Adult Psychiatric Inpatient Capacity Demand Analysis for the State of Vermont

Nov. 28, 2018

John Brumsted, MD, UVMHN, CEO
Anna Noonan, RN, BSN, MS, President, UVMHN- CVMC
Eve Hoar, MBA, Network Director Strategic and Business Planning
• 2017 Legislative Session: Growing concerns related to mental health care
  – Future of Medicaid funding for VPCH and Brattleboro Retreat (“IMD Issue”)
  – Increasing wait times for mental health patients in EDs

• Spring 2018: Green Mountain Care Board Budget Meetings
  – UVMMC unbudgeted Net Patient Revenue $21M
  – GMCB Order:
    • Invest $21M to “measurably increase inpatient mental health capacity in Vermont”
    • Build in 3-4 years
  – July update: CVMC location, focus on adult IP need

• Sept. 2018: UVM Health Network Mental Health Strategic Plan
Inpatient Mental Health Facility Planning

• Design and create a UVM Health Network inpatient psychiatric facility/unit on the Central Vermont Medical Center Campus that will substantially improve access to inpatient mental health care as part of an integrated system of care in Vermont.

• Anchor planning in data-driven, evidence-based process.

• Create opportunities to share information publicly, including community forums, legislative briefings, media relations, public reporting, etc.
Psychiatric Inpatient Capacity (PIC) Planning Process

Phase I: Identify Size and Scope of Facility

Phase II: Design and Operational Requirements

Phase III: Operations

Data Analysis
Constituent Engagement
Finance
Legal
Govt Relations

Facilities
Constituent Engagement
Clinical
Govt Relations
Finance

Implementation of detailed construction, financing, and operational plans
Provide a forum for interested stakeholder input to inform the psychiatric inpatient expansion planning process underway at UVMHN- Central Vermont Medical Center.

PIPS will serve as a consistent forum for stakeholder engagement throughout the planning process.

PIPS will convene quarterly throughout the three primary phases of planning.

**Charter and membership distributed**
### Quarter 1 -- PIC Engagement, Outreach, and Communications
7/1/18 – 9/30/2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Tactic</th>
<th>Audiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/6/2018</td>
<td>Presentation: PIC Modeling Analysis</td>
<td>Internal Sub-group preliminary</td>
</tr>
<tr>
<td>9/6/2018</td>
<td>Presentation: PIC Overview</td>
<td>Community Collaborative</td>
</tr>
<tr>
<td>9/7/2018</td>
<td>Presentation: PIC Modeling Analysis</td>
<td>Full internal group review</td>
</tr>
<tr>
<td>9/17/2018</td>
<td>Presentation: PIC Modeling Analysis</td>
<td>PIC Steering Committee</td>
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<tr>
<td>9/18/2018</td>
<td>Presentation: PIC Overview</td>
<td>BOT Planning</td>
</tr>
<tr>
<td>9/19/2018</td>
<td>Presentation: PIC Modeling Analysis</td>
<td>THRIVE: Barre</td>
</tr>
<tr>
<td>9/24/2018</td>
<td>Presentation: PIC Modeling Analysis</td>
<td>DMH</td>
</tr>
<tr>
<td>9/26/2018</td>
<td>Presentation: PIC Modeling Analysis</td>
<td>Network Board Planning</td>
</tr>
<tr>
<td>9/27/2018</td>
<td>PIPS Meeting</td>
<td>Community Stakeholders Group</td>
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</tbody>
</table>

### Quarter 2 -- PIC Engagement, Outreach, and Communications
10/1/18 - 12/31/2018

<table>
<thead>
<tr>
<th>Date</th>
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<th>Audiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/4/2018</td>
<td>Presentation: PIC Modeling Analysis</td>
<td>Community Collaborative</td>
</tr>
<tr>
<td>10/5/2018</td>
<td>GMCB Meeting</td>
<td>Green Mountain Care Board and Staff</td>
</tr>
<tr>
<td>10/12/2018</td>
<td>Presentation: PIC Modeling Analysis</td>
<td>VAHHS Board meeting</td>
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<td>10/12/2018</td>
<td>Presentation: PIC Modeling Analysis</td>
<td>VAHHS CMO Meeting</td>
</tr>
<tr>
<td>10/15/2018</td>
<td>Presentation: PIC Modeling Analysis</td>
<td>Howard Center (Catherine Simonsen and Charlotte McCorkel)</td>
</tr>
<tr>
<td>10/15/2018</td>
<td>GMCB Report Distribution</td>
<td>A) Green Mountain Care Board</td>
</tr>
<tr>
<td>10/16/2018</td>
<td>PIC overview</td>
<td>Program Quality Meeting</td>
</tr>
<tr>
<td>10/16/2018</td>
<td>CVMC Community Town Hall</td>
<td>CVMC key influencers and public</td>
</tr>
<tr>
<td>10/22/2018</td>
<td>VTDigger Request for a quote</td>
<td>Media</td>
</tr>
<tr>
<td>10/25/2018</td>
<td>GMCB Report Distribution</td>
<td>PIPS Committee; UVMMC Program Quality Committee</td>
</tr>
<tr>
<td>10/26/2018</td>
<td>Meeting with Legislators</td>
<td>Health Reform Oversight Committee and friends</td>
</tr>
<tr>
<td>10/31/2018</td>
<td>CVMC Newsletter: Centerpost</td>
<td>Representatives Houghton and Jickling</td>
</tr>
<tr>
<td>10/31/2018</td>
<td>CVMC Email from President</td>
<td>Internal: CVMC Staff and Providers</td>
</tr>
<tr>
<td>11/2/2018</td>
<td>CVMC Employee Forums</td>
<td>Internal: CVMC Staff and providers</td>
</tr>
<tr>
<td>11/6/2018</td>
<td>Meeting with Al Gobeille</td>
<td>Internal: CVMC staff and providers</td>
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<tr>
<td>11/15/2018</td>
<td>IMD Report – Solutions</td>
<td>Vermont House and Senate Committees of Jurisdiction</td>
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<td>11/27/2018</td>
<td>Legislative Update</td>
<td>Rep. Mary Hooper</td>
</tr>
<tr>
<td>11/28/2018</td>
<td>GMCB Hearing</td>
<td>Green Mountain Care Board</td>
</tr>
<tr>
<td>12/1/2018</td>
<td>CVMC Med Staff Email</td>
<td>Internal: CVMC Providers</td>
</tr>
<tr>
<td>12/5/2018</td>
<td>AHS Meeting</td>
<td>AHS Secretary and key staff (Al Gobeille, Michael Costa, Ena Backus, Cory Gustafson, Mourning Fox)</td>
</tr>
<tr>
<td>12/20/2018</td>
<td>Inpatient Psych Presentation</td>
<td>Vermont Medical Society</td>
</tr>
<tr>
<td>12/20/2018</td>
<td>PIPS Meeting</td>
<td>Community Stakeholders Group</td>
</tr>
</tbody>
</table>
Phase I: Data Analysis
Objective:
Estimate the number of additional beds needed for adult inpatient psychiatry, focusing particularly on the problem of psychiatric patients waiting in EDs statewide for bed placement.

Key Assumption:
Currently existing adult inpatient bed capacity across the state remains in place (i.e., IMD issue for VPCH, Brattleboro Retreat is set aside while quantifying the incremental bed requirement issue).
Data Sources, Date Ranges, Acknowledgements

<table>
<thead>
<tr>
<th>Data Sources</th>
<th>Date Range</th>
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</thead>
<tbody>
<tr>
<td>VUHDDS Data Set</td>
<td>CY 2017</td>
</tr>
<tr>
<td>UVMMC and CVMC Internal Data</td>
<td>May 2017 – April 2018</td>
</tr>
</tbody>
</table>

• Acknowledgements
  – UVMHN Work Group and PIC Steering Committee
  – Halsa Advisors: Kristin Anderson, Scott Walters
  – VAHHS: Devon Green, Sean Judge, Mike Del Trecco
Estimate of Additional Adult Bed Need

- 5-9 Beds to reduce delays
- 18-20 Beds for unmet need
- 6 Beds for forecasted IP Psych growth

= 29-35 Additional beds needed
Presentation: 5 Segments

1. Current State
2. Delays
3. Unmet Need
4. 5-10 yr Growth
5. Additional Bed Need
Adult IP Psych Capacity: Current State

- 137 Adult IP Psych Beds today:
  - 45 Level One
  - 92 General IP Psych
  - 6 Locations: VPCH, Brattleboro Retreat, Rutland, Springfield, CVMC, UVMMC

- 95% or higher occupancy, 100% for Level 1 Beds (DMH reports, June 2018)
- Increase in patient acuity driving longer average length of stay (ALOS)
- Constrained to meet mental health needs for additional patients

### Mental Health Inpatient Discharges (MDC = 19)

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CVMC</td>
<td>379</td>
<td>370</td>
<td>408</td>
<td>4,013</td>
<td>3,979</td>
<td>4,572</td>
<td>10.6</td>
<td>10.8</td>
<td>11.2</td>
</tr>
<tr>
<td>Rutland</td>
<td>583</td>
<td>486</td>
<td>523</td>
<td>7,381</td>
<td>6,340</td>
<td>6,239</td>
<td>12.7</td>
<td>13.0</td>
<td>11.9</td>
</tr>
<tr>
<td>Springfield</td>
<td>357</td>
<td>329</td>
<td>322</td>
<td>2,383</td>
<td>2,700</td>
<td>2,349</td>
<td>6.7</td>
<td>8.2</td>
<td>7.3</td>
</tr>
<tr>
<td>UVMMC</td>
<td>502</td>
<td>497</td>
<td>530</td>
<td>8,599</td>
<td>8,859</td>
<td>10,750</td>
<td>17.1</td>
<td>17.8</td>
<td>20.3</td>
</tr>
<tr>
<td>Total</td>
<td>1,821</td>
<td>1,682</td>
<td>1,783</td>
<td>22,376</td>
<td>21,878</td>
<td>23,910</td>
<td>12.3</td>
<td>13.0</td>
<td>13.4</td>
</tr>
</tbody>
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VAHHS Mental Health Data:
ALOS = 23 days for discharged patients, 151 days for non-discharged patients
ED: Significant increase in mental health patients needing beyond-emergent care

- 42% increase in number of long stay ED patients
- ED volumes and wait times increase to critical levels
- VAHHS: ED days increasing by 29% per yr, excess days driving change at 47% per yr CY 2015 – CY 2017

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Total Outpatient ED Discharges</th>
<th>Long Stays (2+ Midnights)</th>
<th>Average Midnight Census</th>
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</thead>
<tbody>
<tr>
<td>Brattleboro</td>
<td>1,040</td>
<td>1,160</td>
<td>59</td>
</tr>
<tr>
<td>CVMC</td>
<td>1,199</td>
<td>1,199</td>
<td>63</td>
</tr>
<tr>
<td>Rutland</td>
<td>1,738</td>
<td>1,667</td>
<td>95</td>
</tr>
<tr>
<td>Southwest</td>
<td>972</td>
<td>1,007</td>
<td>93</td>
</tr>
<tr>
<td>Springfield</td>
<td>735</td>
<td>803</td>
<td>49</td>
</tr>
<tr>
<td>UVMMC</td>
<td>3,438</td>
<td>3,551</td>
<td>149</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>9,122</td>
<td>9,387</td>
<td>508</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Hospital</th>
<th>Number of ED Patients Waiting</th>
<th>Avg. Wait Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12-28 Hours</td>
<td>28+ Hours</td>
</tr>
<tr>
<td>Porter</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>CVMC</td>
<td>120</td>
<td>112</td>
</tr>
<tr>
<td>UVMMC</td>
<td>579</td>
<td>598</td>
</tr>
</tbody>
</table>

Data Sources: Porter: CY 2017 data, CVMC & UVMMC: Internal data May 2017-April 2018
Adult Inpatient Psychiatric Patients: Sources

- ED: 80%
- IP Med/Surg: 10%
- Direct from Community: 0%
- Direct Admit from Community: 10%

UVMMC Adult IP Psych Patients  May 2017-April 2018
2017 Data: Adult Psych Patients in EDs a Challenge for All VT Hospitals

• Often at least one psych patient at any ED around VT at midnight

Important Note: because outpatient ED data excludes those admitted to inpatient psych at same hospital, these graphs understate the reality at Rutland, Springfield, CVMC, UVMMC

Source: 2017 VUHDDS data
ED Psych Patient Volumes High, Significant Number of Longer Stays

Note: while outliers are not shown on the graphs above for improved readability, models and simulations include all patients, including outliers.
Some patients who present with both medical and psychiatric diagnoses are treated first in med/surg, then transfer to inpatient psychiatry when they are stable.

- UMVHN providers report delays in transferring patients to psychiatry due to bed availability. Patients are treated for their psychiatric condition on med/surg, but belong in IP psychiatry.

Quantifying the magnitude of the problem assumes patients should have experienced at least the average length of stay for their diagnosis.

- Not many patients appear to have had excess time (13 IP med/surg transfers identified).
- Only a part of their total LOS should have been on a psych unit.
- Increases IP Psych need only a little because only a small amount of incremental psych days are added.

Validation using Psych consult service data in process.

Direct admits from the community are not included on the assumption that they are unlikely to go without inpatient treatment.

- Patients who wait for care but are ultimately admitted are not incremental patients...they are served at the wrong time, but they receive services.
- Patients who can safely wait in the community are less likely to leave the wait list.
What is the number of additional beds to address the needs of adult patients needing IP psychiatric care?

– Timely placement in IP Psych bed
– Include impact of forecasted growth for next 5-10 yrs

Additional Adult IP Psych Bed Need: Our Approach

1. Beds to reduce delays
2. Beds for unmet need
3. Beds for forecasted IP Psych growth

X

Additional beds needed
1. Current State
2. Delays
3. Unmet Need
4. 5-10 yr Growth

= 5. Additional Bed Need
UVMMC and CVMC Data:
Many patients who were admitted had to wait days in the ED first

- Use internal UVMMC and CVMC data to connect ED stay with IP Psych stay
- Use to develop delay models for same-hospital admit delays, transfer delays
**Example:** Patient arrived at ED on 7/3, was admitted to IP psych on 7/5, discharged from IP psych on 7/17

- Patient received 12 inpatient psychiatric bed days
- Without wait time, patient would have been admitted on 7/3, discharged on 7/15 – still 12 days
- Patient discharges from IP Psych two days sooner, so bed now available two days earlier for next waiting patient

**Planning Assumption:** Actual patient IP LOS should not be adjusted to include ED wait time when we model patient IP stay beginning at ED arrival. We assume total IP psych bed days needed does not change because patient is not receiving fully effective treatment in the ED.
Results from Delay Models: 5-9 Beds Needed

IP Admit Delay Model: Add’l Need
- UVMMC: 1 - 3 beds
- CVMC: 0.5 bed
- Rutland est: 0.5 bed
- Springfield est: 0.5 bed

Total: 3 - 4 beds

Transfer Model: Additional Need
Total Statewide Need: 2 – 5 beds

Model Totals: 5 -9 beds
To reduce ED wait time to 8 hrs or less for patients who were admitted for IP Psych care

- IP Admission Delays Model
  - Take actual IP admissions
  - Admit on arrival <=8 hr
  - Discharge after actual LOS
  - Move PT who can’t be admitted w/o wait to new bed need

- Transfer Delays Model
  - Similar approach to above
  - Model statewide for all EDs
  - Includes additional capacity needed at VPCH, Brattleboro Retreat
  - Estimated LOS based on VAHHS IP Psych LOS Data (all patients)
5-9 Beds Needed to Address Delays for Patients Admitted or Transferred

- 5-9 Beds to reduce delays
- ? Beds for unmet need
- ? Beds for forecasted IP Psych growth

= X Additional beds needed
ED Psych Patient Volumes High, Significant Number of Longer Stays

Patients who waited for IP admission; stabilized in ED and discharged

Patients who waited for IP admission; stabilized in ED and discharged
Current State Findings:

Our EDs are the appropriate place to provide mental health emergent care, as they do for other emergent medical conditions.

- Some patients need a safe place to recover during a brief acute crisis and then can safely go home.
- Many patients assessed by psychiatry are not indicated for inpatient care (but rather for outpatient placements, residential treatment, etc.)

Some patients who left the ED after an extended stay may have benefited from inpatient treatment, but either left because the wait for a bed was too long, or they were treated and stabilized in the ED to enable them to go home.

- These are patients we need to solve for with additional inpatient capacity.
How many more patients should have been admitted?

“Gold standard” is a chart review for all patients waiting in the ED.

- Patient had a psychiatric assessment completed
- Patient was indicated for admission to an inpatient psychiatry unit

Completing thousands of chart reviews for everyone with a mental health diagnosis who left the ED without admission is a practical impossibility.

How many more patients should have been admitted (continued)?

In UVMCC’s chart review sample data, ED LOS for mental health conditions is strongly correlated with eventual admission

- Almost all (69%) patients who waited in the ED for >28 hours were eventually admitted to a hospital in the State (not necessarily to UVMCC).
  - The analysis assumes that all of these patients were indicated for inpatient psychiatry

- Almost all (85%) patients who stayed in the ED for <12 hours were eventually discharged without admission
  - The analysis assumes that none of these patients were indicated for inpatient psychiatry
Planning Assumptions
Based on Analysis of UVMMC ED Data

ED patients with mental health evaluations discharged from the ED

1. **Those who waited >28 hours**
   - For most patients in this group, ED LOS is comparable to low-acuity IP stay LOS.
   - Would have been admitted to IP Psych or transferred if a bed was available.
   - **Include 100% of these patients in unmet need.**

2. **Those who waited between 12 and 28 hours**
   - Chart review of sample indicated that approx. 20% of these patients were recommended for IP psychiatric care.
   - These 20% would have been admitted to IP Psych or transferred if bed available.
   - The remaining 80% of these patients would still be treated in the ED.
   - **Include 20% of these patients in unmet need.**

3. **Those who waited 12 hours or less**
   - Assumed that these patients received appropriate ED care for their mental health condition.
   - **Exclude these patients.**

*Does not include patients in the ED who did not receive a psych assessment.*
617 Additional IP Psych Patients from EDs across VT in 12 month period

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Data Source</th>
<th>ED Wait Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>28 + Hours $^1$</td>
<td>12-28 Hours $^2$</td>
</tr>
<tr>
<td>UVMMC</td>
<td>Internal Data - May 2017-April 2018</td>
<td>160</td>
</tr>
<tr>
<td>CVMC</td>
<td>2017-April 2018</td>
<td>33</td>
</tr>
<tr>
<td>Porter</td>
<td>VUHHDS 2017</td>
<td>9</td>
</tr>
<tr>
<td>Brattleboro</td>
<td>Outpatient Data</td>
<td>38</td>
</tr>
<tr>
<td>Rutland</td>
<td>(Data collected by VAHHS)</td>
<td>55</td>
</tr>
<tr>
<td>Southwest</td>
<td></td>
<td>47</td>
</tr>
<tr>
<td>Springfield</td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Other VT Hospital</td>
<td></td>
<td>46</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>424</strong></td>
</tr>
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</table>

$^1$ 100% of all patients waiting 28 hrs or more  
$^2$ Approximately 20% of all ED psych patients who waited in the 12-28 hr range
Assumed length of stay
- VAHHS IP Psych data for non-Level 1 patients
  - LOS range: 0 -194 days
  - ALOS = 8.4 days

Simulations randomly select from this distribution rather than using ALOS to better imitate reality

How long would these additional patients have stayed in an IP Psych bed?
Additional Census Distribution: 1000 Simulations
IP Psych Incremental Census Simulations
How Would 19 Additional Beds Work?

- Actual patient arrival dates
- Variations due to:
  - Arrival dates for the ~20% of 12-28 hr patients randomly selected*
  - Random selection for LOS along VAHHS actual non-Level 1 LOS curve

* A patient from the 12-28 hr group has a random 1-in-5 chance of being selected in the Unmet Need group in each simulation
Combined Results for 1000 Simulations:
Additional 18-20 beds

**100% Occupied**
- 18 beds: 10% of time
- 19 beds: 6-7% of time
- 20 beds: 4% of time

**Additional beds full and other patients waiting for a bed**
- 18 beds: Full w/ no wait: 4%
- Full but Patients Wait: 3-4%

- 19 beds: Full w/ no wait: 3%
- Full but Patients Wait: 6%

**19 beds:**
- Full w/ no wait: 3%
- Full but Patients Wait: 6%
Estimated Current Additional Bed Need: 23-29 Beds

- Beds to reduce delays: 5-9
- Beds for unmet need: 18-20
- Beds for forecasted IP Psych growth to 2027: ?

Additional beds needed: ?
Model Results: No Wait for IP Admission for 98%

Estimated Wait Times for Impacted Patients - Currently Waiting Prior to Admission or Never Admitted - with 26 Additional Beds

<table>
<thead>
<tr>
<th>Wait Time for Admission</th>
<th>Patients Currently Admitted</th>
<th>Expected New Admissions</th>
<th>Total</th>
<th>Percent of Total Admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Wait</td>
<td>1,024</td>
<td>523</td>
<td>1,547</td>
<td>98%</td>
</tr>
<tr>
<td>&lt;= 8 Hours</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>8-24 Hours</td>
<td>21</td>
<td>21</td>
<td>42</td>
<td>1%</td>
</tr>
<tr>
<td>24-48 Hours</td>
<td>8</td>
<td>8</td>
<td>16</td>
<td>1%</td>
</tr>
<tr>
<td>48 + Hours</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0%</td>
</tr>
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</table>

* Patients Currently Admitted includes all patients transferred to another IP Psych facility after staying more than 8 hours in a Vermont ED (697 patients), and patients waiting and ultimately admitted at UVMMC and CVMC (301 and 26 respectively). We expect that numbers for Rutland and Springfield will be similar to CVMC.

System-wide Occupancy Rate 88%
Simulation Results: +26 IP beds
>55% reduction in patient hours* in EDs

Combined Outpatient ED Change - Brattleboro, CVMC, Rutland, Springfield, Southwest, and UVMMC
Excludes impact of patients admitted to same hospital

<table>
<thead>
<tr>
<th>Patient Disposition</th>
<th>Patients Affected</th>
<th>Patient Hours in ED</th>
<th>Change</th>
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</thead>
<tbody>
<tr>
<td>Admitted: New Bed</td>
<td>478</td>
<td>31,410</td>
<td>-79%</td>
</tr>
<tr>
<td>Admitted: Transfer</td>
<td>810</td>
<td>32,335</td>
<td>-46%</td>
</tr>
<tr>
<td>OP ED</td>
<td>4,865</td>
<td>91,382</td>
<td>-55%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>6,153</td>
<td>41,083</td>
<td></td>
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</tbody>
</table>

* Does not include reduction in wait time for patients admitted to IP bed in same facility due to data availability.
Simulation Results: +26 IP beds
ED Impact – all psych ED patients at CVMC + UVMMC

58% decrease

64% decrease
Simulation Results: +26 IP beds  
CVMC + UVMMC: 1300 patient impact + 53,000 ED hrs

<table>
<thead>
<tr>
<th>Delay Patient Group:</th>
<th>CVMC</th>
<th>UVMMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted Patients</td>
<td>350</td>
<td>-65%</td>
</tr>
<tr>
<td>Transferred Patients</td>
<td>65</td>
<td>-92%</td>
</tr>
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<table>
<thead>
<tr>
<th>OP ED:</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Patients Needing IP Care</td>
<td>38</td>
<td></td>
<td>197</td>
<td></td>
</tr>
<tr>
<td>Total Hrs for Psych Patient Care</td>
<td>453</td>
<td>-32%</td>
<td>853</td>
<td>-42%</td>
</tr>
</tbody>
</table>

| Est Total Impact     | 453  | -58%  | 853  | -64%  |
| Est Total Decrease in ED Hrs | 11,143 |        | 42,148 |       |
Forecasted Growth for Adult IP Psych

1. Current State
2. Delays
3. Unmet Need
4. 5-10 yr Growth
5. Additional Bed Need
Sg2 Growth Forecast: IP Psychiatry Patient Days

• Forecast takes into account
  – Demographic factors
  – Epidemiology
  – Policy, regulatory factors
  – Economy
  – Innovation
  – Outpatient alternatives
  – Acuity

• 4% growth in patient days to 2022, flat 2022-2027
• Applied to current + estimated additional patient census

* In patient days
Estimate of Additional Bed Need

5-9 Beds to reduce delays

18-20 Beds for unmet need

6 Beds for forecasted IP Psych growth

= 29-35 Additional beds needed
## Adult IP Psych Bed Detail

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Location</th>
<th>Total Adult Inpatient Beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brattleboro Retreat</td>
<td>Brattleboro, VT</td>
<td>38</td>
</tr>
<tr>
<td>Central Vermont Medical Center</td>
<td>Berlin, VT</td>
<td>14</td>
</tr>
<tr>
<td>University of Vermont Medical Center</td>
<td>Burlington, VT</td>
<td>27</td>
</tr>
<tr>
<td>Rutland Regional Medical Center</td>
<td>Rutland, VT</td>
<td>23</td>
</tr>
<tr>
<td>Windham Center at Springfield Hospital</td>
<td>Springfield, VT</td>
<td>10</td>
</tr>
<tr>
<td>Vermont Psychiatric Care Hospital</td>
<td>Berlin, VT</td>
<td>25</td>
</tr>
</tbody>
</table>

**Beds under IMD Reimbursement:** 63
46% of total
Questions.....