0.0 | | 28.3 | | $1,033 | $2.44 | | -2.8% | | -21.4% | -23.6% |
| O11 - Emergency Room | | | 596.7 | | $445 | $22.13 | 0.0 | | 596.8 | | $380 | $18.91 | | 0.0% | | -14.6% | -14.5% |
| O12 - Surgery | | | 74.5 | | $1,694 | $10.51 | 0.0 | | 74.8 | | $2,238 | $13.94 | | 0.4% | | 32.2% | 32.6% |
| O13 - Radiology General | | | 367.5 | | $292 | $8.94 | 0.0 | | 394.1 | | $192 | $6.32 | | 7.2% | | -34.1% | -29.3% |
| O14 - Radiology - CT/MRI/PET | | | 55.5 | | $1,140 | $5.28 | 0.0 | | 54.2 | | $221 | $1.00 | | -2.4% | | -80.6% | -81.1% |
| O15 - Pathology/Lab | | | 1,382.9 | | $45 | $5.20 | 0.0 | | 1,419.0 | | $47 | $5.56 | | 2.6% | | 4.2% | 6.9% |
| O16 - Pharmacy | | | 113.1 | | $944 | $8.90 | 0.0 | | 124.8 | | $955 | $9.94 | | 10.4% | | 1.2% | 11.6% |
| O17 - Cardiovascular | | | 62.5 | | $263 | $1.37 | 0.0 | | 61.0 | | $236 | $1.20 | | -2.5% | | -10.4% | -12.7% |
| O18 - PT/OT/ST | | | 239.0 | | $174 | $3.46 | 0.0 | | 236.1 | | $170 | $3.34 | | -1.2% | | -2.2% | -3.4% |
| O31 - Psychiatric | | | 182.5 | | $137 | $2.09 | 0.0 | | 268.4 | | $121 | $2.70 | | 47.0% | | -12.0% | 29.4% |
| O32 - Alcohol & Drug Abuse | | | 88.3 | | $424 | $3.12 | 0.0 | | 115.6 | | $208 | $2.01 | | 30.9% | | -50.8% | -35.6% |

**3. Demographics of Wellforce ACO Membership.** Wellforce's Medicaid population is distributed across ages, with approximately half of all members between birth and 20.

## Member Months by Age & Gender & Rating Category

January - May 2019

fallonhealth

Milliman MedInsight

### Total Medicaid

| Age | F | M | Total | Percentage | |
|---|---|---|---|---|---|
| 00-04 | 31,862 | 33,627 | 65,489 | 13.49% | 48.84% |
| 05-09 | 30,348 | 31,702 | 62,050 | 12.78% | |
| 10-14 | 28,943 | 29,940 | 58,883 | 12.13% | |
| 15-20 | 25,157 | 25,553 | 50,710 | 10.44% | |
| 21-24 | 12,868 | 8,860 | 21,728 | 4.48% | |
| 25-29 | 23,360 | 14,618 | 37,978 | 7.82% | |
| 30-34 | 22,376 | 13,430 | 35,806 | 7.37% | |
| 35-39 | 19,191 | 12,415 | 31,606 | 6.51% | |
| 40-44 | 13,925 | 10,029 | 23,954 | 4.93% | |
| 45-49 | 12,961 | 10,334 | 23,295 | 4.80% | |
| 50-54 | 12,786 | 12,164 | 24,950 | 5.14% | |
| 55-59 | 13,460 | 12,195 | 25,655 | 5.28% | |
| 60-64 | 13,021 | 10,403 | 23,424 | 4.82% | |
| 65+ | 0 | 0 | 0 | 0.00% | |
| Type Total | 260,258 | 225,270 | 485,528 | | |
| Percentage | 53.60% | 46.40% | | | |

### Wellforce

| Age | F | M | Total | Percentage | |
|---|---|---|---|---|---|
| 00-04 | 16,814 | 17,604 | 34,418 | 13.45% | 49.98% |
| 05-09 | 16,321 | 17,137 | 33,458 | 13.08% | |
| 10-14 | 15,521 | 16,159 | 31,680 | 12.38% | |
| 15-20 | 13,833 | 14,482 | 28,315 | 11.07% | |
| 21-24 | 6,197 | 4,470 | 10,667 | 4.17% | |
| 25-29 | 11,348 | 7,248 | 18,596 | 7.27% | |
| 30-34 | 11,222 | 6,795 | 18,017 | 7.04% | |
| 35-39 | 9,621 | 6,291 | 15,912 | 6.22% | |
| 40-44 | 7,077 | 5,271 | 12,348 | 4.83% | |
| 45-49 | 6,694 | 5,544 | 12,238 | 4.78% | |
| 50-54 | 6,835 | 6,603 | 13,438 | 5.25% | |
| 55-59 | 7,312 | 6,583 | 13,895 | 5.43% | |
| 60-64 | 7,373 | 5,509 | 12,882 | 5.03% | |
| 65+ | 0 | 0 | 0 | 0.00% | |
| Type Total | 136,168 | 119,696 | 255,864 | | |
| Percentage | 53.22% | 46.78% | | | |

### Total Medicaid

| RC | F | M | Total | Percentage |
|---|---|---|---|---|
| RC I C | 113,183 | 113,865 | 227,048 | 46.76% |
| RC I M | 76,761 | 25,718 | 102,479 | 21.11% |
| RC II C | 3,236 | 6,989 | 10,225 | 2.11% |
| RC II M | 21,323 | 19,614 | 40,937 | 8.43% |
| RC IX | 45,032 | 58,252 | 103,284 | 21.27% |
| RC X | 723 | 832 | 1,555 | 0.32% |
| Type Total | 260,258 | 225,270 | 485,528 | |
| Percentage | 53.60% | 46.40% | | |

### Wellforce

| Age | F | M | Total | Percentage |
|---|---|---|---|---|
| RC I C | 60,861 | 61,815 | 122,676 | 47.95% |
| RC I M | 38,725 | 12,950 | 51,675 | 20.20% |
| RC II C | 1,684 | 3,545 | 5,229 | 2.04% |
| RC II M | 11,586 | 10,914 | 22,500 | 8.79% |
| RC IX | 22,971 | 30,136 | 53,107 | 20.76% |
| RC X | 341 | 336 | 677 | 0.26% |
| Type Total | 136,168 | 119,696 | 255,864 | |
| Percentage | 53.22% | 46.78% | | |

**4. Behavioral Health (BH)/Substance Use (SU) Facility Admissions distributed by geographic LCO.** The Lowell area LCOs (Merrimack, LCHC, and Lowell General physician hospital organization [PHO]) account for approximately 50% of the ACO membership. However, this group disproportionately represents inpatient BH/SU admissions, accounting for approximately two-thirds of that overall utilization.

**5. Readmission.**

a) ***Readmission Criteria:*** According to Wellforce, readmission is defined by two basic criteria: 1) an admission occurred, 2) a secondary admission of the same type (medical, surgical, or BH/SUD) occurred within 30 days of the primary admission. These criteria exclude readmissions across service types (e.g., if primary admission was medical and secondary was BH/SU, the secondary event would not be captured as a readmission, but rather captured as a primary BH/SU admission).

b) ***Readmission Rate at LCHC:*** LCHC was observed to account for a disproportionately large percentage of all Wellforce Care Plan admissions and readmissions. This trend was observed in both adults and children and accounted for one-third to one-half of all admissions and readmissions across all service types.

*Wellforce Care Plan*
*HCO - Lowell Community Health Center*
*Readmission Report*
*Original admissions from January 2019 through May 2019*
*Readmissions through June 2019*

| | Total Admits | | | | Medical Admits | | | | Surgical Admits | | | | BH/SU Admits | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACO Description | Total Admits | % of Total Admits | Readmit | % Readmit | Total Admits | % of Total Admits | Readmit | % Readmit | Total Admits | % of Total Admits | Readmit | % Readmit | Total Admits | % of Total Admits | Readmit | % Readmit |
| LCHC | 621 | 34.4% | 107 | 17.2% | 337 | 35.0% | 62 | 18.4% | 80 | 26.9% | 5 | 6.3% | 204 | 37.5% | 40 | 19.6% |
| All Other WCP | 1182 | 65.6% | 165 | 14.0% | 625 | 65.0% | 88 | 14.1% | 217 | 73.1% | 15 | 6.9% | 340 | 62.5% | 62 | 18.2% |
| **Total WCP** | **1803** | | **272** | **15.1%** | **962** | | **150** | **15.6%** | **297** | | **20** | **6.7%** | **544** | | **102** | **18.8%** |

| | Total Allowed $'s | | | | Medical Allowed $'s | | | | Surgical Allowed $'s | | | | BH/SU Allowed $'s | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACO Description | Total Cost | % of Grand Total | Total Readmit Cost | % of Total Allowed | Total Admits | % of Grand Total | Readmit | % of Total Allowed | Total Admits | % of Grand Total | Readmit | % of Total Allowed | Total Admits | % of Grand Total | Readmit | % of Total Allowed |
| LCHC | $7,850,867 | 31.1% | $1,583,471 | 20.2% | $7,214,050 | 65.6% | $623,818 | 8.6% | $1,770,939 | 20.9% | $72,262 | 4.1% | $2,289,509 | 39.8% | $887,391 | 38.8% |
| *Cost Per Admit* | $12,642 | | $14,799 | | $21,407 | | $10,062 | | $22,137 | | $14,452 | | $11,223 | | $0 | |
| All Other WCP | $17,396,256 | 68.9% | $2,268,675 | 13.0% | $3,790,419 | 34.4% | $1,245,370 | 32.9% | $6,716,916 | 79.1% | $290,077 | 4.3% | $3,465,290 | 60.2% | $733,229 | 21.2% |
| *Cost Per Admit* | $14,718 | | $13,750 | | $6,065 | | $14,152 | | $30,954 | | $19,338 | | $10,192 | | $11,826 | |
| **Total WCP** | **$25,247,122** | | **$3,852,146** | **15.3%** | **$11,004,469** | | **$1,869,188** | **17.0%** | **$8,487,855** | | **$362,338** | **4.3%** | **$5,754,798** | | **$1,620,620** | **28.2%** |
| *Cost Per Admit* | **$14,003** | | **$14,162** | | **$11,439** | | **$12,461** | | **$28,579** | | **$18,117** | | **$10,579** | | **$15,888** | |

## Recommendations

The data and reporting reviewed by the AHP team has resulted in substantive observations and critical follow up questions. During the review period, the AHP team conducted multiple internal team meetings and strategy sessions to establish the appropriate framework and criteria by which to recommend a successful path forward.

One important consideration is to establish appropriate performance benchmarks for the targeted reductions in ED admissions, inpatient admissions, and readmissions. AHP would like to work with Wellforce to determine baseline data for admissions, readmissions, and ED admissions in line with the targeted reductions.

We also recommend exploring ways to identify any additional cohorts or additional characteristics of the current cohort that drive avoidable BH, SUD, and SDOH-related ED utilization and readmissions. For example, are there a small number of members who make up a disproportionate share of ED and inpatient admissions? If so, can the care teams work to identify their patterns of care and engage with other providers to develop prevention plans? Such efforts can lead to actionable interventions for the care teams, including BHET, care transitions teams, complex care teams, walk-in center, bridge teams, float teams, BH transition teams, chronic disease teams, as well as guidance to the Community Partners (CPs) who may be engaged with these members.

We additionally recommend that more intensive collaboration be coordinated with the appropriate analytics team(s) throughout our engagement. To fully understand the data, the AHP team has some additional questions and observations in regard to the logic and process used to calculate and extrapolate preventable services and readmissions.

Finally, as discussed during the October 21, 2019, Steering Committee meeting, we recommend that evaluation of utilization and performance can be used to inform Wellforce's decision regarding which site AHP should initially collaborate with in order to observe most meaningful near-and long-term impact. Based on the observations captured in this report, the AHP team would recommend beginning engagement with the three LCOs in Lowell: LCHC, Lowell General Hospital, and Merrimack Valley that are the focus of the newly reorganized care management teams. AHP will commence interviews upon Wellforce's approval.

### Summary of Recommendations

1. Establish performance benchmarks for reductions in ED admissions, inpatient admissions, and readmissions.
2. Determine baseline data for admissions, readmissions, and ED admissions in line with the targeted reductions.
3. Identify any additional cohorts or characteristics that drive avoidable ED utilization and readmissions.
4. Work together to address additional questions regarding logic and process used with data.
5. Start interviews at Lowell sites.

## Key Questions

The following questions should be explored leading up to and during Task 2: Key informant interviews (KII) activities.

1. Inpatient alcohol and drug admissions have increased substantively YTD 2018-2019. What is the etiology of this increase? What is the etiology of the increased allowed PMPM over the same period for alcohol and drug admissions?
2. Can the ED data be stratified by unduplicated members to identify individual users who make up multiple ED admits and their diagnostic profile? (5% of members account for 50% of admissions?)
3. Has Wellforce set up metrics to measure progress on ED utilization? What utilization data is available to the care teams?
4. Does a readmission in the medical, surgical, and BH/SU column refer to a readmit “to” or readmit “from” for each column?
5. Are overdose admissions/visits being tracked? Are these visits being captured in the ED data?
6. Please confirm NYU logic referenced is accurate: is there other logic that AHP has not referenced in this report?
7. Are Behavioral Health Engagement Teams measured only on their decrease of avoidable BH/SU readmissions and BH/SU related ED utilization or are they also measured on medical ED and readmissions?
8. Are Care Transition Teams and Complex Care Teams measured on BH/SU ED utilization and avoidable readmissions?
9. Additional program design questions that were prompted by the review of the data:
    a. How are BH diagnoses and treatment issues integrated into the work of non-BH care teams?
    b. How often do the other teams (care transitions, complex care, walk in center, bridge, float, and chronic disease teams) interface with the population that is typically seen by the BHET, which include patients with
        - psychiatric hospitalizations,
        - medical admissions driven by behavioral health diagnoses,
        - unstable behavioral health conditions,
        - lack a long-term behavioral health providers,
        - experienced an overdose,
        - need for SUD services, or
        - social determinants of health?
    c. What strategies do non-BH care teams employ to help address their BH, SUD, and SDOH needs in an effort to prevent avoidable ED utilization and unnecessary psychiatric admission?

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