

Involuntary psychiatric hospitalization in Vermont:

What the long term trends suggest for future average daily inpatient needs

[Note: average daily census = total days of care for patients divided by 365 days.]

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Our vision and a process of systems change from hospital to community for the care of persons with serious mental illness have been ongoing for 50 years. There have been landmarks in that vision, and Act 79 in 2013 was a new landmark, rather than creation of a new vision. After the establishment of the community mental health system and the first major wave of de-institutionalization in the 1960s, Vermont envisioned and put into legislation a further major shift to community-based care in the late 1990s. It was then that the state first began the use of designated hospitals in the community for involuntary patients, with the vision of making inpatient care more geographically accessible and to reduce use of the more institutional and restrictive VSH; new community investments were targeted to the elimination of the Dale rehabilitation unit, one of the three remaining inpatient units at VSH. The Futures Plan in 2004 enacted those same principles into legislation. It resulted in the first 20 intensive residential beds with the purpose of ending the use of VSH for non-acute care, an expansion of crisis beds from xx to xx (+10) with the purpose of diverting persons from unnecessary hospitalization, additional housing funds for community and the concept of a secure residential component for patients at VSH who required secure care but not at an inpatient level. It articulated the basic principles that became the core of Act 79.

The specific major time periods for the shifts to community-based care have been:

▶ **1965-1975**, a 10-year period with a reduction of average daily census from **1,207 to 396**, a decrease of 70% [an average reduction of 81 beds per year];

▶ **1987 to 1991**, a four-year period with a reduction from **200 to 96**, a drop of 50%, [an average reduction of 26 beds per year];

▶ **1991 to 1998**, a seven-year period with a further reduction from **96 to 51**, a drop of almost 50% [an average reduction of six beds per year].

All of these reductions involved the interaction between both fewer admissions and steadily decreasing lengths of stay.

Since 1998, despite the further community investments, there has been no reduction in the average daily census of persons receiving involuntary inpatient care in Vermont hospitals. *In fact, the expansion of EEs into designated hospitals resulted in an **increase** in the average daily census of involuntary patients at all hospitals by about eight between xxx and xx dates. In fact, as will be shown in more detail later, the expansion of EEs into designated hospitals resulted in a gradual increase in the average daily census of involuntary patients at all hospitals by about 14 by fy 2011.* Despite the addition of the first 20 intensive residential beds (14 at Second Spring in Williamtown opened in xx and 6 at Meadow View in Brattleboro opened xxx), as of 2011, inpatient pressures at VSH were continuing to increase rather than decrease. [cite numbers] The Dale rehabilitation unit was never able to be closed, and was relocated to become Brooks Rehab in 2001. Despite the further addition of xx intensive residential beds, xx crisis beds, and a 7-bed secure residence since Act 79 was passed, the current involuntary patient census (persons in the care and custody of the Commissioner) is currently averaging in the high 60's. [fy 2014] An excellent analysis predicted the “woodwork effect” of adding community residential programs with a less-than-equivalent reduction in hospital census can be found in the Milliman actuarial report of xxx, produced for the Futures planning and projecting xx years out (to 2016.)

A summary of this preliminary analysis of the newly available data suggests:

▶ **the number of involuntary inpatient beds needed in Vermont will remain at a minimum of approximately 60 to 65** for the long term future – assuming ongoing full support of new community programs in order to prevent further continuation of *increases*.

▶ the 45 Level 1 beds be at capacity at times and require overflow access to non-Level 1 capacity.

▶ non-Level 1-involuntary care demand will exceed the pre-Irene DH demand, creating a *continued access concern for voluntarily-referred patients*.

Thus while the increase in community investments is essential to the goal of reducing length of stay in order to avoid *increases*, the long term data suggest it is predictable that the number of involuntary inpatient beds needed will remain about the same, for the long term future. (Sixty reflects the *combination* of “Level 1” – which was defined to mean those still requiring the VSH level of care *as it stood in August of 2011, as opposed to any time prior* – **and** involuntary patients who were able to be served at designated hospitals as of August of 2011.)

Act 79 targeted the same clinical profile (persons no longer in need of the intensity of inpatient care, but in need of a higher level of care than available in the community) for reducing VSH (aka, Level 1) capacity as the Futures Plan’s community components had. It adding xx more intensive residential beds, realized the plans for a secure residence, and achieved the goal of situating crisis beds in every geographic sector of the state. It also added to supported housing and increased crisis response capacity and case management capacity through the state. As of the end of fy 2014, xx of the alternative program beds were open, but the average daily census of those requiring an involuntary inpatient setting was xxx (xx in a Level 1 bed, xx in a non-Level 1 bed, and xx “on hold” in an emergency room or DOC awaiting an open bed.)

There are two components from Act 79 not yet established: the 5-bed Soteria House is scheduled to open in February of 2015; an additional seven intensive residential beds are on hold pending funding and the identification of clinical need priorities. A potential for some reduction in length of stay was projected in testimony regarding changes in the involuntary medication laws in 2014, which is too early in implementation to assess. The ongoing need for post-hospital placements for patients in need of nursing home care with psychiatric supports has been re-identified and was not addressed in Act 79. Discrete sub-pockets of individual situations remain, including interstate compact issues. The degree to which future solutions related to these issues – including further community investments -- could still affect trends remains difficult to predict.

The final variable that could counter the trends that the data suggest is an intangible that has been articulated by the Commissioner of Mental Health: changing the “culture” of the system away from reliance on inpatient settings and managing care to maximize the use of community settings. Since this culture change began 50 years ago, it is difficult to envision a radical further impact.

DISCUSSION

Background of Level 1 and the Impacts on Census

There are two important background elements. The first is that the average census/aka capacity need is affected by two distinct factors: number of admissions and length of stay. The total annual number of days of inpatient care is equal to the number of admissions times the number of days of care (length of stay/ LOS). The total bed-days, divided by 365, is the average daily census. Thus the long term trends for length of stay and for admissions are independently important for identifying and understanding census trends.

The second is that Vermont began its first efforts at decentralizing involuntary inpatient care and expanding geographic access in **1996**, by using private (“designated”) hospitals for persons admitted on an EE (emergency exam) status. This diverted all but those with the most severe conditions and forensic referrals from VSH, in the ongoing (and as a whole, unsuccessful) effort to reduce the VSH census. The “Level 1” designation is a specific, point-in-time designation only. It reflects both patient profile and designated hospital capacity for involuntary patients as of August of 2011, because it reflects those patients who required a VSH admission either because there was an inability to provide the level of care [due to forensic status or level of risk] **OR** because there was no bed capacity among the five designated hospitals for that admission.

The relationship between admissions, length of stay, and census is most graphically illustrated when looking at the 10 years of the designated hospitals’ role in involuntary care between fy 1998 and 2010. **As of 2003 and since then (with a single year anomaly)**, involuntary admissions to designated hospitals exceeded those to VSH. The percentage of all EE admissions was much higher, at about 66% percent, because the designated hospitals did not admit forensic admissions. However, **the designated hospitals accounted for less than a quarter of the average daily census** of involuntary patients. In fy 2009 and 2010, the ADC was 14 among all the DHs, while it was close to 50 at VSH. This reflected the dramatically longer stays at VSH, not surprising since these patients included those with criminal court involvement and those who had been screened out from the capability of a DH to provide treatment.

The pre-Irene DH involuntary patients continue to be a distinct subset of those in the care and custody of the Commissioner, and it is critical in any analysis of trends to look at the interaction between the size of this subgroup and the “Level 1” subgroup. (They are identified in the new DMH data chart as “non-Level 1 involuntary”; a convenient label might be to consider them “Level 2” patients.) All five DHs continue to admit this subgroup, although some more actively than others. Within the DHs, however, it is only Level 1 patients who are reimbursed on a full-cost basis under “participating hospital” contracts; those contracts also control the “no refusal” status of designated Level 1 beds.

The number of involuntary admissions was increasing steadily during those years, from 433 in 2003 to 592 in 2010 – a 26 percent increase in eight years, 14 percent of that from 2008 to 2010 alone. The length of stay, on the other hand, was XXXXXXXXXXXXX, so the average daily census (???) Note that it is admissions that are presumed to be susceptible to reduction through crisis intervention, while it is length of stay that is presumed to be susceptible to reduction through access to enhanced discharge options, such as intensive or secure residential programs.

The New Data

The critical data available only in the past several months is admission and census information post-Irene identifying both the long-term trend line for all involuntary care extended beyond 2010, and the split between Level 1 and non-Level 1 to see any changes from the previously analogous split between VSH and DH involuntary patients. The system pressures and capacity for “Level 2” directly impacts whether access to inpatient psychiatric care to persons not in the care and custody of the Commissioner (“voluntary patients”) will be restored when the Level 1 system is fully in place. That general admission capacity is directly required by Act 79, as well, of course, as by parity in health care access. Still missing from the admissions and census data is a consistent trend line showing all categories without a break since 2009.

A drop in the annual number of involuntary admissions began in fy 2011, ergo, pre-Irene; it returned to the 2008 admission level of 508 (still a 14 percent increase since 2003). In fy 2012 it was 507, in 2013 it dropped to 477 and in fy 2014, to 456. If the fy 2015 admission rate from the first quarter is sustained, however, which would continue a six month trend at this increased admission level, the admissions would return to 508.

~~(The data available has a current gap between 2009 and 2012 but the data identify that when the system reached its current percentage of restored capacity (spring of 2013), the average daily census stabilized at about 65 (including the ADC in emergency rooms), the same approximate number reflected by the slow increase from about 50 in the late 1990's up through 2010. Recheck/revise~~

(Between 1994-2008, after the last major drop in days of involuntary care, the percentage of days of all involuntary care as a subset of all inpatient care has ranged from 24 to 28 percent. The lowest percentages occurred during the years that DHs had begun admitting significant numbers of patients, but only for the initial 3-day "hold" period, after which a patient needed to agree to stay voluntarily, or be transferred to VSH. Later, when the 3-day limitation no longer applied, the percentage of involuntary care increased again up to 28. The number of voluntary admissions is very substantially higher – xx percent – but the length of stay is very significantly lower, thus translating to the lower number of bed days and average daily census.)

Access to Voluntary Inpatient Care

The most critical contrast in terms of voluntary patient access is that in 2010 only 23 percent of all DH inpatient beds were in use by involuntary patients. The inpatient system as a whole was close to capacity, routinely above the 85 percent average that accommodates capacity variables, and with no evidence of over-utilization. *It is for that reason that if that percentage access to the same final number of non-Level 1 beds is not restored, the inference must be that voluntary patients will continue to have insufficient access to inpatient care.* The potential offset is the ongoing increase in inpatient beds being added and actively marketed by the Brattleboro Retreat. Although this might offset a reduced percentage of beds, it would eliminate provider choice and geographic access for a higher number of voluntary patients: the available beds, statewide, would be in Brattleboro. (Of note is that the DMH data and the Retreat data have never matched regarding its number of adult inpatient beds, and this is in need of clarification. However in addition, the Retreat draws a significant percentage of its commercial base from out-of-state, so not all capacity there is necessarily available to Vermonters.)

Analysis of the Overall Increase in Involuntary Inpatient Care

By 2010, involuntary admissions as a whole, at both VSH and the DHs, had been increasing very steadily after having dropped for xx consecutive years. Because length of stays were decreasing, the increase was not obvious; the ADC was increasing much more slowly. These increases were occurring despite tremendous systemic pressure to reduce involuntary admissions: VSH was running at near constant capacity, and DHs were at or beyond their capacity to increase the percentage of involuntary bed use and maintain safety and a therapeutic milieu for other patients. ER waits often occurred while emergency workers checked every hospital for an available bed.

By fy 2012, total EE admissions dropped to 476, in 2013 to 424, and in 2014 to 405. Forensic admissions also dropped, so total involuntary admissions went from 592 in 2010 to 477 in 2013 and to 456 in 2014.

The split between Level 1 and other involuntary patients has moved in a way that could be reasonably anticipated given the sudden change when VSH closed. Initially, 45 to 50 percent of

involuntary admissions were being screened as requiring Level 1 care, in contrast to 33 percent pre-Irene. In other words, whereas DHs had admitting 66 percent of all involuntary patients, only 50 to 55 percent were deemed to be appropriate for standard DH units through most of 2012 and 2013. By the fourth quarter of 2013 through the last quarter of 2014, it returned to the previous average; in the first quarter of fy 2015, it dropped more, to 25 percent. At the same time, the percentage of the census represented by Level 1 patients has also dropped which, given the typically significant longer length of stay, is unprecedented. Recall that in 2009 and 2010, about 75 of involuntary bed use was Level 1 (VSH.) In the 12 months between the summer of 2013 to the summer of 2014, the percentage of involuntary bed use that was designated as Level 1 dropped from 72 to 56 percent.

Thus to the extent that Level 1 pressures are decreasing (a lower percentage of a lower number of admissions), non-Level 1 pressures are increasing as a proportion. In fy 2013 and 2014, admissions rose back to the 2009 level, and fy 2015 – despite being at the 2008 level for all involuntary admissions – is on track to exceed the record high DH involuntary admissions of 2010. At a substantially higher percentage of the bed utilization percentage, this has huge implications for capacity left to be available to voluntary patients, since involuntary patients who are not in a Level 1 unit are in the general inpatient care units. Thus as the system “rights itself” for Level 1 capacity, the long term concern about general psychiatric inpatient capacity looms as the future concern. In addition, it affects the milieu on those general units if a higher percentage of patients are persons who do not wish to be there.

The “bed days” data shows exactly that.

While the Level 1 average daily census is now remaining below the Level 1 system capacity of 45 (in the past six quarters: 42, 40, 34, 35, 36, 41), the non-Level 1 average daily census is rising (16, 16, 23, 26, 32, 29) and these numbers are in contrast to the pre-Irene all-time high DH average daily census of 14.

The shift in identified category of Level 1/ non-Level 1 does have some potential sources of explanation. First, there have always been some forensic patients at VSH who were not at any higher risk of aggression than a DH patient, but legal issues precluded a DH admission. In fy 2013 and 14 about half of the roughly 50 forensic admissions were to DH/Non-Level 1 units.

In addition...?

But where are those patients going? The presumed success of new community options would be in a reduced average census (whether by more diversion/fewer admissions, and/or by more discharge options/shorter length of stay.) On a combined basis, however, that is not occurring, and in the past six months the average daily census is now reaching or even exceeding the pre-Irene combined average daily census in the range of x60. In the past six quarters, the overall census of involuntary patients has risen overall: 58, 56, 57, 61, 68, and 70. *[revise to reflect decimal increases] (They are going to the increase in Retreat capacity? Need to get these numbers, plus statewide utilization from the graphs...]*

Added to the data complexity is the apparent significant drop in the number of forensic admissions in the past three years. (The erratic range from 2002 to 2010 was between 75 and 107; it was 58 in 2012, 55 in 2013 and 51 in fy 2014). While one hypothesis could be a reluctance by the judiciary to order inpatient evaluations in an overtaxed system, the law had changed only a few years earlier to more correctly identify and admit only forensic referrals clinically appropriate for admission. This could be beginning to show effect just recently. Either

way, however, those 30 or so individuals are likely represented in the correctional system instead, with significant mental health symptoms just below the level of demanding inpatient care.)

Not included in those ADC numbers in the past six quarters is the daily census of “boarders” in the emergency rooms, which, although decreasing, remains a significant problem: (*numbers here...*) In addition, as the joint MHOC-HCOC report in 2013 noted, the maxing out of the inpatient system in the pre-Irene years had also already closed off VSH to inpatient needs of inmates in DOC. Based on previous experience and repeated studies, there appears to be a further shortfall of 2 to 4 beds on an ADC basis, in addition to the current average of 60 to 65 (all involuntary care) or 45 to 50 (Level 1 care). **Taken as a whole, the past six quarters would show a potential ADC [xxx to xxx] for all involuntary inpatient care if the capacity was available.**

Potential Implications

A 20-year trend despite significant expansions in crisis beds and the creation of 20 intensive residential beds in the mid-2000’s had suggested the possibility that the system had bottomed out of the ability to reduce involuntary inpatient care further. Act 79 invested significantly in further community resources to challenge that suggestion.

Acknowledging that the system is still evolving with its new capacities, the trend that bears very careful watching is that of non-Level 1 involuntary care. It could be that the community resources will achieve a goal of *preventing any further increases*, through a continued reduction in length of stay to offset population (aging) and acuity trends that will increase the number of individual admissions. The relationship between LOS and individual admissions has been the underlying basis for much of the early reductions in census and the subsequent slight increases. If community services divert some admissions, and reduce length of stay (including with use of the secure residence), the trend towards increases could be stabilized. *An actual decrease would represent a more significant challenge, arguably well beyond the scope of further, more comprehensive implementation of Act 79 or related adjustments.*

Thus the long term data does suggest it is very possible that the number of involuntary inpatient beds needed will remain at a minimum of approximately 65 for the long term future. Such a projection could be completely thrown off by future external unknowns, such as radical changes in prevention or treatment of serious psychiatric illnesses.

Planned accommodation for that average number would include the 45 new Level 1 beds, and a need for an average of 20 non-Level 1 beds in the DH system. As noted previously, that increase from pre-Irene levels (an approximate capacity of 12) would continue the impaired access to inpatient care for voluntarily-referred patients unless offset by an increase in other DH inpatient beds.