North Sound Substance Abuse Residential Treatment
Community Need Report

Prepared for North Sound Mental Health Administration & Skagit County

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slalom

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Executive Summary

This predictive model and report are designed to provide a quantitative tool and framework for North Sound to estimate bed need for Clinically Managed Residential Services for individuals with low, medium and high severity chronic substance use disorders.

This report and predictive model will:

- Describe trends in community need for residential substance abuse treatment in the North Sound region from 2005 to 2015,
- Provide a tool for predicting residential substance abuse treatment need for adults, pregnant and post-partum women and youth, and provide answers to some early questions about future needs,
- Facilitate assessing whether the current facility capacity is meeting the community's need, and
- Determine how daily bed need and utilization rates are impacted by time clients are in treatment and reductions in repeat readmissions.

Methodology

There are many more individuals who need treatment for substance abuse disorders than there are resources available, so current utilization is not a good indicator of actual need. In order to account for as much of the current unmet need as realistically possible given the available data, we used the American Society of Addiction Medicine's (ASAM) Patient Placement Criteria to estimate the number of clients needing low, medium and high substance abuse residential treatment, which corresponds respectively to need for recovery home, long-term residential, and intensive inpatient treatments.

Slalom built a predictive model using a TARGET extract of total monthly assessments at ASAM Levels III.1, III.3 and III.5 from North Sound Region Counties from 2004 to 2016. Assessment counts by sub-population (adult, PPW, youth) and individual counties were frequently less than 5 per month, so data was aggregated at the month and regional levels to maintain confidentiality. The model's predictive reliability was tested using a training set to build the model and a holdout dataset to test the model's predictive reliability.

The completed model allows users to test how daily bed need (2004 to 2020) is impacted by average length of stay and reductions in repeat clients across three critical sub-populations (adult, pregnant & post-partum women and youth) in low, medium and high-intensity residential treatment.

Community Need

Analysis shows different primary drugs for adults (alcohol), pregnant women (methamphetamines) and youth (marijuana) admitted to residential treatment services, and high rates of repeat admissions for all populations. Past seasonal trends show consistent peaks in bed need in spring and summer and low points in fall and winter for low, medium and high intensity residential treatment. The need for high-intensity residential treatment (i.e. intensive inpatient care) has increased over time for all populations, while need for medium- and low-intensity treatments (long-term residential and recovery homes) have decreased from 2005 to 2015. Whether this is due to changes in how individuals are assessed and treated or a change in need is unclear.

Future Predictions

Using the predictive model, we posed questions to help NSBHO estimate and evaluate the costs and impacts of providing different levels of treatment. Assuming ideal lengths of stay and no change to readmission rates, in 2018 North Sound can expect needing:

- An annual range of **126 to 164 total beds per day for Level 3.5/intensive inpatient treatment**, averaging 145 beds per day, with peaks in March and November, and low points May to June.
- An annual range of **27 to 39 total beds per day for Level 3.3/long-term residential treatment**, averaging 32 beds per day, with peaks in late January, early May, and low points in late March to April.
- An annual range of **14 to 23 total beds per day for Level 3.1/residential home treatment**, averaging 18 beds per day, with peaks in late April and early May, and low points in November

North Sound can also expect daily bed need to decrease with as little as 5 percent reduction in repeat clients for levels 3.3 and 3.5 residential treatment, suggesting that a stronger investment in reducing readmissions through a recovery-focused approach, improved discharge planning, or flexible resources like recovery coaches have high potential to reduce overall community need for more serious residential treatment.

Before investing in resources, planners should consider which end of the range is most appropriate to balance the community's need and best possible facility utilization rate. If need for care increases, clients need more time than expected, or there isn't budget to provide the total beds needed, NSBHO may need to provide a higher number of beds or prioritize certain sub-populations. Also, if need for care decreases (i.e. due to lower readmissions), or if clients require shorter lengths of stay than estimated, NSBHO may need to provide fewer beds per day.

Summary

Recognizing that the appropriate treatment resources may change over time, these are our conclusions based on the current analysis:

Facilities Overall. Stronger investment in reducing readmissions through a recovery-focused approach, improved discharge planning, or flexible resources like recovery coaches has great potential to reduce overall need for residential beds.

Level 3.5/ Intensive Inpatient resources. Community assessments for the highest intensity, shortest duration (30 days) residential care have increased 349% from 2005 to 2015, and continues to be the residential substance abuse treatment most needed in the future. The majority of the beds at this level of care will be needed for voluntary adult patients (66%), followed by pregnant and post-partum women (23%), and then youth (12%).

Level 3.3/ Long-term Residential resources. Community assessments for medium/high intensity, medium duration (60 day) residential care have decreased 79% from 2005 to 2015. The majority of care at this level can be planned for involuntary adults (69%), followed by voluntary adults (19%). Pregnant and post-partum women will account for approximately 13% of the total beds needed, assuming an ideal treatment stay of 180 days. Youth need for this level of care has consistently been low since 2005, and is expected to be about 5 beds per month (2 girls, 3 boys).

Level 3.1/Recovery Home resources. Community assessments for the lowest intensity, longest duration (180 day) residential care have decreased 98% from 2005 to 2015. The longer length of stay increases

the number of beds needed over time. Need for this level of care is closely split between youth (44%) and voluntary adults (56%). PPW need for this level of care is relatively low, but estimated to be about 12 beds needed per month.

Other considerations. The model informing these predictions is not static. It can and should be adjusted as NSBHO gains more refined understanding of the populations served. The model will gain greater accuracy as the assumptions and data behind them are refined over time. Think about how investments in other areas impact need for these residential care services (i.e. supportive housing or better discharge planning).

Introduction

About Slalom LLC

Slalom is a national business and technology consulting firm with 2,100+ consultants across 14 offices. Slalom designs and builds strategies and systems to help our clients solve some of their most complex and interesting business challenges. This project was a collaboration between our local Health Care and Information, Management and Analytics teams.

Project Background

Skagit County and the North Sound Behavioral Health Organization commissioned this report and the accompanying predictive model as part of a collaborative planning process to move behavioral health services currently offered at Pioneer Center North (a 141-bed residential substance use disorder treatment center) into new facilities and locations in the North Sound Region. The North Cascades Gateway Campus is being re-purposed and the current leases for the buildings are projected to expire in June 2018. The substance abuse treatment services currently offered on this campus will transition into community-based settings over the next three-six years.

This predictive model and report are designed to provide a quantitative tool and framework for North Sound to estimate future community need for Clinically Managed Residential Services for individuals with low, medium and high severity chronic substance use disorders.

Project Scope and Execution

The scope of this project was determined based on the need to replace the substance abuse treatment beds at Pioneer Center North.   With this scope in mind, we defined the following parameters:

In scope	Out of scope
- Clinically-managed residential substance abuse treatment services and facilities. - Need among North Sound residents. - Population characteristics that may impact how treatment facilities are used (i.e. pregnancy status, age, recidivism,	- All other behavioral health prevention or treatment services, including screenings, detox, or case management services like drug courts. - Need among PCN clients that are residents of other regions/counties. - Population characteristics not relevant to design of future treatment facilities (i.e.

	academic performance, arrests, primary residence)
• Beds needed. • Quantitative assessment of need.	• Costs of building or maintaining facilities • Qualitative assessment of need.

The outline below depicts the high-level system feedback loop that this analysis and predictive model capture for future predictions on bed needs.
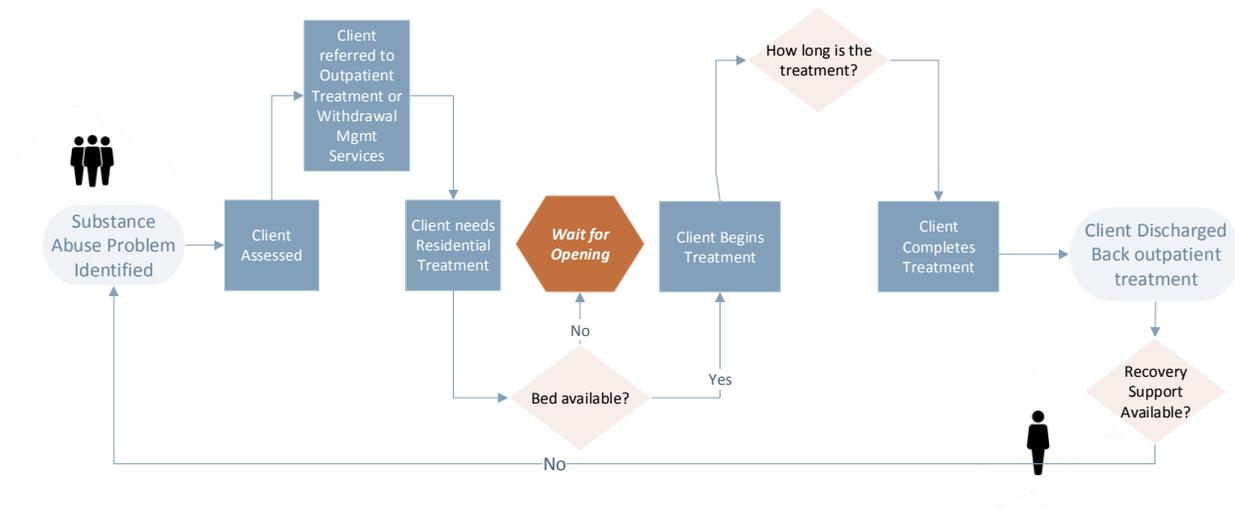
The predictive model provides a validated, data-based method for predicting how various innovative models for evidence-based, recovery-focused residential treatment models substance abuse will impact treatment beds needed by the community. The report and tool are designed to complement recent, separate qualitative and financial community needs assessments that provide important input from community members, research on innovative, evidence-based treatment models and facility utilization and costs for chronic substance use disorder treatment facilities.[1]

Report and Model Deliverables

This report will:

- Describe characteristics of the North Sound population using residential substance abuse facilities
- Describe community need trends for these facilities from 2005 to 2015
- Describe predicted beds needed for these facilities in 2018

The predictive model tool will:

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[1] See reports from Denna Vandersloot and Dale Jarvis.

- Predict North Sound community need for substance abuse residential treatment through 12/31/2020
- Predict need for adults, pregnant and post-partum women and youth
- Predict how many new people per day are expected to need substance abuse residential treatment
- Predict the expected average residential treatment beds needed per day
- Predict expected average utilization rate for the residential treatment facilities.
- Facilitate assessing whether the current facility capacity (total beds) is meeting the community's need (average beds needed)
- Determine how number of beds needed and utilization rates are impacted by:
    - Time clients are in treatment (average length of stay)
    - Reductions in readmissions/ recidivism

Report and Model Limitations

This report and accompanying predictive model are a best estimate of past and current need, as with any estimate there limitations.

This assessment and predictive model **will not**:

- Recommend specific strategies or models the community should adopt in order to reduce the need for substance abuse treatment, or to better treat substance abuse disorders.
- Determine how much it will cost to build or support required facilities or human resources.
- Predict how major policy or economic changes will impact community need.
- Predict community need for other substance abuse treatments, including detox.
- Predict community need outside of the North Sound counties (Island, San Juan, Snohomish, Skagit and Whatcom).

Part 1: Community Need

Definition of Need

This assessment focused on a specific subset of substance abuse treatment need for:

- Residents of the North Sound Region (Island, San Juan, Snohomish, Skagit and Whatcom Counties).
- Clinically Managed Residential Treatment (low, medium and high severity)
- Publically-funded populations

There are many more individuals who need treatment for substance abuse disorders than there are resources available, so current utilization is not a good indicator of actual need. It was important to account for as much of the current unmet need as realistically possible given the available data.

We determined that the ASAM Patient Placement Criteria was the best available estimate for the number of clients needing substance abuse residential treatment.[2] The following ASAM Levels correspond to these three residential treatment need:

- ASAM III.1 → Recovery House
- ASAM III.3 → Long-term Residential, and
- ASAM III.5 → Intensive Inpatient

The limitations of this definition are that it does not include any qualitative assessment from clients or frontline providers about how accurate these assessments are at identifying need. It also does not account for need that is going unassessed in communities. It does not account for how recent loss of providers conducting assessments in Island, Whatcom and Snohomish Counties has reduced the total captured need.

Methodology

Slalom built a predictive model using a TARGET extract of total monthly assessments at ASAM Levels III.1, III.3 and III.5 from all North Sound Region Counties from 1/1/2004 to 1/31/2016. Assessment counts by sub-population (adult, PPW, youth) and individual counties were frequently less than 5 per month, so data was aggregated at the month and regional levels to maintain confidentiality. Regional County Coordinators were consulted to ensure there were no significant gaps in this assessment data for these populations, in that there aren't major sub-populations missing from the TARGET assessment data. The goal was to capture a best estimate for the number of individuals needing care; although many of these individuals may not then have followed through on receiving care.

The model was then subdivided into population categories that could most benefit from separate treatment facilities: adults, pregnant and post-partum women (PPW) and youth (under 18). We used SCOPE admissions data to determine the expected number of assessments for each sub-population. The assumption was that the percent youth, adult and PPW admitted to treatment was proportional to the percent assessed.

The model's predictive reliability was tested using a training set to build the model and a holdout dataset to test the model's predictive reliability. The training set included data from 2004 to 2014 and the test-set was data from 2014 and forward.

The completed model allows the user to manipulate the following inputs. These inputs were identified because they have an important impact on the number of beds needed.

	Model Input	Input Description
1.	**Time period**	Allows the user to assess daily, annual, and seasonal needs from 1/1/2004 through 12/31/2020.
2.	**Number of community**	Allows user to see the utilization impact of different numbers of facilities for each level of care and population.

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[2] ASAM's criteria uses six dimensions to create a holistic, biopsychosocial assessment of an individual to be used for service planning and treatment across all levels of care.

	facilities	
3.	**Average length of stay**	Allows the user to test how changes to standard length of stay for each sub-population and severity level impact average daily beds needed.
4.	**Number of beds per facility**	Allows the user to manipulate average facility size (number of beds) to test impact on utilization for each level of care and population.
5.	**Percent reduction in repeat clients**	Allows the user to show impact of reductions in recidivism on average beds needed, to test future impact of ROSC approaches.

The predictive model will calculate the following outputs based on the inputs above.

	Model Output	**Output Description**
1.	**Average assessments per day**	Average number of assessments per day for each ASAM level and sub-population.
		For low daily counts, the number will be a fraction, and can be converted into assessments per month or year as needed.
2.	**Total beds**	Total number of beds per facility times number of facilities by ASAM level and sub-population. Can be used to count local or state beds available.
3.	**Average beds needed per day**	This calculation will change based on length of treatment and changes in readmissions and is separately calculated for each sub-population and ASAM level to allow for different treatment lengths and readmission changes.
4.	**Average utilization**	Average daily utilization of total beds based on total beds (#3) needed and total available (#2), for each sub-population and ASAM level.
		This number will be over 100% if capacity is too low.

The model and analysis are based on the following assumptions. In order to achieve the most accurate predictions, any of these assessments can be challenged and refined.

1. Assessments are performed uniformly over the course of the month.
2. ASAM assessment data aligns with actual community need.
3. Clients are being assessed appropriately.
4. Client need for a bed begins at day of assessment.
5. Average Length of stay is constant for each specified population.
6. Sub-population assessments are assumed to be proportional to the number of admissions (i.e. If 80% of admissions were adults, we assume 80% of the assessments were adults).

Population Characteristics

This section provides a profile of the substance abuse treatment clients NSBHO will be serving. The characteristics described are only those relevant to inform how the treatment facilities would be designed differently to better serve the community. It was determined that the following characteristics were most relevant for this purpose:

- Age – Adult or Youth (under 18)
- Pregnancy status
- Primary drug
- Repeat clients (measure of recidivism)

The defining client characteristic percentages are a summary of total SCOPE admissions data from 2004 to 2015.

Primary Drug

In the past 10 years, adults, pregnant women and youth were admitted to residential treatment services for abuse of very different substances. The primary dug abused by adults admitted to residential treatment alcohol (36%), for youth is marijuana (42%) and pregnant women is methamphetamines (28%). This may inform different community integration strategies for each population.


Primary Drug for Populations Admitted to Residential Treatment, 2004 - 2015
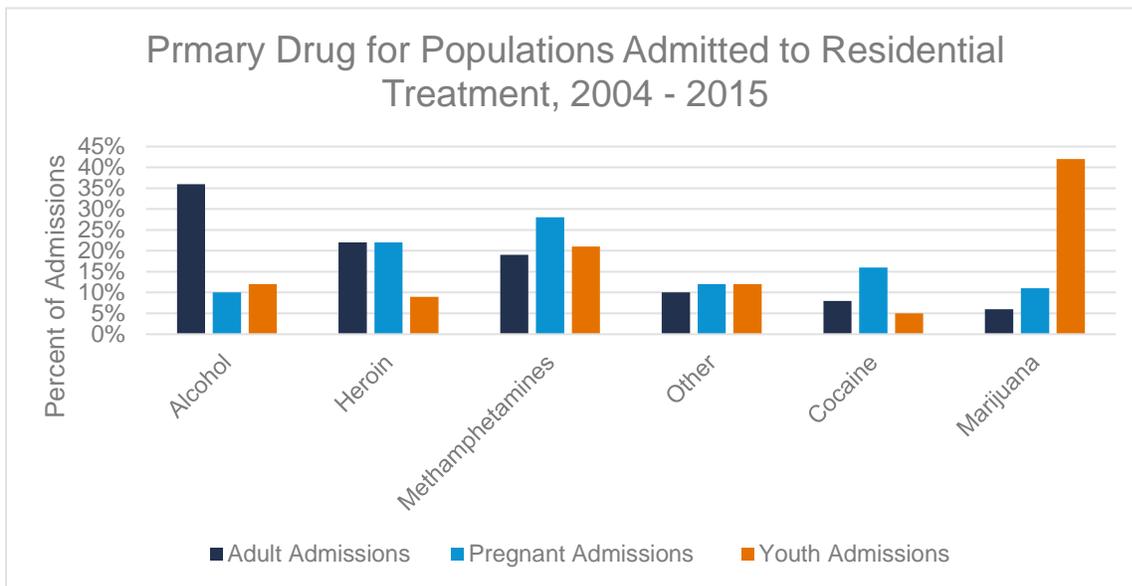
n=23,435

Primary Drug	Adult Admissions	Pregnant Admissions	Youth Admissions
Alcohol	36%	10%	12%
Heroin	22%	22%	9%
Methamphetamines	19%	28%	21%
Other	10%	12%	12%
Cocaine	8%	16%	5%

Marijuana	6%	11%	42%

Repeat Client Admissions

High rate of recidivism is a common problem among individuals admitted to substance abuse residential treatment. In the North Sound region, pregnant women (83.6%) have the highest rates of repeat admissions to residential treatment programs, followed by youth (76.2%) and then adults (72.6%). High rates of repeat admissions impacts treatment facility capacity, as it limits the number of available beds for newly assessed individuals.
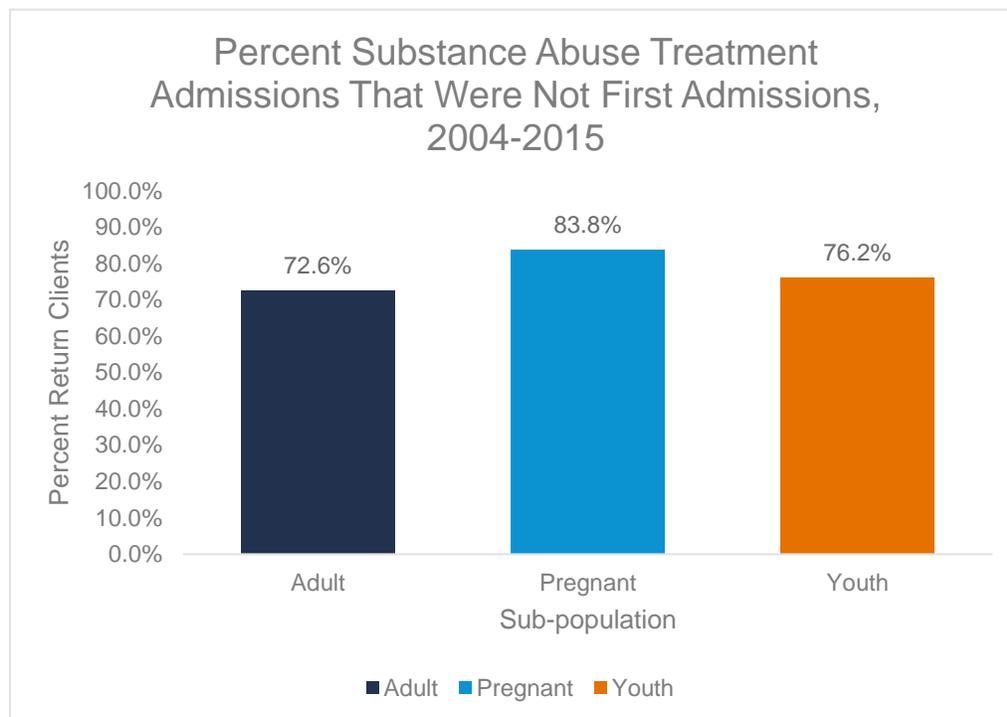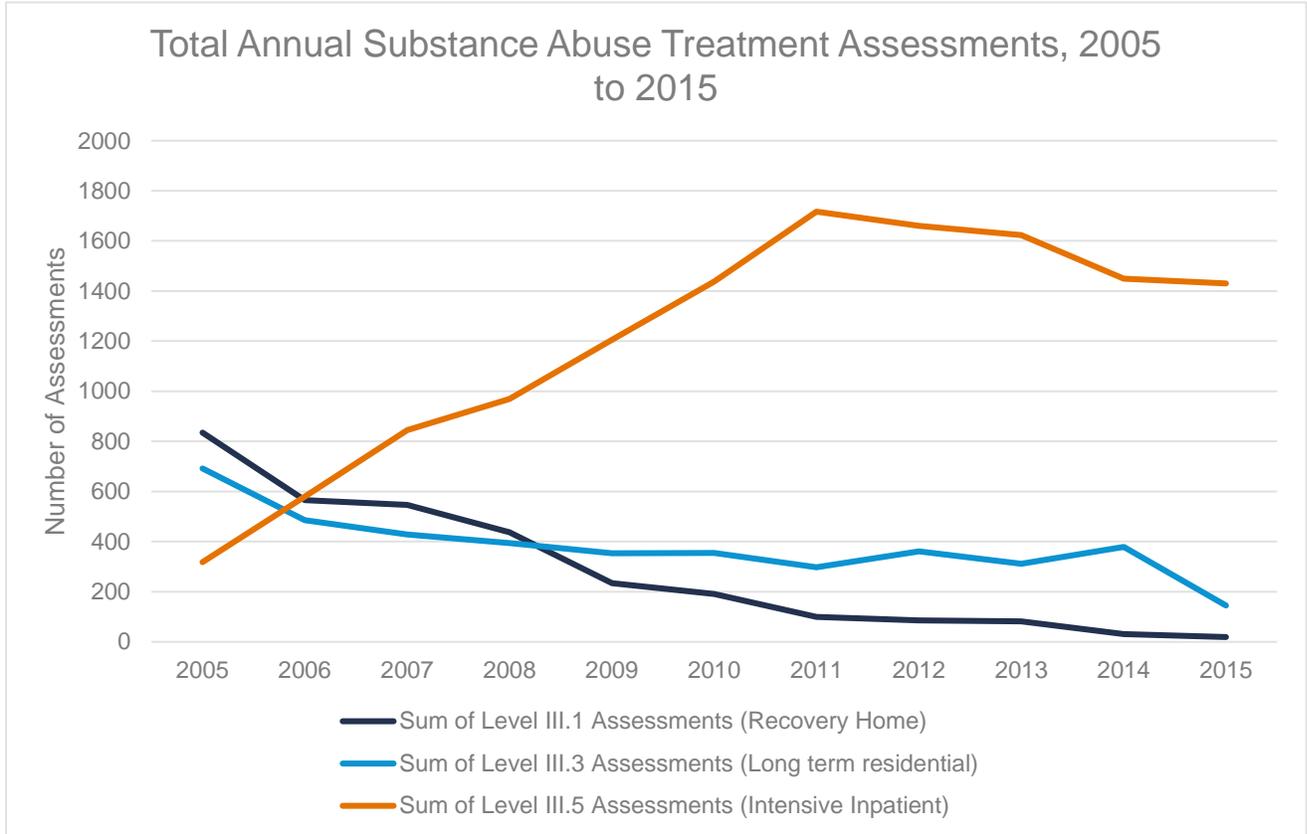

n=23,435

Community Need Trends 2005 to 2015

This section describes trends in community need for clinically managed low, medium and high-intensity substance abuse treatment beds from 2005 to 2015. Trends are based on total assessments conducted during this time period, and bed need reflects both ideal lengths of stay for each treatment level and population and high levels of repeat admissions.[3]
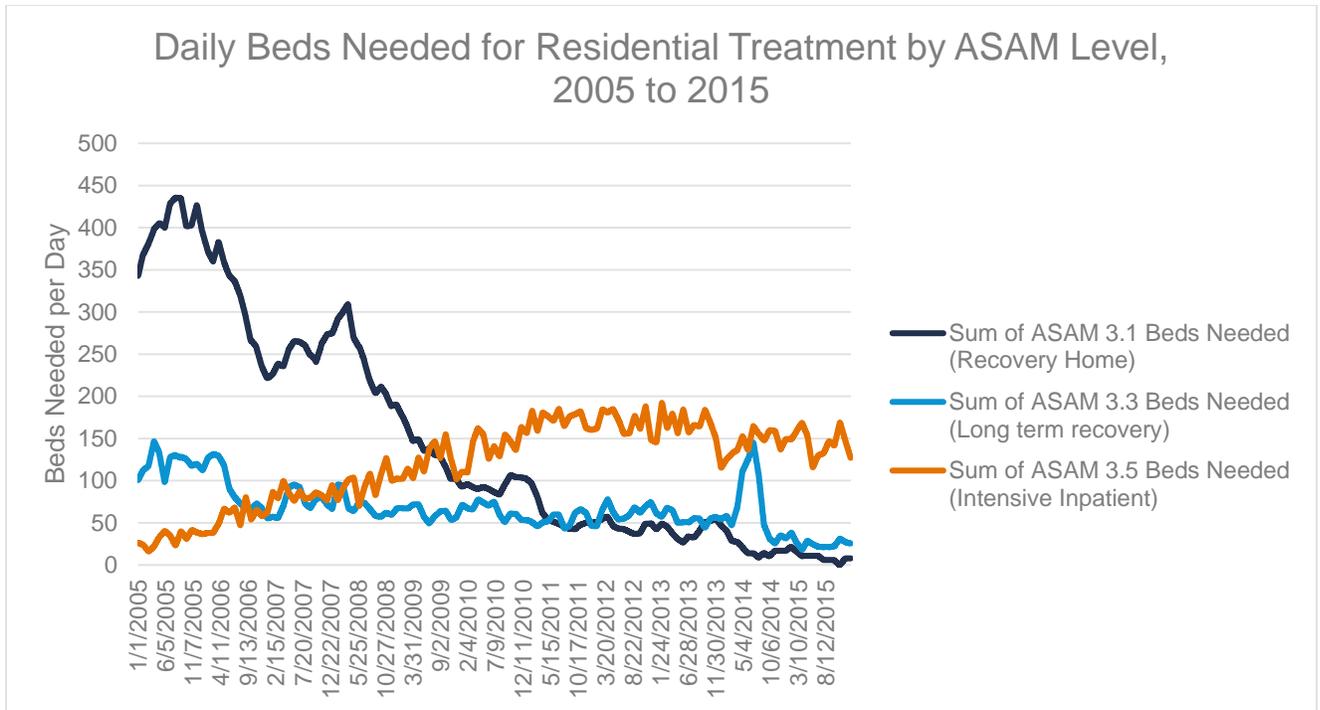
Summary, from 2005 to 2015:

- Seasonal trends show consistent peaks in spring & summer (Q2 and Q3) and low points in fall and winter (Q4 and Q1) for all treatment needs and all populations.
- Assessments showing need for **Intensive Inpatient** (IIP) **care have increased 349%**, with a peak in 2011

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[3] See appendix for population and treatment lengths of stay used.

- Assessments showing need for **Recovery Homes** (RH) **have decreased 98%**. Daily beds needed peaked in July/August 2005 at 435 beds needed per day, and in December 2015 was at 8 beds per day.
- Assessments showing need for **Long-Term Residential** (LTR) **care have decreased 79%**
- Spring 2014 saw a sharp corresponding spike in LTR and drop in IIP

Total Annual Substance Abuse Treatment Assessments, 2005 to 2015

Legend:
- Sum of Level III.1 Assessments (Recovery Home)
- Sum of Level III.3 Assessments (Long term residential)
- Sum of Level III.5 Assessments (Intensive Inpatient)

Daily Beds Needed for Residential Treatment by ASAM Level, 2005 to 2015

Adult Overall Trends 2005 to 2015

- Low-intensity Recovery Home beds (level 3.1) needed for adults per day have dropped sharply since its peak in the summer of 2005 (max ~189 beds needed per day), and reached its lowest point in fall 2015 (min ~1 bed needed every month).
- Medium-intensity Long-term Residential beds (level 3.3) needed per day have been trending downwards, with the last major spike occurring in June 2014 (~136 beds needed per day)
- Daily beds needed for high-intensity Intensive Inpatient (level 3.5) have increased over the last 10 years, with a peak in early 2013

Pregnant and Post-Partum Women (PPW) Overall Trends 2005 to 2015

- While there are many fewer PPW assessments per day for all treatment levels, the recommended length of treatment is longer, which increases the total beds needed by this group.
- Level 3.3 (Long-term Residential) assessments reached high points in 2005 and in 2014, but overall is trending downwards.
- Level 3.1 (Residential Home) need has consistently been very low and downward trending over the past 10 years.

Youth Overall Trends 2005 to 2015

- Youth have consistently higher needs for low intensity, clinically-managed substance abuse treatment (level 3.1), although need has been trending steeply downwards over the past ten years.
- Residential Home (Level 3.1) need peaked in summer 2005 at ~240 beds needed per day, and was at its lowest in 2015 at less than 1 needed per day.

- Youth need for Intensive Inpatient treatment (level 3.5) has trended upwards over the past ten years, reaching a peak of ~23 beds needed per day in Jan 2013.
- Youth need for Long-term Residential treatment (level 3.3) has consistently been low, dropping from about 4 annually in 2005 to less than 1 in 2015.

Part 2: Future Need Predictions

This section estimates how many beds will be needed to meet community need for residential treatment care in 2018. "Beds needed" reflects how many patients need care each day, and can help stakeholders estimate and evaluate the costs and impacts of providing different levels of treatment.

Keep in mind, these bed need predictions reflect two important factors that if changed, will significantly change the beds needed per day: length of stay and percent readmissions. Part of the reason for higher PPW bed-need is that the ideal length of stay is much longer (180 days) for each level of care than other populations. These estimates are assuming no change in readmissions and ideal lengths of stay unique to each population and level of care.

Question 1- How many beds are needed to meet the total community need for substance abuse residential treatment?

The first scenario estimates how many beds North Sound will need available per day to meet the total community need for residential substance abuse treatment according to the predictive model. This estimate assumes no changes to the standard expected length of treatment, and assumes to changes to current readmission rates.[4]

Overall Summary of Average Daily Need[5]:

- An average of 145 Level 3.5/Intensive Inpatient beds needed per day with the majority for voluntary adult patients (95 beds).
- An average of 32 Level 3.3/Long Term Residential beds per day for, with the majority (22 beds) for involuntary adults.
- An average of 18 Level 3.1/Residential Home beds per day, with a close to even split between adults (8 beds) and youth (10 beds).
- Expect to have low new daily need (less than 1) for:
  - Youth Level 3.3 beds
  - Pregnant and Post-Partum Women (PPW) Level 3.1 beds
  - Level 3.1 and 3.5 beds for involuntary adults
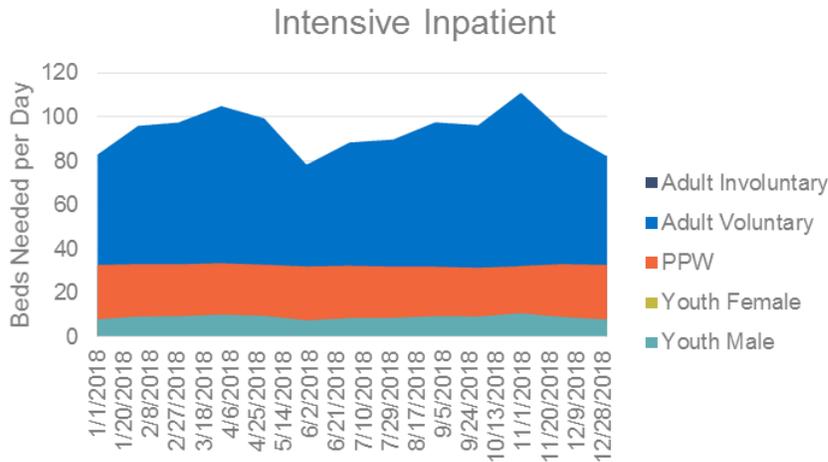
Average Daily Beds Needed (2018 Prediction)

Sub-Population	Level 3.1 Beds	Level 3.3 Beds	Level 3.5 Beds
Adult total	**8**	**28**	**96**
Involuntary	*>1*	*22*	*1*
Voluntary	*7*	*6*	*95*
PPW	**>1**	**4**	**33**

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[4] See Appendix for ideal expected length of stay by population.
[5] See Appendix Tab 2

Youth Total	**10**	**>1**	**17**
Girls	6	*>1*	7
Boys	4	*>1*	9
Grand Total	**18**	**32**	**145**

Level 3.5/Intensive Inpatient Expected Seasonal Bed Need Predictions, 2018

- Average daily bed need expected to range from 126-164, with season fluctuations most prevalent in the voluntary adult population.
- Expected peaks in March and November
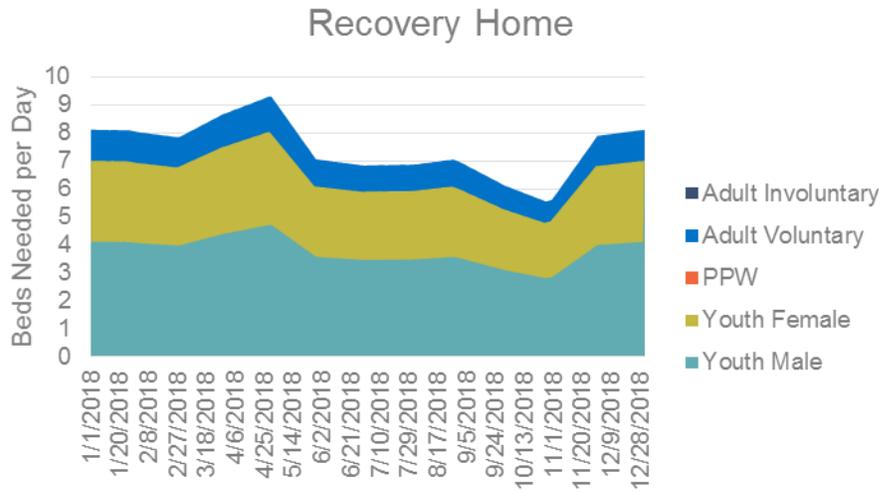- Expected low point in May - June

Level 3.3/Long-term Residential Predictions, 2018
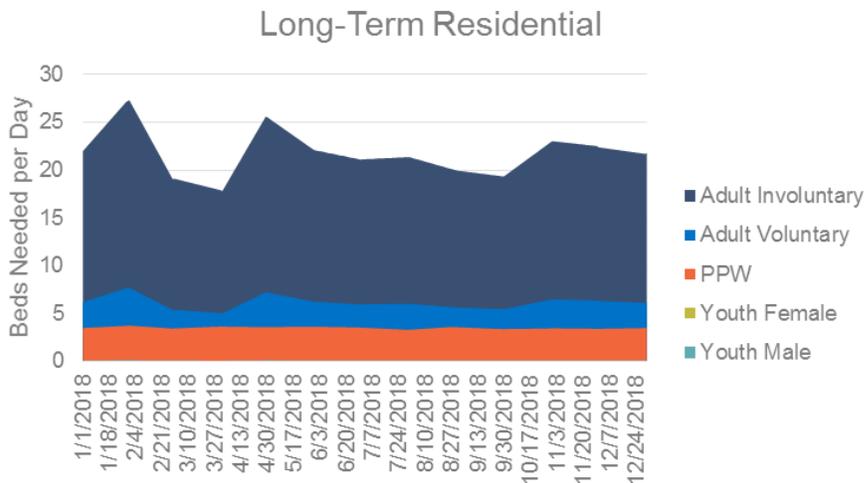
- Average daily bed need expected to range from 27-39, with season fluctuations most prevalent in the adult populations
- Expected peaks in late January and early May

- Expected low point March – April
- Average of 5 beds needed **per month** for youth (2 girls, 3 boys).

Level 3.1/Recovery Home Predictions, 2018

Recovery Home

- Average daily bed need expected to range from 14-23.
- Expected peaks in late April – early May
- Expected low point in November

2018 Estimated Beds Needed by Facility Type and Population

Average Beds Needed Per Day
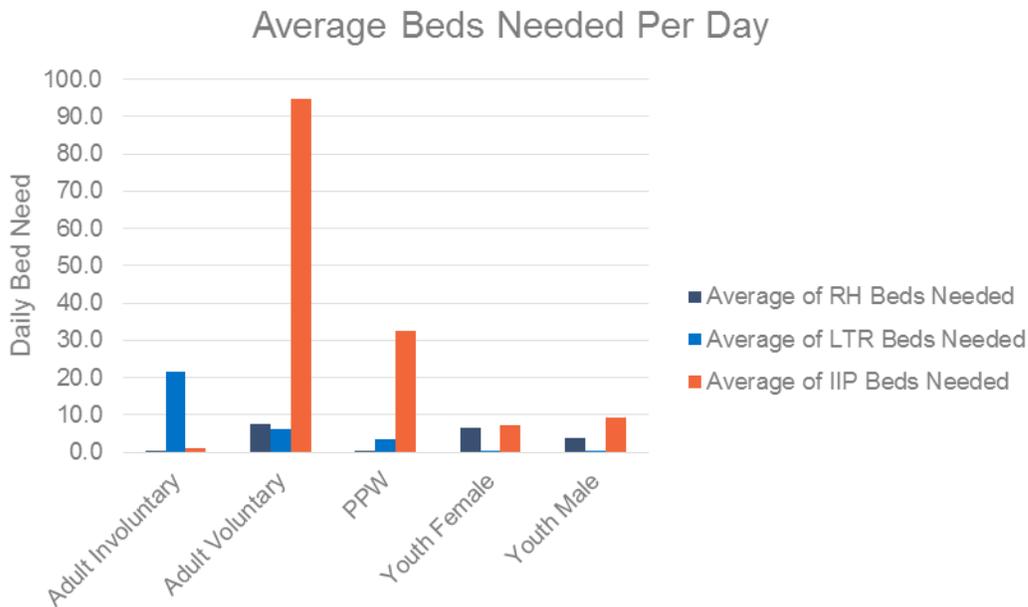
Average Beds Needed per Month, for low daily count populations

Treatment	Sub-population	Average Beds Needed per Month
Recovery Home	Adult Involuntary	9
	PPW	12
Long-Term Residential	Youth Female	2
	Youth Male	3

Question 2 – How many beds are needed to optimally balance the community's need and the best possible facility utilization rate?

The bed estimates for Question one provide the range and average daily/monthly need using relatively optimistic assumptions that a) there is budget to provide the maximum number of beds needed, b) clients are staying for ideal lengths of stay, and c) there aren't unexpected reasons for a large increase in need.

There are several reasons why NSBHO would want to provide more or less beds than these averages, and the table below elaborates.

Risk	Impact	Mitigation
• Need for care increases, unexpectedly or seasonally • Clients require longer lengths of treatment than planned	• Treatment wait lists increase • Costs of delaying treatment for the community & individual	Provide resources for more than the average daily bed need Provide resources for alternative treatment or support during wait, which could include social workers, community health workers, or care managers
• There isn't enough budget to provide beds for the total community need	• The likelihood of some populations receiving needed care is lower • The outcome of some populations delaying care is more serious	Prioritize over-resourcing some care facilities or sub-populations over others

| • Need for care decreases, unexpectedly or seasonally • Clients stay shorter lengths of treatment than estimated	• If beds are available…Treatment beds are underutilized • Costs of maintaining underutilized staff and facilities	Provider fewer beds than average daily bed need Provide resources for flexible resources like recovery coaches that could be more adaptable than facility beds.

Question 3 – How will reducing readmissions impact beds needed?

Current readmission and recidivism levels among clients receiving residential substance abuse treatment are high across the board. Repeat admissions account for 73 percent if adult, 76 percent of youth and 84 percent of PPW admissions to residential substance abuse treatment. The estimates below project how bed need will change with different reductions in recidivism across severity levels and populations.

Summary:

- Beds needed will decrease with as little as a 5% reduction in repeat clients for both IIP and LTR facilities. A 10 percent reduction in RH repeat clients will reduce beds needed
- Reducing recidivism will have the biggest impact on IIP, dropping average beds needed per day by 36% with a 50% reduction in repeat clients
- Reducing recidivism can reduce need for LTR by 39%
- Reductions in recidivism can reduce RH beds needed, but the effects won't be seen until at least a 10% reduction is achieved.
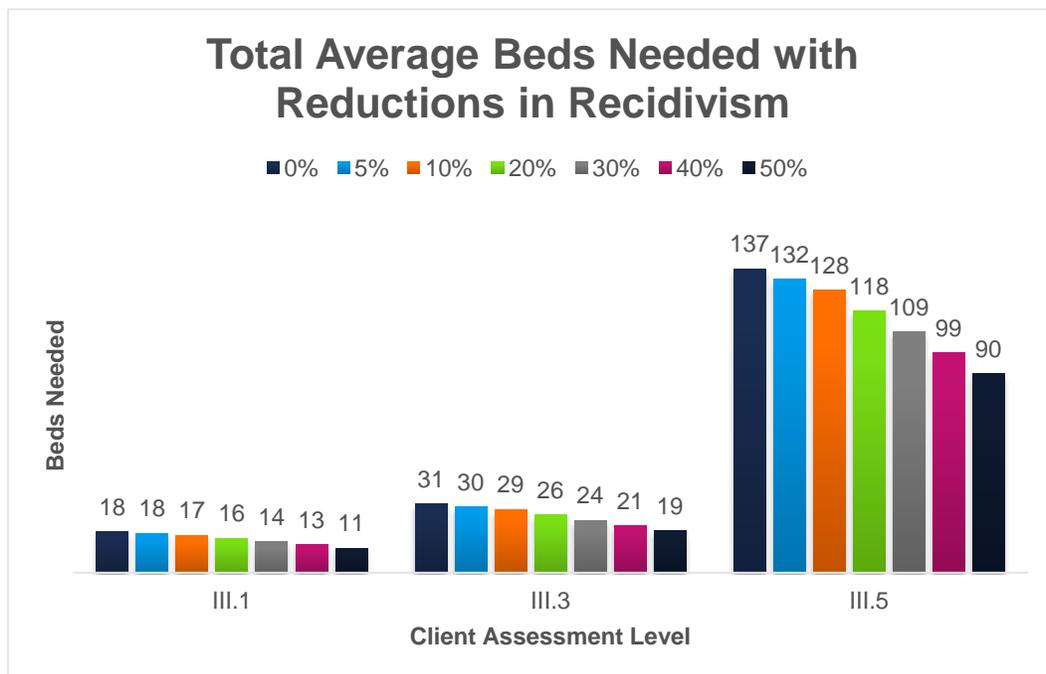
Part 3: Summary & Recommendations

This analysis is only part of the bigger picture that North Sound must consider in determining the optimum resources for treating and managing substance abuse disorders in the community. Recognizing that the appropriate treatment resources may change over time, these are our conclusions and recommendations based on the current analysis.

Facilities Overall,

- o Stronger investment in reducing readmissions through a recovery-focused approach, improved discharge planning, or flexible resources like recovery coaches has great potential to reduce overall need for residential beds.
- o Bed need for PPW will be higher due to higher recommended lengths of stay, and could potentially be managed by providing alternative treatment approaches or resources.

Level 3.5/ Intensive Inpatient resources

- o Community assessments for the highest intensity, shortest duration (30 days) type of residential care have increased 349% from 2005 to 2015, and continues to be the residential substance abuse treatment most needed in the future.
- o In 2018, the predicted need throughout the year ranges from 126 to 164 total beds per day, averaging 145 beds per day, with peaks in March and November, and low points May to June.
- o The majority of the beds at this level of care will be needed for voluntary adult patients (66%), followed by pregnant and post-partum women (23%), and then youth (12%).
- o Because the community has more assessments at this level than all others, these facilities may be your best opportunity for economies of scale (larger facilities) OR for multiple, smaller facilities spread across the region. If investing in multiple, smaller facilities, consider establishing a collaborative learning network for providers across sites so that providers can benefit from best practices and community support while treating difficult populations.

Level 3.3/ Long-term Residential resources

- o Community assessments for medium/high intensity, medium duration (60 day) residential care have decreased 79% from 2005 to 2015.
- o In 2018, the predicted need through the year ranges from 27 to 39 total beds per day, with an average of 32 beds per day. Peaks are expected in late January and early May, and low points in late March to April.
- o The majority of care at this level can be planned for involuntary adults (69%), followed by voluntary adults (19%).
- o Pregnant and post-partum women will account for approximately 13% of the total beds needed, assuming an ideal treatment stay of 180 days.
- o Youth need for this level of care has consistently been low since 2005, and is expected to be about 5 beds per month (2 girls, 3 boys).

Level 3.1/Recovery Home resources

- o Community assessments for the lowest intensity, longest duration (180 day) residential care have decreased 98% from 2005 to 2015. The longer length of stay increases the number of beds needed over time.

- o In 2018, the predicted need through the year ranges from 14 to 23 total beds per day, with an average of 18 beds per day. Peaks are expected in late April and early May, and low points in November.
- o Need for this level of care is closely split between youth (44%) and voluntary adults (56%).
- o PPW need for this level of care is relatively low, but estimated to be about 12 beds needed per month.

Making the pitch for future resources

The model informing these predictions is not static. It can and should be adjusted as NSBHO gains more refined understanding of the populations served. The model will gain greater accuracy as the assumptions and data behind them are refined over time. Think about how investments in other areas impact need for these residential care services (i.e. supportive housing or better discharge planning). The decision to provide more or fewer beds than the average estimated daily need should consider factors like:

- Total cost of treating someone (financial, societal, individual)
- Total cost of not treating someone (financial, societal, individual)
- Economies of scale for building and maintaining facilities

Some questions that could help quantify and relate the community impact of not treating people could include:

- Could dollars used to treat people multiple times be redirected into better management or prevention, or into flexible resources (i.e. recovery coaches)?
- Could delaying treatment impact the prison population? Have unaccounted social and human service impacts?
- Could level 1 assessments become more serious without treatment leading to more costly hospitalizations?

Root Cause Analysis. To take these predictions to the next level we recommend further review of past trends to uncover important root causes for major trends seen. For example, what caused the drops in 2006 and spikes in 2008 and 2014, and are these things that you can influence in the future, or use to better plan for the future? This can then inform a more sophisticated prediction for future need, including potential predictors of need related to economy, resource availability, and other out of scope factors.

Appendix

Ideal Length of Stay

Table 1. Ideal Length of Stay for Substance Abuse Residential Treatment, by sub-population

Ideal Length of Treatment (days)

|	**Adult**	**Youth**	**PPW**
Level 3.1 – Recovery Home	Up to 180	Up to 180	180
Level 3.3- Long-term Residential	Up to 60	Up to 60	180
Level 3.5- Intensive Inpatient	Up to 30	Up to 30	180

Adult Summary Charts

Chart A: Adult Annual Assessments for Substance Abuse Residential Treatment, 2005-2015

Chart B: Daily Beds Needed for Adult Residential Treatment by ASAM Level, 2005-2015[6]

Chart A: Adult Annual Assessments for Residential Treatment, 2005-2015

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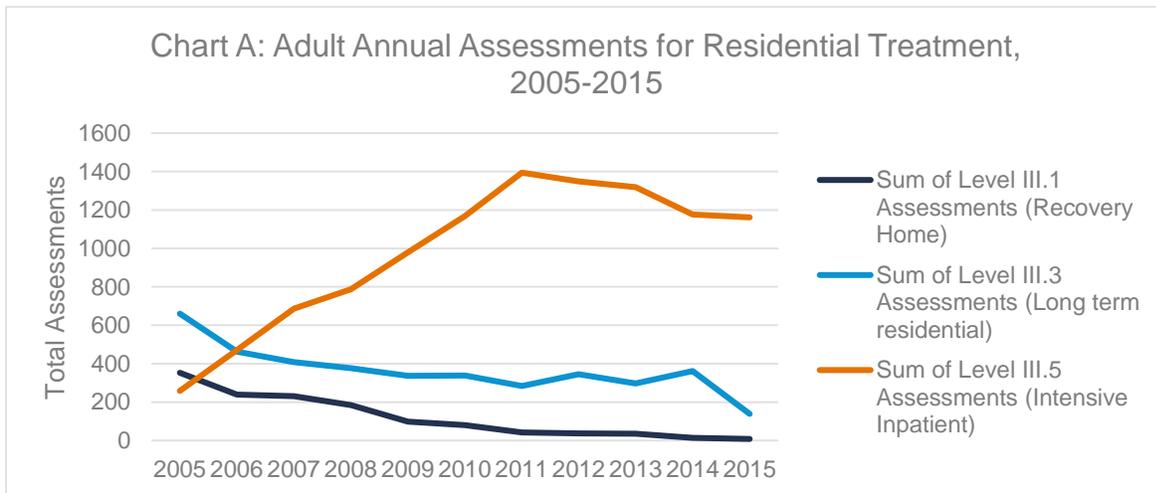
[6] Assuming the following ideal lengths of treatment: RH (180 days), LTR (60 days), IIP (30 days)

Chart B: Daily Beds Needed for **Adult** Residential Treatment by ASAM Level, 2005-2015*
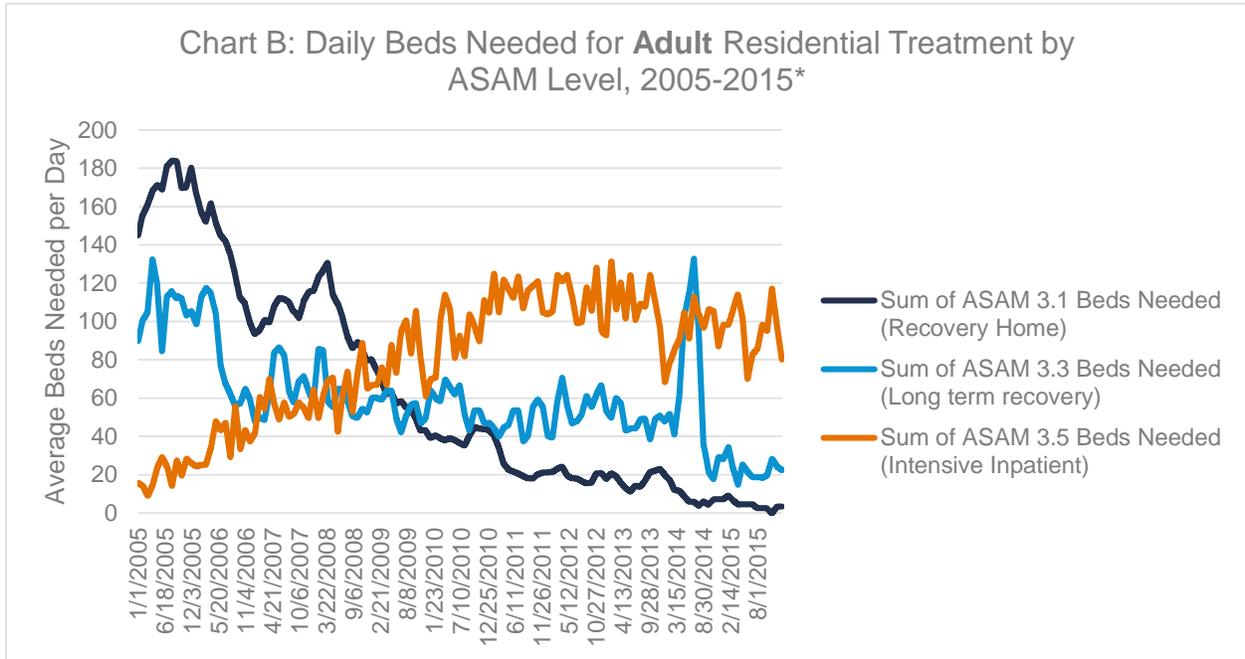
*Assuming ideal treatment length

PPW Summary Charts

Chart C: Pregnant and Post-Partum Women Assessments for Substance Abuse Residential Treatment, 2005-2015

Chart D: Daily Beds Needed for Pregnant and Post-Partum Women Residential Treatment by ASAM Level, 2005-2015[7]

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[7] Assuming 180 day length of treatment for all levels

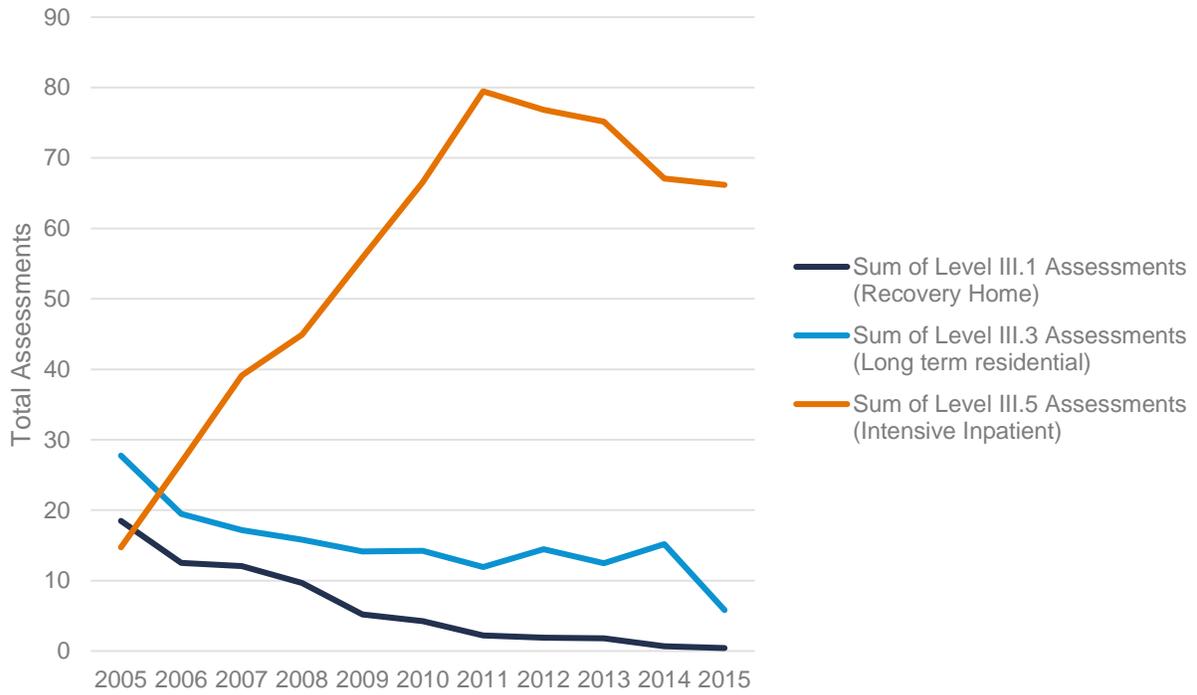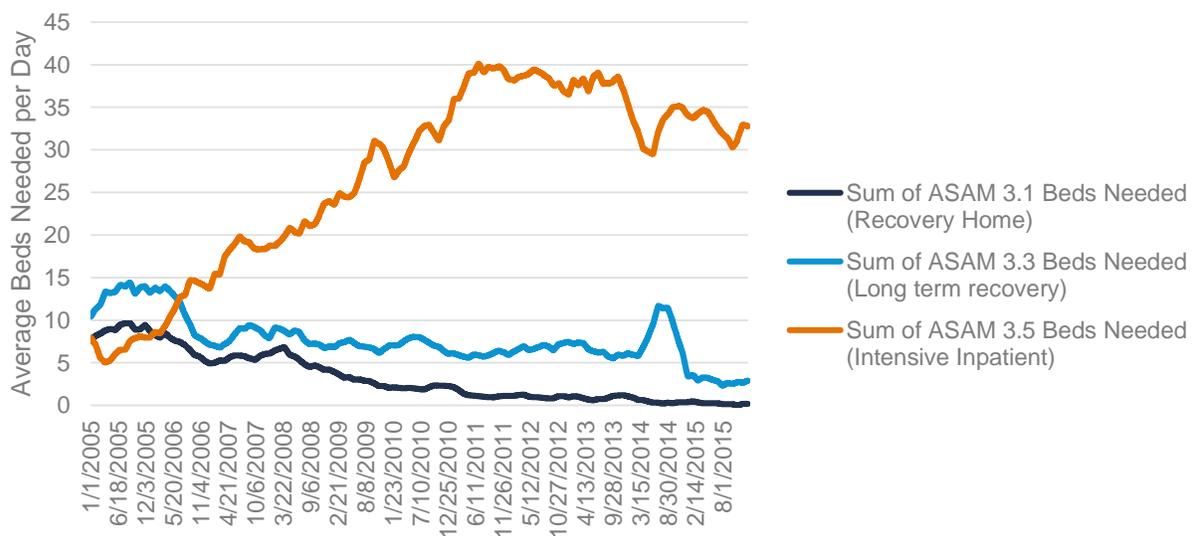**Chart C: PPW Annual Assessments for Residential Treatment, 2005-2015**

Legend:
- Sum of Level III.1 Assessments (Recovery Home)
- Sum of Level III.3 Assessments (Long term residential)
- Sum of Level III.5 Assessments (Intensive Inpatient)

Chart D: Daily Beds Needed for PPW Residential Treatment by ASAM Level, 2005-2015*

Legend:
- Sum of ASAM 3.1 Beds Needed (Recovery Home)
- Sum of ASAM 3.3 Beds Needed (Long term recovery)
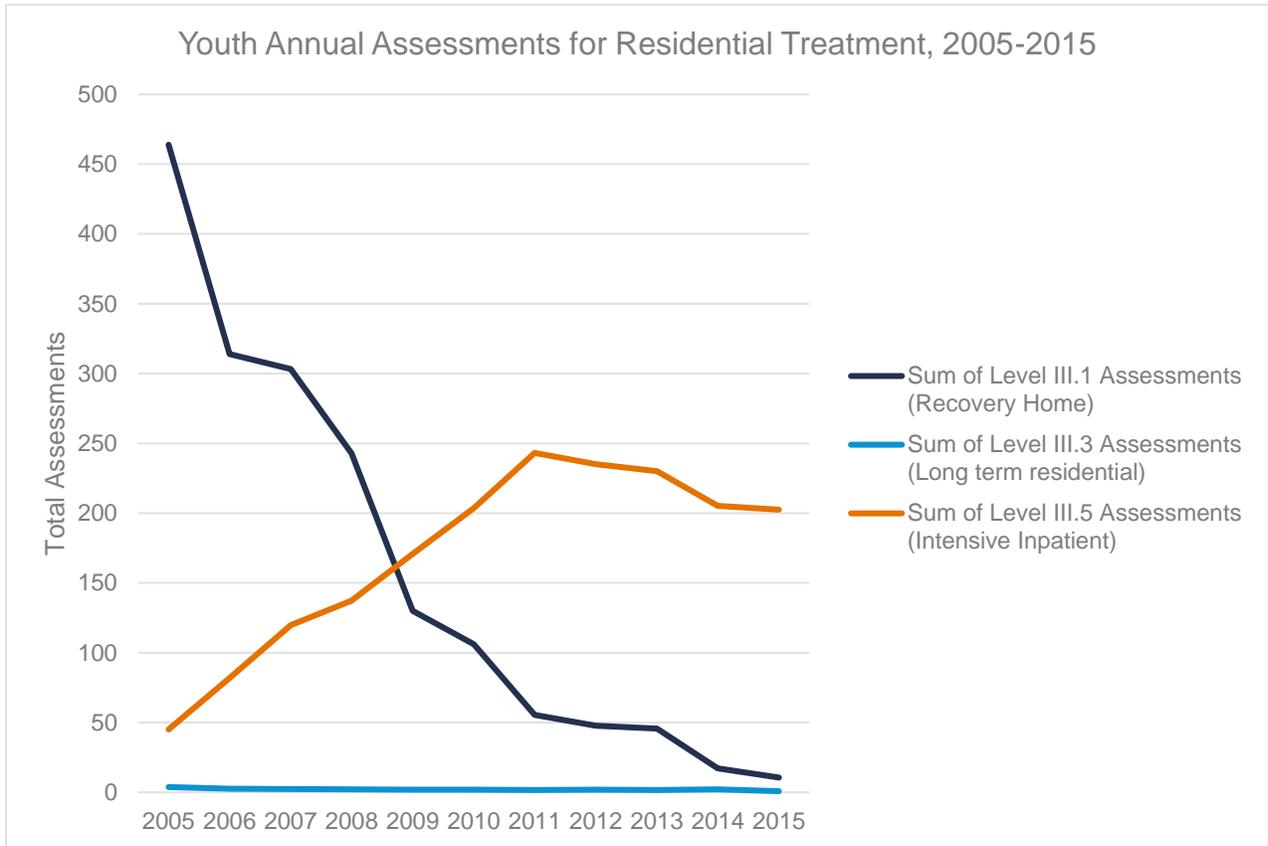- Sum of ASAM 3.5 Beds Needed (Intensive Inpatient)
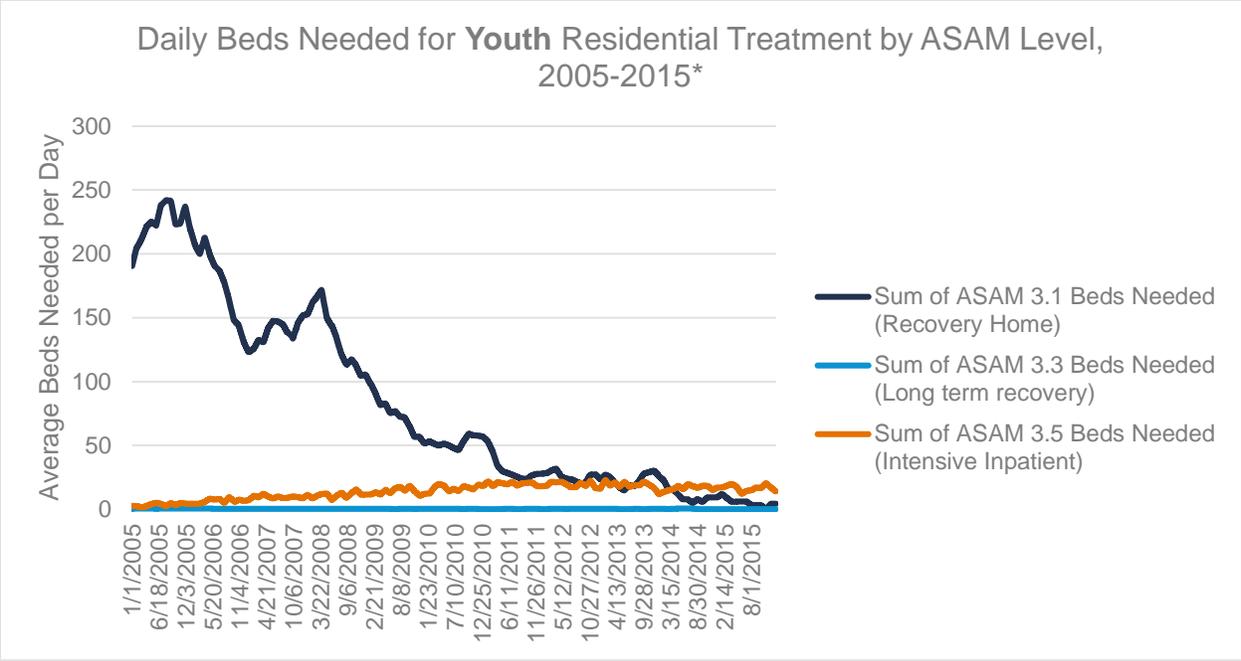
*Assuming ideal treatment length

Youth Summary Charts

Chart E: Youth Assessments for Substance Abuse Residential Treatment, 2005-2015

Chart F: Daily Beds Needed for Youth Residential Treatment by ASAM Level, 2005-2015[8]

Youth Annual Assessments for Residential Treatment, 2005-2015

Daily Beds Needed for **Youth** Residential Treatment by ASAM Level, 2005-2015*

*Assuming ideal treatment length