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ASSISTANT SECRETARY FOR
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**OFFICE OF BEHAVIORAL HEALTH,
DISABILITY, AND AGING POLICY**

Developing a Database of SUD Treatment Needs: Final Report

Prepared for
the Office of the Assistant Secretary for Planning and Evaluation (ASPE)
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DEVELOPING A DATABASE OF SUD TREATMENT NEEDS: FINAL REPORT

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INTRODUCTION

Policymakers routinely conduct substance use disorder (SUD) needs assessments to help determine whether SUD treatment systems are adequately meeting the needs of their populations and to pinpoint gaps in their treatment systems (Human Services Research Institute, 2019). A 2019 review of SUD needs assessment methodologies, conducted by the U.S. Department of Health and Human Services (HHS), Office of the Assistant Secretary for Planning and Evaluation (ASPE) and the Health Services Research Institute, found that SUD prevalence and utilization data, along with qualitative information obtained from focus groups and stakeholder interviews, are the main source of information used in needs assessments. A limitation of using SUD prevalence data for capacity planning is that the vast majority of individuals with a SUD do not believe they need formal SUD treatment (SAMHSA, 2022). Additionally, a challenge with using utilization information is that it misses individuals who sought SUD treatment but were unable to access it. Federal and state programs also analyze the adequacy of their treatment capacity using time and distance standards, patient-to-provider population ratios, and wait-time (Richmond, 2022; Zhu et al., 2022). These approaches also have strengths and limitations.

A 2020 ASPE/RTI International study examined the feasibility of using SUD patient intake assessment data as an additional source of information for treatment planning (Richardson et al., 2020). Patients are often assessed at the beginning of SUD treatment as part of the treatment planning process and to determine the most appropriate level of care (LOC), such as whether they need care in residential settings or can be safely treated in outpatient settings. One of the most commonly used LOC assessment tools is the American Society of Addiction Medicine's (ASAM's) assessment criteria, *The ASAM Criteria*[®] (3rd ed.; Mee-Lee et al., 2013). ASAM's LOC criteria were originally developed in response to pressure from payers to justify long lengths of stay in SUD residential and inpatient programs. The third edition of *The ASAM Criteria* emphasizes that determining the appropriate LOC for a patient entering SUD treatment requires not only an assessment of the patient's substance use, but also a comprehensive biopsychosocial assessment that considers the patient's medical health, mental health, and social needs. *The ASAM Criteria* includes a table illustrating the most appropriate LOC given different biopsychosocial characteristics and risk profiles. ASAM also developed a software tool that fields specific interview assessment questions and then recommends an LOC based on the patient's answers and the built-in algorithm. Both states and counties can use the software tool. The ASAM assessment criteria have been shown to be reliable and valid and to lead to better outcomes than usual approaches to LOC decisions (Mark et al., 2021).

The use of a standard assessment to determine the appropriate LOC gained traction under the HHS Centers for Medicare & Medicaid Services (CMS) Medicaid Section 1115 SUD Demonstration. The demonstration offers states flexibility in paying for treatment in larger residential and inpatient SUD settings than would normally be allowed under Medicaid's Institute of Mental Disease exclusion (i.e., more than 16 beds). However, CMS also required, as part of the demonstration, that states use a nationally recognized LOC assessment tool, such as ASAM's, to ensure that residential and inpatient settings were being used appropriately. As of May 2023, approximately 33 states were participating in the Medicaid 1115 SUD Demonstration.

A study conducted by ASPE and RTI concluded that patient assessment data might be a rich, but currently untapped, source of information for SUD capacity planning (Richardson et al., 2020). States might be able to link their patient LOC assessment data with their SUD utilization data to determine how many patients need each LOC and whether those patients are receiving that LOC or there are gaps between assessed need and received care, which might point to capacity gaps.

In October 2022, ASPE contracted with RTI to test this idea and determine whether SUD treatment needs, specialty addiction treatment services use, and gaps could be identified by linking LOC assessment data with SUD service utilization data.

Specifically, this project aimed to answer the following questions:

- What is the distribution of SUD treatment need by LOC among patients who undergo an intake assessment at a specialty SUD program?
- How does the distribution of SUD treatment need by LOC correspond to treatment receipt by LOC?
- Can this information be used to identify gaps in care and plan for treatment and workforce capacity needs?

This report describes the data received from four states that collected LOC assessment data and the process for linking the LOC assessment data with SUD utilization data. It also summarizes findings across the states and concludes by discussing how LOC assessment could be used to identify treatment gaps and help with treatment and workforce capacity planning.

Methods

As a first step in the project, building on previous work, RTI identified and recruited states with SUD treatment needs assessment data that could be linked to SUD utilization data. After contacting a number of states, RTI identified and recruited four states with robust LOC assessment data that could be linked to utilization data to participate in the study: California, Iowa, New York, and Washington.

Originally, the project envisioned that states would send RTI their LOC assessment and SUD utilization data and RTI would link and analyze the data. However, states indicated that it would be difficult, if not impossible, to provide RTI with the personal identifiers needed to conduct the linkages because of privacy concerns. Therefore, using pre-specified analysis plans and table shells, RTI worked with states to link their data and populate table shells. States provided a description of their linkage and analytic methods through documents, email correspondence, and phone calls.

State Substance Use Disorder Assessment Data

As shown in **Table 1**, California, Iowa, and Washington used an ASAM criteria-based assessment. In contrast, New York used its own SUD LOC assessment tool called the *Level of Care for Alcohol and Drug Treatment Referral* (LOCADTR). California also used a brief screening assessment when individuals called a service hotline seeking SUD treatment. New York was the first state to start routinely conducting and collecting LOC assessments (beginning in 2015), and Iowa was the last state among the four states participating in the project (beginning implementation in 2021). California, Iowa, and New York required that all their SUD-licensed providers implement the assessment and report the results to the state. Washington required that SUD-licensed providers with a contract with the state to deliver SUD services collect assessment data. Below we describe in more detail the processes that each state uses to collect SUD LOC assessment information.

Table 1. Information on State SUD Assessment Data

State	Assessment Name	Date First Implemented	State Agency Responsible for Data Collection	Provider Organizations Required to Use Assessments
California	ASAM	2017	Department of Health Care Services; University of California, Los Angeles, Integrated Substance Abuse Programs; and counties	SUD-licensed providers in California counties participating in 1115 demonstration
Iowa	ASAM	2021	Iowa Department of Public Health	All SUD-licensed providers
New York	LOCADTR	2015	Office of Addiction Services and Supports	All SUD-licensed providers
Washington	ASAM	2016	Health Care Authority/Division of Behavioral Health and Recovery	All licensed behavioral health agency providers contracted with Washington to provide behavioral health services are required to submit supplemental data, including the ASAM

California. In 2015, CMS approved California’s Drug Medi-Cal Organized Delivery System 1115 demonstration waiver (DMC-ODS waiver) that aimed to improve SUD service delivery. California counties implemented ASAM criteria-based assessments in their SUD specialty facilities as a requirement of their Medicaid 1115 SUD Demonstration. California has a county-based SUD system, and each county decided whether and when to participate in the demonstration. The first counties began participating in the demonstration and using ASAM criteria-based assessments in 2017. By 2020, almost two-thirds (37 of 58) of California counties had implemented ASAM criteria as part of the demonstration. These 37 counties contain 95.9% of California’s population (Urada et al., 2021). In most California counties, county governments developed their own intake LOC assessments and interpretations of the ASAM LOC criteria (Padwa et al., 2022). In 2022, the University of California, Los Angeles and ASAM developed a “paper-based” version of the ASAM intake assessment (ASAM, 2022). California uses a brief LOC screening tool that is conducted by the county or county hotline and not the SUD programs. Not all patients receive a brief screening assessment, and a large portion of individuals who receive the brief assessment do not subsequently begin SUD treatment. California requires that ASAM assessments are conducted at intake, at 6 months, and when transitioning to another LOC.

New York. New York developed and implemented its own standardized patient placement tool, the LOCADTR. Development of the LOCADTR began in 2012, and the web-based tool was implemented statewide in 2015. New York conducted several studies to assess the reliability and validity of the LOCADTR. The research demonstrated that the LOCADTR had good interrater reliability, content-related validity, and predictive validity in determining the most appropriate LOC for individuals seeking addiction treatment (Neighbors et al., 2021; O’Grady et al., 2018). **Appendix 1** provides a crosswalk between New York’s LOCs and ASAM’s LOC and describes which LOCs were included in each tool (outpatient, residential/inpatient, detox/crisis, opioid treatment program [OTP]/outpatient with medication-assisted treatment [MAT]).

Iowa. Iowa implemented the Iowa Behavioral Health Reporting System (IBHRS) in July 2021. It is an integrated reporting system for SUD treatment data for licensed SUD providers. The system requires that all licensed SUD providers conduct an ASAM assessment at intake.

Washington. Washington State has required ASAM assessments (i.e., ASAM Placement supplemental data transactions) as part of the current Behavioral Health Data System since the system’s inception in April 2021. Before that, ASAM placement data were collected as part of the prior data system, called TARGET. Washington had experienced wide variation in the degree of submissions of LOC assessments since April 2016, in part due to the movement toward fully integrated managed care. However, in 2021, Washington issued a more explicit requirement that behavioral health providers submit ASAM assessment data, as well as treatment admission and discharge data.

Table 2 shows the ASAM LOCs that California, Iowa, and Washington include in their assessment data. Iowa includes all ASAM levels except levels 2-WM [withdrawal management], 3.2-WM, and OTPs. California includes all except 3.7-WM. Washington and California include OTP as an LOC even though the ASAM criteria did not explicitly call out an OTP LOC.

Table 2. ASAM LOCs Captured by California, Iowa, and Washington																
State	ASAM LOC															
	0	0.5	1	1-WM ^a	2-WM	2.1	2.5	3.1	3.2-WM	3.3	3.5	3.7	3.7-WM	4	4-WM	OTP ^b
California	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•
Iowa	•	•	•	•		•	•	•			•	•	•	•	•	
Washington	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

NOTES:
a. Not a required element.
b. Only includes zip code and county.

Table 3 presents the data elements included in each state’s assessment data.

Table 3. Elements Included in Assessment Data				
Element	California	Iowa	New York	Washington
Date of assessment	•	•	•	•
Client unique ID		•	• ^a	•
Client Medicaid ID	•		• ^a	
Client first name	•	•	•	
Client last name	•	•	•	
Client date of birth	•	•	•	
Client Social Security Number			•	
Client physical address	• ^b	•		
Client phone number		•		
Client email address		•		
Gender	•	•	•	
Race/ethnicity		•		
Sexual orientation		•		
Type of assessment	•		•	
Recommended level of care	•	•	•	•
Additional recommended level of care	•			

Table 3 (continued)				
Element	California	Iowa	New York	Washington
Actual referred level of care	•	•	•	
Override	•	•	•	
Reason for difference in recommended and actual level of care	•	•	•	
Provider (facility) ID (National Provider Identifier)		•	•	•
Substance Use Disorder Program ID		•		

NOTES:

- a. Not a required element.
- b. Only includes zip code and county.

California. California collects information on the date of the assessment, assessment type (brief screen, assessment, follow-up assessment), indicated (recommended) LOC, actual (referred) placement decisions, the reason for the difference between indicated and actual LOCs (if any), and the reason for delays in placement (if any). This report utilizes both the brief and full assessments separately as noted in the text.

California’s reasons for override are clinical judgment, lack of insurance/payment source, legal issues, LOC not available, managed care refusal, patient preference, geographic accessibility, family responsibility, language, used two residential stays in a year already, and other.¹

California’s assessment data contain the following identifying information that can be used to link the assessments’ SUD utilization information: assessment date, client Medicaid identifier, client first name, client last name, client date of birth (DOB), client address, and client gender.

New York. New York’s LOCADTR tool collects the recommended LOC, actual LOC referred, whether the LOC recommended was different from the LOC referred (i.e., whether the recommended LOC was overridden), and the reason for the differences between the recommended and referred LOCs (i.e., reason for override).

New York also collects the following information that can be used to link assessments to SUD utilization data: assessment date and the client’s name, gender, Social Security Number (SSN), DOB, Medicaid ID, and unique client ID number. The client’s unique ID number is assigned by the program provider for internal tracking purposes. The client’s Medicaid ID and unique ID number are not required fields like the other elements. New York also collects the Office of Addiction Services and Supports-assigned SUD program ID, which indicates which SUD program conducted the assessment.

The LOCADTR tool presents the initial recommended LOC for the client after the assessment is completed. The clinician is then asked to confirm that the recommended LOC is the appropriate LOC for the client or that the clinician wants to override it. New York includes the reason for an override; however, its list of reasons is not as extensive as California’s. New York’s reasons are LOC not available, clinical judgment, external sources requiring a different LOC for compliance with a court-ordered

¹ California’s Medicaid waiver included a limit on two SUD residential stays until January 1, 2021.

mandate, and other. If the clinician decides to override the recommended LOC, they select the alternative LOC and then provide a written explanation of why the recommended LOC was not appropriate and how the alternative recommended LOC addresses the client’s needs.

Washington. Washington State collects the following assessment data elements from all state-contracted SUD providers: client ID, provider ID (National Provider Identifier), the assessment date, and the recommended LOC.

Iowa. The IBHRS is used to collect both the assessment and treatment utilization data. The Iowa Department of Public Health sets up an account in the IBHRS for all provider agencies. This account includes provider information such as provider contract type (e.g., Medicaid, State Opioid Response grantee), the provider electronic health record code, provider identifier type, provider site identifier type, provider physical address type (i.e., service location or mailing), and provider status (active or inactive). At admission, a provider enters the client’s assessment information, including the client’s recommended LOC, the actual referred LOC, and the clinical reason for override. Iowa’s reasons for override are lack of insurance benefits, managed care refusal, clinical judgment, patient opinion, LOC not available, legal issues, and other. Iowa did not provide RTI its data on the percentage of overrides or the reason for the overrides.

When a provider logs into the IBHRS to enter information on a client, the provider information will be automatically populated. This provider information is then used by IBHRS to generate a unique client ID. This client ID is used to link the client’s treatment episode to all other data sets in the IBHRS. The information entered in the client data set includes the automatically generated client identifier, the client’s name, DOB, race, ethnicity, gender, sexual orientation, phone number, address, and email (IBHRS, 2021, 2022). Previously, unique client numbers were created using a patient’s DOB and SSN. Now, Iowa uses what it calls the patient source record identifier, which is either from a source electronic health record or an IBHRS Data Entry-generated source record identifier. IBHRS also generates an enterprise unique identifier, which is the statewide identifier that links records across IBHRS (IBHRS, 2022).

State Substance Use Disorder Treatment Utilization Data

As part of the requirements of receiving federal SUD treatment block grants, SUD facilities must collect information on each patient treated in any SUD specialty addiction facilities that accept federal or state funding (e.g., Medicaid, Medicare, state funding, federal block grants) under the direction of each state’s behavioral health agency. States have different names for these data sets. The Federal Government requires the collection of some data elements, and states have leeway to collect additional data elements. The data are provided to the HHS Substance Abuse and Mental Health Services Administration (SAMHSA) and aggregated into de-identified admission and discharge data sets called the Treatment Episode Data Set. **Table 4** shows the name of each state agency responsible for collecting its SUD utilization data, the name of the resulting database, and the providers and clients covered.² **Table 5** lists the elements included in the service utilization data by state.

² Note that the data elements for Washington are captured across several data transactions: Service Episode, Client Demographics, Client Profile, Substance Use, and Program ID Transactions.

Table 4. Information on State SUD Utilization Data

State	Department Responsible for Collecting the Data	SUD Treatment Utilization Database Name	Provider and Clients Covered
California	Department of Health Care Services	California Outcomes Measurement System, Treatment	Facilities that receive state/public funding; all licensed narcotic treatment facilities; all clients in facility except DUI
Iowa	Department of Public Health	Iowa Behavioral Health Reporting System	Facilities that receive state/public funding and facilities that are licensed/certified by behavioral health single state agencies; all clients in facility receiving SUD treatment
New York	Office of Addiction Services and Supports	Client Data System	Facilities that receive state/public funding and facilities that are licensed/certified by state Social Security Administration; all clients in facility receiving SUD treatment
Washington	Health Care Authority/ Division of Behavioral Health and Recovery	Behavioral Health Data System	Facilities that receive state/public funding; state/public-funded clients only

Table 5. Elements Included in SUD Service Utilization Data

Element	California	Iowa	New York	Washington
Provider/facility ID	•	•	• ^a	
Provider ID (National Provider Identifier)				•
Program ID			• ^a	
Unique client ID	•	•	•	
Assessment ID			•	
Assessment date	•	•	•	•
Admission date	•	•	•	•
Treatment service type	•			
Client date of birth	•		•	
Social Security Number	•		•	
Client first name	•			
Client last name	•		•	
Client gender	•		•	•
Date last treated			•	
Race/ethnicity	•		•	•
Sexual orientation				•
Disability	•			
Education	•	•	•	•

Table 5 (continued)				
Element	California	Iowa	New York	Washington
Employment	•	•	•	•
Marital status		•	•	•
Housing/residence status	•	•	•	•
Primary payment source			•	
Referral sources	•	•	•	
Mental health status	•	•	•	
Physical health status	•	•	•	
Military status		•		•
Criminal justice involvement	•	•	•	
Substance use type	•	•	•	•
Frequency of substance use	•	•	•	•
Injection use	•	•		•
Primary route	•	•	•	•
Note:				
a. Information is automatically populated when a provider logs into their account to input the data.				

Linkage Processes

Table 6 summarizes the variables that each state used to link its ASAM data with the SUD utilization data using direct matching, the variables that it used to probabilistically link ASAM data with SUD utilization data, the inclusion or exclusion of Medicaid data in addition to SUD utilization data, the years of data it linked, and the number and percentage of treatment episodes that it was able to link.

California. California had previous experience linking its SUD assessment data with its SUD utilization data. The state’s Department of Health Care Services partnered with the University of California, Los Angeles to evaluate how the DMC-ODS improved quality, access, and coordination/integration of SUD treatment services for beneficiaries. Part of the evaluation linked California’s ASAM criteria-based LOC referral data with its Medicaid claims data (Medi-Cal) and then linked those data to those from its California Outcome Measurement System Treatment (CalOMS-Tx), which is a data collection and reporting system for all patients in publicly funded SUD treatment services.

The only unique identifying information that California could use to link its SUD assessment data to other data sets was a unique client index number (CIN), which is California’s Medicaid identification number; however, California’s SUD utilization data did not have a CIN, but rather contained an SSN. California’s Medicaid enrollment data included both the CIN and SSN. Thus, California first linked its Medicaid enrollment data to its SUD utilization data to transfer the CIN to the SUD utilization data; then, it direct matched the SUD utilization data to the assessment data using the CIN. For patients missing an SSN, California linked the Medicaid enrollment records to the SUD utilization data using a combination of the client’s name, DOB, gender, county, assessment data, and admission date. Because California’s matching strategy relied in its CIN, the linking was limited to Medicaid beneficiaries.

Table 6. Data Types Linked, Years Linked, Number and Percentage of Episodes Linked

State	Linkage Variables		Medicaid Data Included	Years Linked	Number of...			% Assessments Linked ^a
	Direct	Probabilistic			Assessments	Utilization Episodes	Episodes Linked	
California	<ul style="list-style-type: none"> Client ID Provider ID Assessment date Admission date 	<ul style="list-style-type: none"> Client name DOB County Assessment date Admission date 	Yes	2018-2020	Brief: 82,211 Initial: 214,465	317,633	Brief: 36,836 Initial: 125,449	Brief: 44.8% Initial: 58.5%
Iowa	<ul style="list-style-type: none"> Client ID Provider ID 	N/A	No	2019-2021	Not provided	Not provided	83,270	N/A ^b
New York	<ul style="list-style-type: none"> Client ID Provider ID Assessment date 	<ul style="list-style-type: none"> Gender DOB Last 4 digits of SSN First name Last name Assessment date Admission date 	No	Oct 2015-Dec 2019	1,277,271	1,414,245	794,522	62.2%
Washington	<ul style="list-style-type: none"> Client ID Provider ID Assessment date Admission date 	N/A	No	2020-2021	81,440	Not provided	23,430	28.8%

Notes: ASAM Levels 0 and 0.5 are not included in assessment and utilization episode numbers for California, Iowa, and Washington. "Brief" refers to California's brief assessment for hotline callers.

a. Number of linked assessments, divided by the number of total assessments.

b. Iowa did not provide the total number of assessments completed to calculate the percentage linked.

Using 2019 data, California was able to match 91.4% (142,680/156,046) of SUD utilization data (CalOMS-Tx admissions file indicating the client is a Medicaid beneficiary) to Medi-Cal eligibility. Using SSN first to link the data, it linked 87.9% (137,104/156,046) of admissions to claims data; then, using a deterministic match on name and DOB, it linked an additional 3.57% (5,576/156,046) of the data. California was able to match 45% of its brief assessments to an admission and 59% of its ASAM assessments to an admission.

New York. New York linked the LOCADTR data to its SUD utilization data, which it calls the Client Data System (CDS). To determine the direct matching criteria that would produce the most accurate link between assessment and utilization records, New York tested several different matching approaches. At first, it was strict with its matching rules. For example, it restricted the difference between assessment completion date and service start date to within 7 days. It then loosened its restrictions by making changes to the matching criteria, such as increasing the difference in number of days between assessment completion date and service start date to within 30 days.

New York used SAS® software to carry out the direct matching. The final matching criteria it used was whether the client ID, provider ID, or program ID from the LOCADTR exactly matched that information in the CDS and whether the difference in days between the assessment completion date and the service start date was within 30 days. After completing the direct matching process and finding all assessments

that directly linked to a utilization record, New York then turned to using probabilistic matching. It used a fine-grained record integration and linkage tool to conduct probabilistic matching on the remaining assessments not linked during the direct matching process. The tool enables researchers to assess objectively the quality of linked data (Jurczyk et al., 2008). For probabilistic matching, New York used gender, DOB, last four digits of the patient's SSN, first name, and last name. It used weights and a nested or neighborhood loop, and it took about 12 hours to complete one run. Using this method, New York was able to match 62.2% of its assessments to an admission using data from October 2015 to December 2019.

New York reported that some of the matching elements have become weak in recent years. There is hesitancy to report information considered personally identifiable information, such as the first two letters of the last name and the last four digits of the SSN. More often the SSN is being reported as all zeros or all nines. This can produce duplicate IDs even for different clients and makes matching the admissions in the CDS to the assessments in the LOCADTR more difficult. New York said that from 2015 to 2018 the matching rate was around 73%, but more recently the matching rate has dropped. It has flagged this as an issue and is working on solutions to increase its matching rate. New York's matching strategy focused on all patients for whom assessment data and utilization data were available (see Tables 1 and 4) and was not limited to Medicaid beneficiaries.

Washington. Washington State linked its assessment data to its SUD utilization data using the admission date (also called the service episode start date), assessment date, and the client ID. Using these data elements, Washington was able to link 28.8% (23,430/81,440) of its assessment data to its service utilization data for calendar years 2020 and 2021. One reason for the low linkage rate is that providers did not consistently submit the admission date. A second reason stemmed from the fact that many ASAM assessments appeared to be duplicative, or the assessment dates could not be matched to the service episode start date within a reasonable time period (e.g., 14 days before the episode start or 7 days after the episode start). Like New York, Washington's matching strategy focused on a broad range of patients for whom assessment and utilization data were available and was not limited to Medicaid beneficiaries.

Level of Care Recommendations Pre and Post-Linkage

Only a subset of patient assessments could be linked to an admission across all states. To understand whether the linked sample was biased (i.e., whether the linked assessments differed from the assessments that could not be linked), we compared the distribution of the recommended LOC before and after linking. **Table 7** compares the LOC recommendations for patients before and after linkage to the SUD utilization data. **Appendix 2** shows the ASAM LOCs included in each of the LOCs in **Table 2**. **Appendix 3** shows more detailed LOCs.

New York was able to link approximately 62% of its assessments to an admission; California linked 53% of brief assessments and 61% of assessments to an admission; and Washington linked 29% of assessments to an admission. The distribution of the LOC recommended among the pre-linked and linked population is relatively similar. Across all states and LOCs, the average difference (positive or negative) is 2%. Across states, the percentage point difference in distributions for outpatient ranges from -3.4 to 1.7, residential ranges from -0.6 to 3.4, WM ranges from -4.8 to 4.6, and OTP ranges from -2.1 to 2.3.

Table 7. Pre-Linked and Linked Recommended LOCs

State	Total Assessments	Outpatient	Residential/ Inpatient	Withdrawal Management	OTP/Outpatient With MAT
California Brief					
Pre-linked	82,211 (100.0%)	32,045 (39.0%)	43,867 (53.4%)	917 (1.1%)	5,382 (6.5%)
Linked	36,836 (100.0%)	15,079 (40.9%)	18,741 (50.9%)	230 (0.6%)	2,786 (7.6%)
Difference		-1.9	2.5	0.5	-1.1
California					
Pre-linked	214,465 (100.0%)	88,950 (41.5%)	86,226 (40.2%)	3,643 (1.7%)	35,646 (16.6%)
Linked	125,449 (100.0%)	55,433 (44.2%)	48,569 (38.7%)	1,873 (1.5%)	19,574 (15.6%)
Difference		-2.7	1.5	0.2	1.0
Iowa					
Pre-linked	Not provided	Not provided	Not provided	Not provided	Not provided
Linked	83,270 (100.0%)	60,616 (56.6%)	19,361 (32.2%)	3,293 (6.5%)	N/A
New York					
Pre-linked	1,277,271 (100.0%)	477,033 (37.3%)	369,001 (28.9%)	286,060 (22.4%)	145,177 (11.4%)
Linked	794,522 (100.0%)	282,805 (35.6%)	202,338 (25.5%)	216,487 (27.2%)	92,892 (11.7%)
Difference		1.7	3.4	-4.8	-0.3
Washington					
Pre-linked	81,440 (100.0%)	46,067 (56.6%)	26,209 (32.2%)	5,326 (6.5%)	3,838 (4.7%)
Linked	23,430 (100.0%)	14,054 (60.0%)	7,333 (31.3%)	437 (1.9%)	1,591 (6.8%)
Difference		-3.4	0.9	4.6	-2.1
Note: "Brief" refers to California's brief assessment for hotline callers.					

Lessons Learned From Linkage Process

Table 8 summarizes the problems states encountered in linking their assessment and SUD utilization data and the solutions identified to address those challenges.

Table 8. Problems States Faced Linking Their Assessment and Service Utilization Data, and Their Solutions

Problem	Solutions
Missing client ID prevents linking assessment data with other sources	Require that providers enter information needed to identify clients. Use probabilistic matching in addition to direct matching. Generate a unique statewide client identifier (that links records across all state data systems).
State has difficulty deciding cut-off time period for linking assessment date to admission date	Consult requirements for when assessments must be conducted relative to the client's first visit (e.g., within 30 days). Use a "reasonable" time period such as 30 days before or after the admission.
Client has multiple assessments, admissions records, or both	Use a deduplication process to pick the most relevant assessment or admission to use in the linking process. Add a variable indicating whether the assessment is the initial assessment or a continuing care assessment.
State is unable to provide researchers data to link	Employ privacy-protecting linkage methodologies.

Assigning Assessment Date to an Admission Date. If an assessment happened on the same day as an admission and had the same client and provider identifying information, then it was clear that the assessment pertained to that admission. However, assessments often occurred before or after the date of admission. Some states require that an assessment occur within a given time frame of the admission. For example, California regulations require that the assessment be completed within 30 days of admission. New York obtained feedback from its provider community regarding what would be an appropriate assumption of the time between assessment and admission and was told that 30 days before or after is a reasonable assumption.

Multiple Assessments, Admissions, or Both. Another problem was deciding how to handle the same client's having multiple assessment or admission records and how to determine which assessment should be linked to which admission. Multiple assessments may occur because clients are assessed over time to determine whether they should move to a different LOC or because an assessment was started but not completed. Washington created a deduplication process to handle a client's having multiple assessments, which resulted in dropping 6.1% of the number of ASAM records, for a total of 100,271 assessments in calendar years 2020-2021.

California took an approach similar to Washington's when handling multiple assessments or admissions. It dropped duplicate assessments that were conducted on the same day for the same ASAM level, or when the assessments were for the same ASAM level but reported within 1-7 days of each other.

New York conducted its deduplication process after linking its assessment and utilization data. For records that matched one assessment to multiple episodes or vice versa, New York first chose the assessment and admission that directly matched using client ID, provider ID, and program ID. If there was not a direct match using these three elements, it then chose the best-matching record, defined as the one with the closest service type between assessment and admission and the minimum days between the assessment date and admission date. New York also added a variable to its assessment database to indicate whether the assessment was the initial intake assessment or an assessment conducted after the client was already admitted to the LOC to determine whether the LOC was still the most appropriate LOC.

Missing Client Identifiers. Another problem states faced was missing IDs in the data. Washington and New York attempted imputing the missing client IDs using claims data but found that this did not help much.

New York found that the Medicaid ID was missing in the CDS more than the CDS unique ID and would produce fewer matches. Also, some of New York's clients may not have Medicaid when they start treatment. Once clients are in treatment, someone may help them get Medicaid, but rarely do staff go back and enter the ID.

New York and California used probabilistic matching when direct IDs were missing.

Washington's information technology staff are responsible for overseeing the data validation process and have now made it mandatory to submit the information needed to create a unique client ID and link the data.

Iowa generates an enterprise unique identifier, which is the statewide identifier that links records across all its data systems.

Data Governance Prevents Researchers from Linking Data. We had originally planned for states to provide their data to RTI, which would link the data. However, states' data governance processes essentially prohibited the transfer of data with personal identifiers to external researchers. Ideally, states would develop efficient privacy-protecting linkage processes that would more readily provide external access to and use of linked assessment, SUD utilization, and Medicaid claims data.

FINDINGS

In this section we describe the findings from linking the ASAM LOC assessments to the utilization data pertaining to their use for SUD treatment capacity planning.

Level of Care Recommended

Table 9 displays the recommended LOC among patients who were admitted to SUD treatment and whose admission was linked to an assessment in each state. Outpatient was the most commonly recommended LOC among patients admitted to SUD treatment: New York (35.6%), California brief (40.9%), California ASAM (44.2%), Iowa (72.8%), and Washington (60.0%). In all states, more than 23% of patients were recommended for residential or inpatient treatment: New York (25.5%), California brief (50.9%), California (38.7%), Iowa (23.3%), and Washington (31.3%). The proportion of patients recommended for WM varied among the states, from 27.2% in New York to 0.6% in California brief. The percentage of patients recommended for OTPs was highest in California (15.6%) and lowest in Washington (6.8%). Iowa did not include OTP as a recommended LOC.

State	N Assessment-Admission Pairs	Outpatient	Residential/Inpatient	Withdrawal Management	OTP/Outpatient With MAT
California Brief Assessment	36,836 (100.0%)	15,079 (40.9%)	18,741 (50.9%)	230 (0.6%)	2,786 (7.6%)
California	125,449 (100.0%)	55,433 (44.2%)	48,569 (38.7%)	1,873 (1.5%)	19,574 (15.6%)
Iowa	83,270 (100.0%)	60,616 (72.8%)	19,361 (23.3%)	3,293 (4.0%)	---
New York	794,522 (100.0%)	282,805 (35.6%)	202,338 (25.5%)	216,487 (27.2%)	92,892 (11.7%)
Washington	23,430 (100.0%)	14,054 (60.0%)	7,333 (31.3%)	437 (1.9%)	1,591 (6.8%)

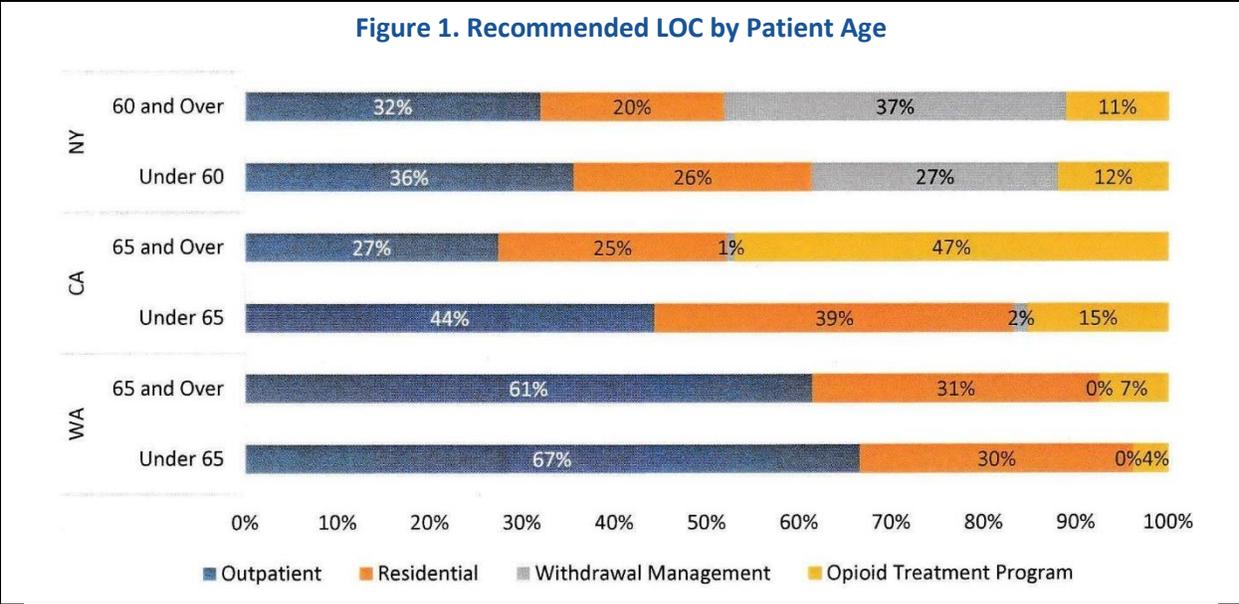
Level of Care Recommendation by Demographic Characteristics

One can determine LOC need among certain subpopulations by examining the data on recommended LOC by patient characteristic. Three states--New York, California, and Washington--used their assessment data to examine LOC need by patient characteristics. Results for California in this section are based on the assessment. **Appendices D-G** provide detailed information on recommended LOCs by patient characteristics, including age, gender, education, employment status, housing status, primary substance used, frequency of substance use in the past 30 days, and primary injection route.

Patient Demographics

Age

As shown in **Figure 1**, younger patients (<60 years) were recommended to outpatient treatment at higher rates than older patients (60+). In New York, older patients were recommended to WM services more frequently than younger patients. In California, older patients were more likely to be recommended to OTPs than younger patients.



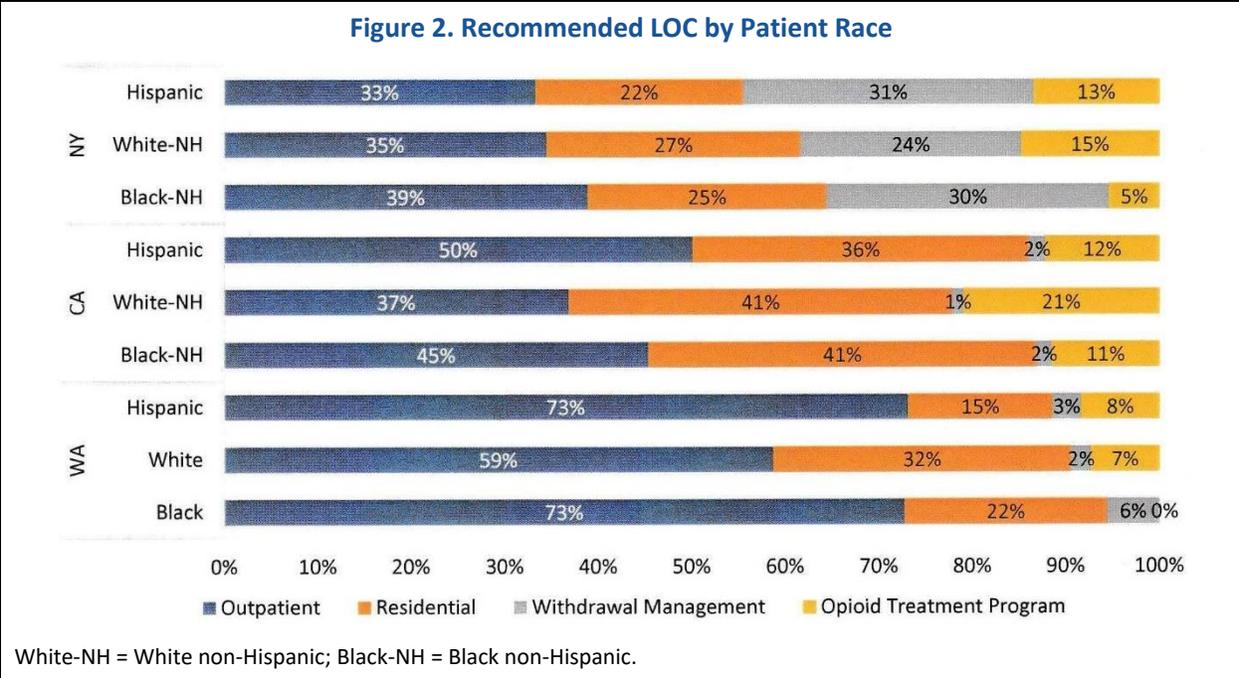
Gender

The LOC recommended was similar for male and female patients across the states (**Table 10**). The largest difference was in New York for WM, to which females were referred to more often than males (28.8% and 23.2%, respectively). The second-largest difference was also in New York: males were recommended to OTPs more than females (14.7% and 10.6%, respectively).

Table 10. LOC by Patient Gender				
Gender	% Outpatient	% Residential/ Inpatient	% Withdrawal Management	% OTP/Outpatient With MAT
California				
Male	43.3%	38.8%	1.5%	16.5%
Female	45.5%	38.6%	1.5%	14.4%
Difference	-2.2	0.2	0.05	2.1
New York				
Male	37.4%	24.6%	23.2%	14.7%
Female	34.9%	25.8%	28.8%	10.6%
Difference	2.5	-1.2	-5.5	4.1
Washington				
Male	59.9%	32.3%	1.7%	6.1%
Female	60.4%	29.7%	2.1%	7.8%
Difference	-0.6	2.6	-0.3	-1.7

Race/Ethnicity

Figure 2 describes the distribution of recommendations to LOC by race. In New York, Black non-Hispanic and Hispanic patients were recommended to WM more than White non-Hispanic patients. White non-Hispanic patients were recommended to OTP more than Black non-Hispanic and Hispanic patients (except in Washington).



Across all three states, White non-Hispanic and Black non-Hispanic patients were recommended to residential treatment more than Hispanic patients, and Black non-Hispanic patients were recommended to outpatient treatment more than White non-Hispanic patients.

Socioeconomic Characteristics

Education

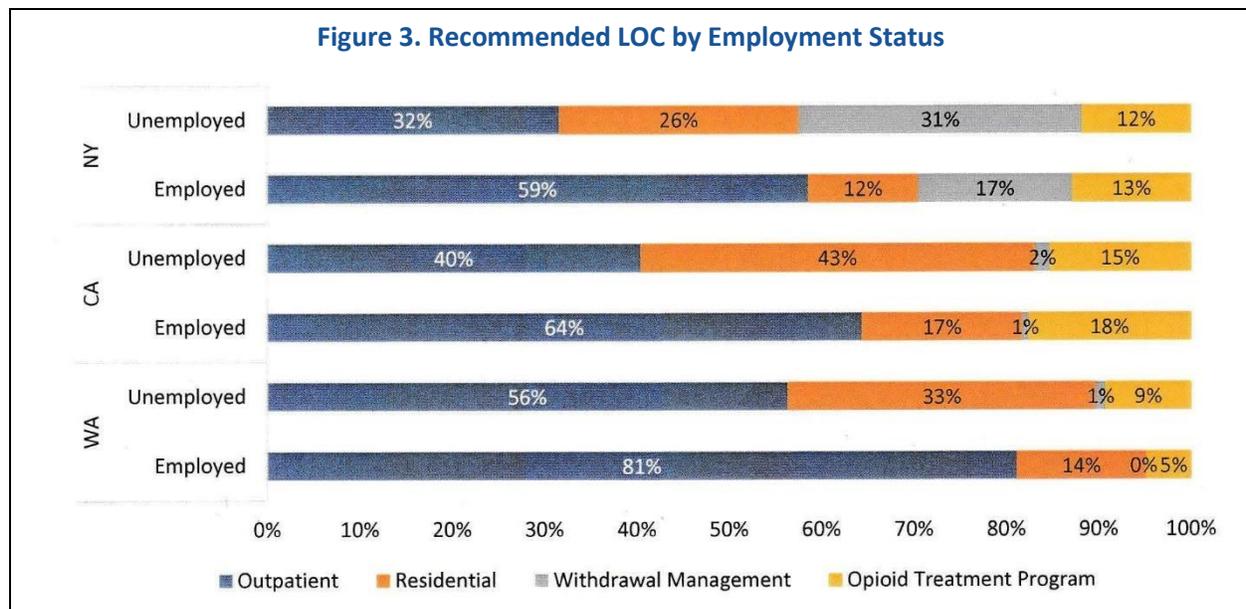
A patient’s education level did not seem to be associated with the LOC recommended (**Table 11**). For all states, there was little difference across the LOCs recommended between patients with less than a high school education and patients with a high school education or more.

Table 11. Socioeconomic Characteristics by LOC				
Education Level	% Outpatient	% Residential/ Inpatient	% Withdrawal Management	% OTP/Outpatient With MAT
California				
Less than high school	47.9%	36.9%	1.6%	13.6%
High school or more	42.7%	39.5%	1.5%	16.4%
Difference	5.2	-2.6	0.1	-2.8
New York				
Less than high school	35.7%	25.0%	28.1%	11.2%
High school or more	35.6%	25.6%	26.8%	11.9%
Difference	0.04	-0.6	1.3	-0.7

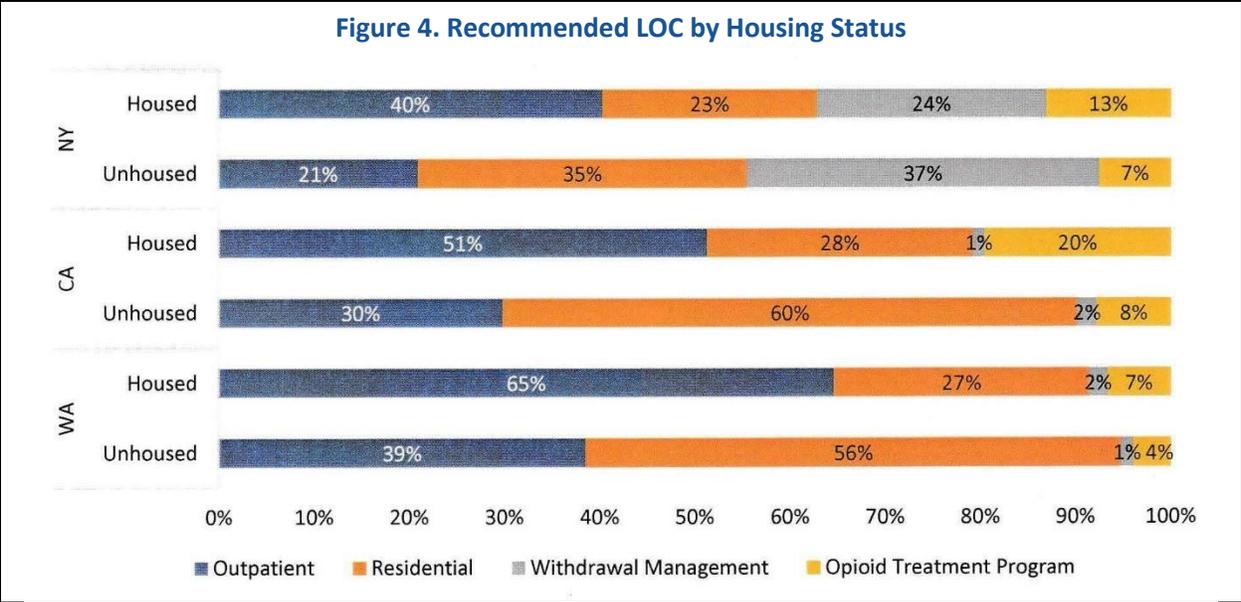
Table 11 (continued)				
Education Level	% Outpatient	% Residential/ Inpatient	% Withdrawal Management	% OTP/Outpatient With MAT
Washington				
Less than high school	60.8%	30.2%	0.8%	8.3%
High school or more	63.8%	26.7%	0.7%	8.7%
Difference	-3.1	3.5	0.1	-0.4

Employment and Housing Status

Employment and housing status had a relatively large association with the recommended LOC (**Figure 3**). Patients who were employed either full-time or part-time were recommended to outpatient at higher rates than patients who were unemployed or not in the labor force. In New York, the difference was 27 percentage points (59% employed; 32% unemployed); in California, the difference was 24 percentage points (64% employed; 40% unemployed); and in Washington, the difference was 25 percentage points (81% employed; 56% unemployed).



Unhoused patients were recommended to residential treatment more often than patients with stable housing (**Figure 4**). More than half the unhoused populations who received an assessment were recommended to residential treatment in California (60%) and in Washington (56%) and more than one-third (35%) were recommended to residential treatment in New York. These rates are higher than those for housed patients recommended to residential treatment. Patients with stable housing were recommended to outpatient treatment more often than unhoused patients across states. In Washington, 65% of stably housed patients were referred to outpatient treatment, compared to 39% of unstably housed patients; in California (51% and 30%, respectively); and in New York (40% and 21%, respectively).



County

Table 12 provides county-level summary statistics by recommended LOC for three states. Detailed LOCs by county are provided in **Appendices 7-10**. There is variation across counties in the percentage of individuals recommended to outpatient, residential/inpatient, WM, and OTPs. The variation could stem from differences in the patient populations and their needs, as well as from differences in the availability of LOCs within the counties.

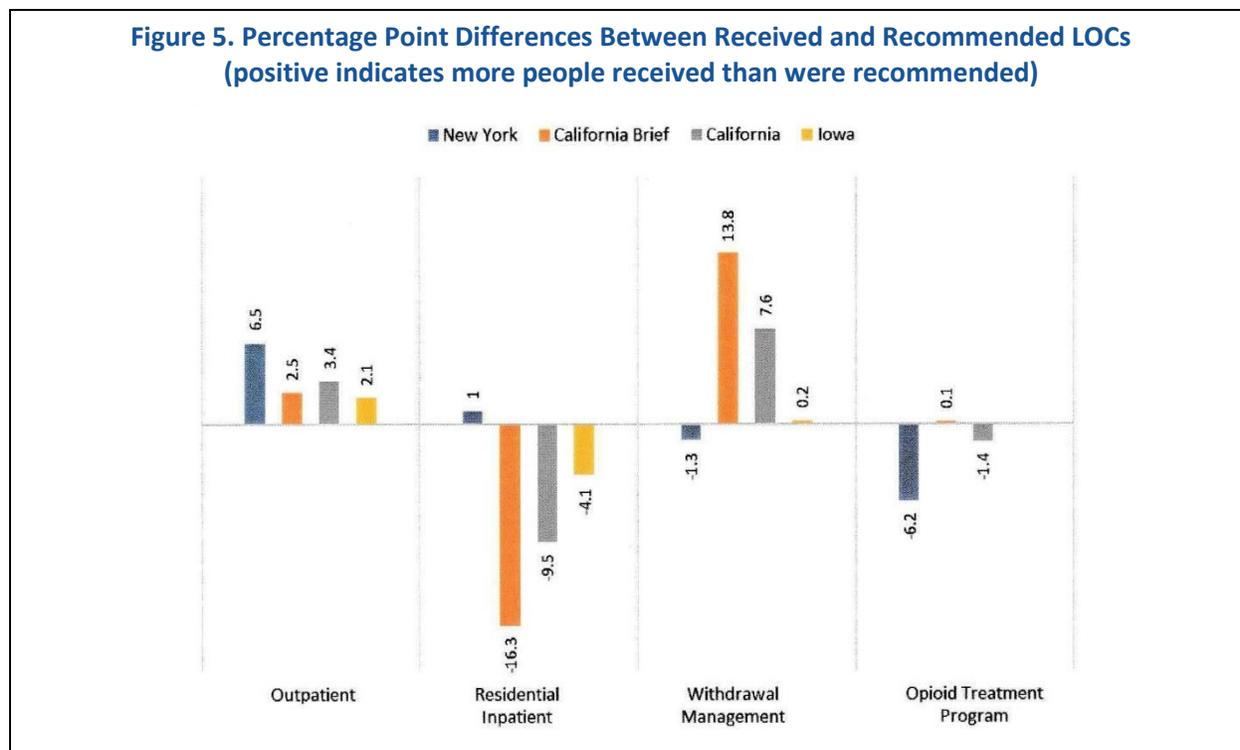
Table 12. Distribution of People Recommended to LOC by Care Across Counties				
Distribution	% Outpatient	% Residential/ Inpatient	% Withdrawal Management	% OTP/Outpatient With MAT
California				
Minimum	0%	0%	0%	0%
Median	43%	34%	0%	12%
Maximum	100%	79%	5%	100%
New York				
Minimum	17%	18%	6%	7%
Median	40%	28%	14%	15%
Maximum	64%	55%	45%	27%
Washington				
Minimum	0%	0%	0%	0%
Median	67%	28%	0%	0%
Maximum	100%	100%	5%	20%

Level of Care Received Compared With Recommended Results: California, Iowa, and New York

Table 13 displays the distribution of the LOCs received and the LOCs recommended in each state. **Figure 5** displays the percentage point difference in the number of individuals receiving a given LOC relative to the number that were recommended to that LOC in the three states that provided these data. Large

differences between recommended and received LOCs may be indicative of gaps in the supply of certain LOCs. In California and Iowa, patients were less likely to receive residential treatment than recommended. In New York, fewer people received OTP treatment than recommended (6.2 percentage point difference).

Table 13. LOC Received Compared With Recommended (positive indicates more people received than recommended)				
LOC	Outpatient	Residential/ Inpatient	Withdrawal Management	OTP/Outpatient With MAT
California Brief (N = 36,836)				
Received	15,976 (43.4%)	12,744 (34.6%)	5,288 (14.4%)	2,828 (7.7%)
Recommended	15,079 (40.9%)	18,741 (50.9%)	230 (0.6%)	2,786 (7.6%)
Difference	2.5	-16.3	13.8	0.1
California (N = 125,449)				
Received	59,662 (47.6%)	36,662 (29.2%)	11,357 (9.1%)	17,768 (14.2%)
Recommended	55,433 (44.2%)	48,569 (38.7%)	1,873 (1.5%)	19,574 (15.6%)
Difference	3.4	-9.5	7.6	-1.4
Iowa (N = 83,340)				
Received	63,467 (74.9%)	16,302 (19.2%)	3,571 (4.2%)	---
Recommended	60,616 (72.8%)	19,361 (23.3%)	3,293 (4.0%)	---
Difference	2.1	-4.1	0.2	---
New York (N = 794,522)				
Received	334,858 (42.1%)	210,490 (26.5%)	205,681 (25.9%)	43,493 (5.5%)
Recommended	282,805 (35.6%)	202,338 (25.5%)	216,487 (27.2%)	92,892 (11.7%)
Difference	6.5	1.0	-1.3	-6.2
Washington (N = 23,430)				
Received	---	---	---	---
Recommended	14,054 (60.0%)	7,333 (31.3%)	437 (1.9%)	1,591 (6.8%)
Note: "Brief" refers to California's brief assessment for hotline callers.				



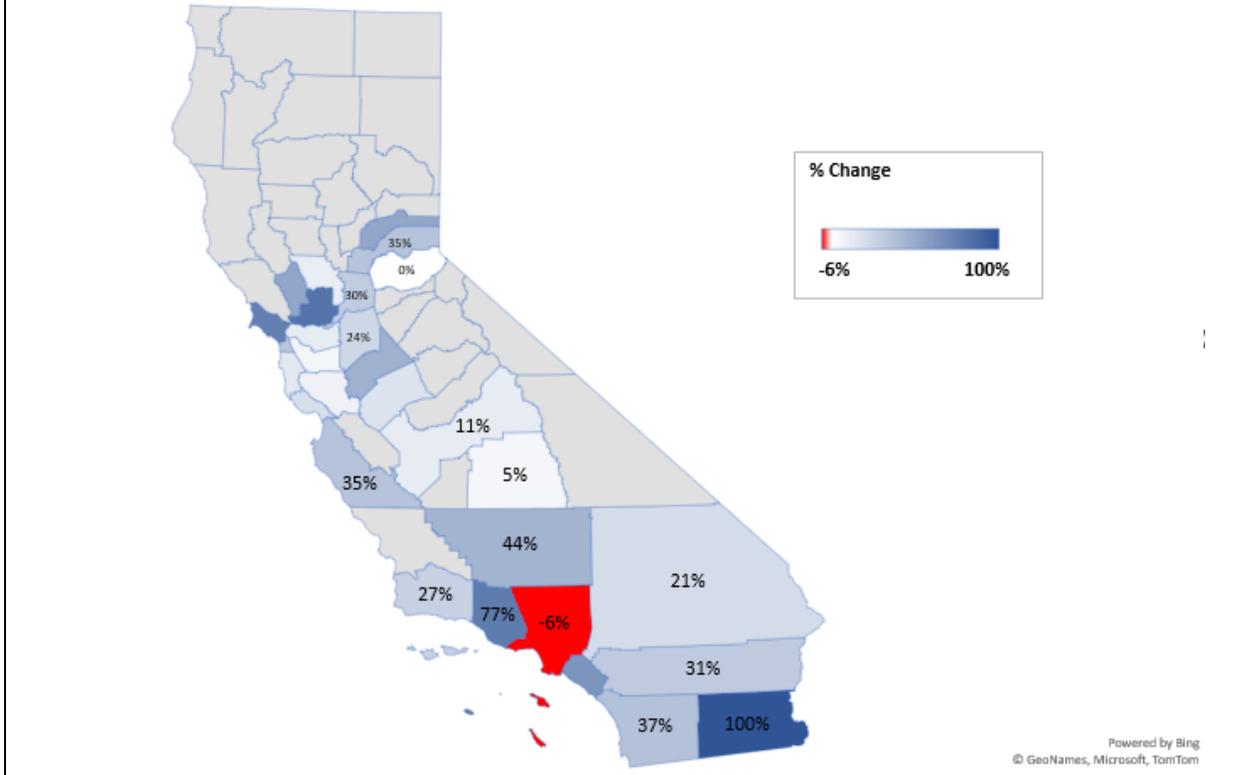
Level of Care Received and Recommended, by County

Geographic data, such as county-level data, help to visualize the treatment needs within a state and can help researchers identify gaps in care that would not be easily identified at the state level. **Figure 6** shows the percent change between patients who were recommended to residential/inpatient treatment and those who went to outpatient treatment in New York, by county.

As we showed in the previous section, at the state level, in New York one percent more patients received residential/inpatient services than were recommended residential/inpatient services. Looking at the county-level data, there are several counties where the percentage of people receiving residential/inpatient services is less than recommended. For example, the level received was lower in some counties in the western part of New York (e.g., 39% lower in Niagara County). On the other hand, there are a couple of counties where more individuals than recommended are receiving residential care, such as Herkimer County (13% more than recommended) and Putnam County (29% more than recommended).

In California, as shown in **Figure 7**, there was variation across the counties in the differences between the percentage recommended to and the percentage receiving residential/inpatient treatment. In the counties in the southwest, such as Riverside, San Bernardino, Orange, San Diego, and Imperial, between 21% and 100% fewer individuals are receiving residential treatment than recommended.

Figure 7. Percent Change From Patients Recommended to Patients Receiving Residential/Inpatient Treatment in California



Level of Care Assessment Recommendation Overrides

When trying to identify treatment gaps, it is important to understand why people did not receive the LOC for which they were recommended. New York provided information on the number of LOC recommendations that were overridden and reasons that a recommended LOC was overridden. In New York, only 4.4% of total referrals were overridden (**Table 14**). The LOC overridden the most was outpatient (5.7%), followed by residential/inpatient (4.9%). In California, 7.1% of total assessment referrals were overridden. The most-overridden LOC in California was WM (37.4%), followed by residential/inpatient (8.1%), outpatient (7.2%), and OTP (1.5%).

Table 14. New York and California Overrides by LOC

Recommended LOC	New York			California		
	N Referred	N Overridden	% Overridden	N Referred	N Overridden	% Overridden
Outpatient	274,945	15,545	5.7	55,433	3,999	7.2
Residential/inpatient	202,736	9,911	4.9	48,569	3,933	8.1
Withdrawal management	212,303	5,078	2.4	1,873	700	37.4
OTP/ Outpatient with MAT	97,083	4,053	4.2	19,574	289	1.5
Total	794,522	34,587	4.4	125,449	8,921	7.1

In addition to looking at overrides by LOC, New York and California also asked providers to report on the reasons for an override. **Table 15** presents New York’s number and percentage of overrides by LOC by reason (LOC not available, clinical judgment, and court mandated to another LOC). There can be multiple reasons for an override, which is why the number of overrides does not equal the sum of the overrides by reason. In New York, across all LOCs, most overrides were due to clinical judgment (50.7%), followed by court mandated to another LOC (31.8%), and LOC not available (24.3%). The LOC with the highest proportion of overrides due to the LOC’s not being available was OTP (36.9%), followed by residential/inpatient (28.4%). For clinical judgment, the LOC with the highest proportion of overrides was detox/crisis (64.2%). For court mandated to another LOC, the most commonly overridden LOC recommended was residential/inpatient (39.3%).

Figure 8 describes the percentage of overrides that were because LOC was not available by county. Relative to counties in the southeastern part of New York, counties in the northern and western part of New York had a relatively higher percentage of overrides because the LOC was not available.

New York was the only state to provide data to indicate to what LOC patients were recommended if the LOCADTR recommendation was overridden. **Table 16** presents this information. Among those recommended to outpatient treatment, when the level of treatment was overridden, it was most commonly in favor of an OTP/outpatient with MAT. For residential/inpatient, the most common destination when overriding this LOC was to outpatient. For WM, the most common destination when overriding this LOC was to outpatient. For OTPs/Outpatient with MAT, the most commonly destination when overriding this LOC was outpatient.

Recommended LOC	Override Reason						
	N Overridden	LOC Not Available		Clinical Judgment		Court Mandated to Another LOC	
		N	%	N	%	N	%
Outpatient	15,545	3,310	21.3%	7,907	50.9%	5,196	33.4%
Residential/inpatient	9,911	2,814	28.4%	4,197	42.3%	3,892	39.3%
Detox/crisis	5,078	775	15.3%	3,258	64.2%	1,223	24.1%
OTP/Outpatient with MAT	4,053	1,496	36.9%	2,176	53.7%	673	16.6%
All	34,587	8,395	24.3%	17,538	50.7%	10,984	31.8%

Figure 8. New York Percentage of Recommended LOC Overridden Because LOC Was Not Available

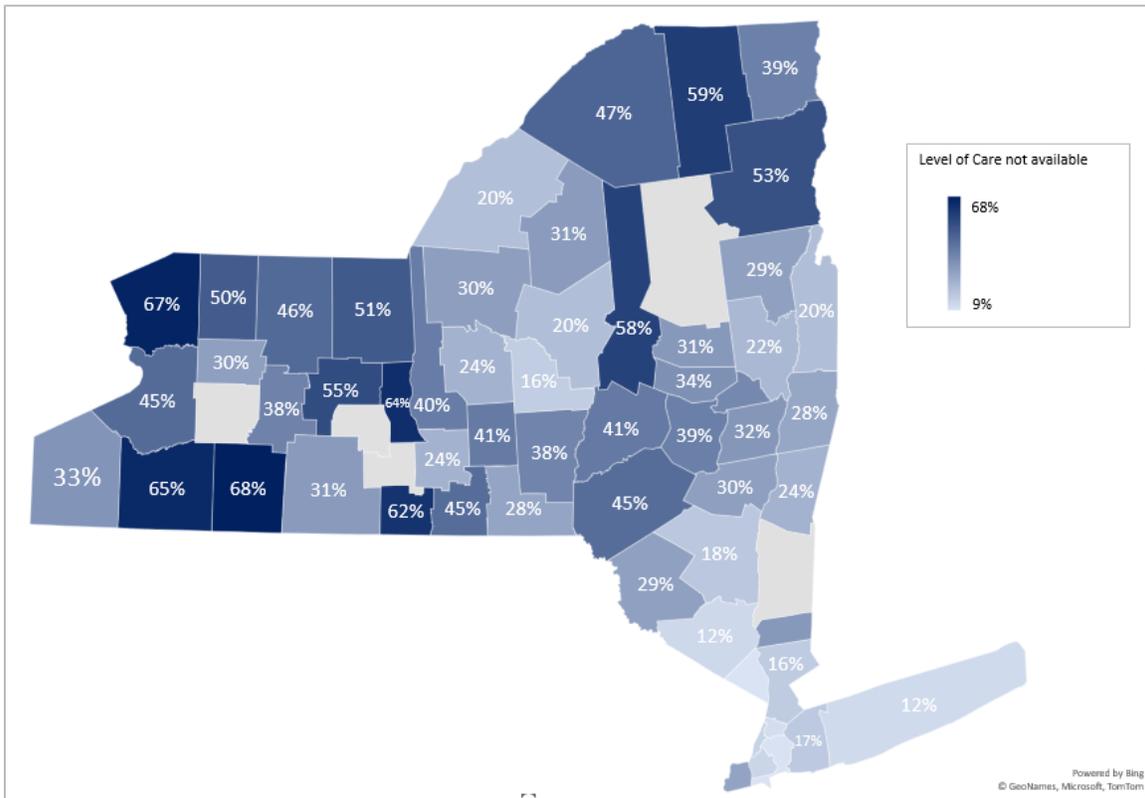


Table 16. New York Recommended LOC and LOC to Which Overridden

Recommended LOC	Total	LOC Overridden to...									
		Outpatient		Residential/ Inpatient		Withdrawal Management		OTP/Outpatient With MAT		Other	
		N	%	N	%	N	%	N	%	N	%
Outpatient	15,545	---	---	2,344	15%	82	1%	7,117	46%	6,002	39%
Residential/ inpatient	9,911	2,071	21%	5,832	59%	758	8%	658	7%	592	6%
Withdrawal management	5,078	2,578	51%	1,526	30%	---	---	467	9%	507	10%
OTP/Outpatient with MAT	4,053	3,039	75%	607	15%	57	1%	---	---	350	9%
All	34,587	7,688	22%	10,309	30%	897	3%	8,242	24%	7,451	22%

California also provided information on the reason for overrides (**Table 17**). Overall, 7.1% of ASAM assessments were overridden in California. Of those, a plurality (42.5%) indicated “other” as the reason for the override. The reasons included under “other” are legal issues, geographic accessibility, managed care refusal, family responsibility, language/cultural, used two residential stays in a year, lack of insurance/payment, missing referral, and missing reason. Clinical judgment accounted for the next-highest override reasoning (29.4%), followed by patient preference (25%).

Table 17. Overrides by Reason for California

	Overrides	% Overrides
Total assessment-admission pairs	125,449	100.0%
Total number of overrides	8,921	7.1%
Reason for overrides		
Clinical judgment	2,789	29.4%
Patient preference	2,371	25.0%
LOC not available	247	2.6%
Other	4,025	42.5%
Note: The number of overrides by reason does not sum to the total number of overrides because of suppression.		

CONCLUSIONS

This analysis of assessment and utilization data from four states illustrates how these data can be used to identify treatment gaps and to help with workforce capacity planning and its benefits. It also highlights the limitations of the data and suggests several areas for future research.

Looking across all the states, it is interesting to note that between 25.5% (in New York) and 38.7% of patients assessed upon entry into specialty addiction treatment were recommended for residential/inpatient settings. This information could help states that are expanding Medicaid coverage of residential treatment anticipate the need for residential treatment. However, the analyses also indicated that the need for residential treatment might be lower if there were a greater availability of housing. According to *The ASAM Criteria* (3rd edition), residential treatment (i.e., level 3.1 clinically managed, low-intensity residential services) is recommended if the patient needs a structured environment to maintain therapeutic gains or if their current environment is dangerous. The analyses of recommended LOC by patient demographics reveal that a large portion of unemployed and unhoused patients are recommended to residential care. Some of these individuals could potentially be better--and more cost-effectively--served by outpatient treatment combined with supportive housing rather than residential treatment (which is often time limited). The New York LOCADTR tool has an LOC called *Reintegration Services in a Residential Setting--Supportive Living*. These settings are described as “[Office of Addiction Services and Supports]-certified programs that are designed to promote independent living in a supervised setting for individuals who have completed another course of treatment, are making the transition to independent living, and whose need for services does not require staffing on site on a 24-hour a day basis” (New York State Office of Alcoholism and Substance Abuse Services, n.d.). In contrast, *The ASAM Criteria* does not have an LOC that indicates need for supportive housing. The ASAM LOC criteria were originally designed to identify and justify the need for “medical services” covered under health insurance. Social determinants of health, such as housing, that are typically excluded from insurance are not explicitly addressed in ASAM’s LOC recommendations other than in the residential LOC (CMS, 2019).

The recommendations for the percentage of individuals needing WM varied widely, from 1.9% in Washington to 2.7% in New York, 4% in Iowa, and 22.8% in California. This variation may reflect a lack of clarity in the ASAM WM LOCs. In the forthcoming fourth edition of *The ASAM Criteria*, the WM LOC will be clarified and simplified, which may reduce variation among the states.

Focusing on the findings from the state that had the richest data of the four states--New York--demonstrates how the LOC data could be used to identify potential treatment gaps within a given state. At the state level, New York appears to be meeting the need for residential/inpatient treatment and WM, with a difference between the percentage of people recommended to and receiving these LOCs of approximately 1 percentage point. However, county-level results reveal several counties where the percentage of people receiving residential treatment was lower than the percentage who were recommended to receive the treatment. These counties tended to overlap with the counties with higher levels of overrides because the LOC was not available. This may signal capacity problems, but these data require additional investigation such as through qualitative interviews and review by experts in New York’s treatment system before it can be concluded that there are capacity gaps in these counties. Additionally, in New York, 6.2% fewer patients received an OTP/Outpatient MAT LOC than were recommended, suggesting a potential shortage in the availability of outpatient OTP/MAT providers.

The fact that the LOCs recommended differ between the states raises questions about the consistency of the intake assessment process, LOC recommendation processes, and LOC categorization among the four states. New York used an assessment tool different from those of the other four states, which could explain some of the differences. California, Iowa, and Washington all used ASAM-based assessments. However, ASAM-based assessments are not clear-cut algorithms that derive from a simple assessment. Rather, they require clinical judgment--for example, to determine the extent to which a patient would be unable to stop using substances with imminently dangerous consequences. States also differed in the levels of care that clinicians could select. For example, Iowa did not have an OTP LOC.

In conclusion, understanding the need for specific LOCs among individuals seeking SUD treatment and the availability of SUD treatment by LOC is critical for identifying and addressing SUD treatment gaps. Currently, there are no national data sources that provide information on the treatment needs by LOC across states among patients entering specialty SUD treatment (Richardson et al., 2020). However, one emerging source for this information is patient LOC assessment data. This study demonstrates the potential value of these patient assessment data for understanding treatment needs and gaps at a more granular level than has been possible with other types of needs assessment data, such as prevalence and utilization data.

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ACRONYMS

The following acronyms are mentioned in this report and/or appendices.

ASAM	American Society of Addiction Medicine
ASPE	HHS Office of the Assistant Secretary for Planning and Evaluation
CalOMS-Tx	California Outcome Measurement System Treatment
CDS	Client Data System
CIN	Client Index Number
CMS	HHS Centers for Medicare & Medicaid Services
DMC-ODS	Drug Medi-Cal Organized Delivery System (1115 demonstration waiver)
DOB	Date of Birth
HHS	U.S. Department of Health and Human Services
IBHRS	Iowa Behavioral Health Reporting System
LGBTQIA+	Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual, or Other
LOC	Level of Care
LOCADTR	Level of Care for Alcohol and Drug Treatment Referral
MAT	Medication-Assisted Treatment
OTP	Opioid Treatment Program
SAMHSA	HHS Substance Abuse and Mental Health Services Administration
SSN	Social Security Number
SUD	Substance Use Disorder
WM	Withdrawal Management

APPENDIX 1: CROSSWALK BETWEEN NEW YORK LEVEL OF CARE FOR ALCOHOL AND DRUG TREATMENT REFERRAL AND AMERICAN SOCIETY OF ADDICTION MEDICINE LEVELS OF CARE

New York LOC	Equivalent ASAM LOC	Combined LOC
Brief intervention	Level 0.5	Not included
Ancillary withdrawal service	Level 1-WM	Outpatient
Opioid treatment program	Level 1	OTP/Outpatient with MAT
Outpatient clinic	Level 1	Outpatient
Intensive outpatient service	Level 2.1	Outpatient
Individualized care plan, consideration of supportive housing	None	Not included
Supportive living	None	Not included
Outpatient rehabilitation	Level 2.5	Outpatient
Reintegration services in a residential setting	Level 3.1	Residential/inpatient
Recovery support	None	Not included
Rehabilitative services in a residential setting	Level 3.3	Residential/inpatient
Stabilization services in a residential setting	Level 3.5	Residential/inpatient
Inpatient rehabilitation	Level 3.7	Residential/inpatient
Medically supervised inpatient detoxification	Level 3.7-WM	Withdrawal management
Secure psychiatric facility	Level 4	Residential/inpatient
Hospital based inpatient detoxification	Level 4-WM	Withdrawal management

APPENDIX 2: COMBINED LEVELS OF CARE DEFINITIONS USING THE AMERICAN SOCIETY OF ADDICTION MEDICINE CRITERIA

Level of Care	
ASAM	Combined
Level 0	Not included
Level 0.5	Not included
Level 1	Outpatient
Level 1-WM	Outpatient
Level 2-WM	Outpatient
Level 2.1	Outpatient
Level 2.5	Outpatient
Level 3.1	Residential/inpatient
Level 3.2-WM	Residential/inpatient
Level 3.3	Residential/inpatient
Level 3.5	Residential/inpatient
Level 3.7	Residential/inpatient
Level 3.7-WM	Withdrawal management
Level 4	Residential/inpatient
Level 4-WM	Withdrawal management
Level OTP	OTP/Outpatient with MAT

Table A2-1 shows the number of people recommended to each LOC using ASAM criteria in California and Washington State before linking with the SUD utilization data. California collects data from the ASAM criteria-based LOC brief screenings and the assessment. Iowa provided information only on patients whose assessment data were linked to a SUD treatment admission; therefore, its population is those patients who were assessed and have a linkable admission record instead of all patients who were assessed, as in California and Washington.

Surprisingly, a large portion of patients in Washington and California were recommended for no addiction treatment. This could be expected for patients filling out the brief survey in California, but it was surprising that more than 11.4% and 14.9% of patients being assessed by a specialty addiction program in Washington and California, respectively, were found to not need treatment.

In Washington, in 2020 and 2021, half (50%) the patients assessed were recommended to ASAM levels 1 (25.1%), 2.1 (24.8%), and 2.5 (0.1%), indicating a high need for outpatient services. The next-highest recommended LOC was residential, with 25.7% of patients assessed recommended to levels 3.1 (0.9%), 3.3 (4.0%), 3.5 (20.4%), and 3.7 (0.4%), meaning more than a quarter of patients assessed were recommended to residential. These two LOCs combined were recommended for 75.7% of the patients assessed.

Table A2-1. Recommended LOC Using ASAM Criteria

Level	ASAM LOC Definition	Washington		California Brief		California	
		N	%	N	%	N	%
Level 0	None	8,864	9.6%	24,920	20.8%	49,955	14.2%
Level 0.5	Early intervention	1,628	1.8%	574	0.5%	2,388	0.7%
	Total: No SUD treatment	10,492	11.4%	25,494	21.3%	52,343	14.9%
Level 1	Outpatient services	23,118	25.1%	17,309	14.4%	61,395	17.4%
Level 1-WM	Ambulatory withdrawal management without extended onsite monitoring (outpatient)	79	0.1%	442	0.4%	7,728	2.2%
Level 2-WM	Ambulatory withdrawal management with extended monitoring (outpatient)	11	0.0%	41	0.0%	1,510	0.4%
Level 2.1	Intensive outpatient services	22,782	24.8%	17,826	14.9%	44,810	12.7%
Level 2.5	Partial hospitalization services	77	0.1%	27	0.0%	11,707	3.3%
Level 3.1	Clinically managed low-intensity residential services	817	0.9%	27,131	22.6%	29,084	8.2%
Level 3.2-WM	Clinically managed residential withdrawal management	2,415	2.6%	9,843	8.2%	21,701	6.1%
Level 3.3	Clinically managed population-specific high-intensity residential services	3,697	4.0%	1,118	0.9%	3,743	1.1%
Level 3.5	Clinically managed high-intensity residential services	18,762	20.4%	6,843	5.7%	37,471	10.6%
Level 3.7	Medically monitored intensive inpatient services	378	0.4%	1,866	1.6%	15,286	4.3%
Level 3.7-WM	Medically monitored inpatient withdrawal management	5,273	5.7%	---	---	---	---
Level 4	Medically managed intensive inpatient services	140	0.2%	1,039	0.9%	7,391	2.1%
Level 4-WM	Medically managed intensive inpatient withdrawal management	53	0.1%	1,536	1.3%	10,557	3.0%
Level OTP	Opioid treatment program	3,838	4.2%	9,497	7.9%	48,248	13.7%
	Total: SUD treatment	81,440	88.6%	94,518	78.8%	300,631	85.2%

Notes: Washington data are from January 1, 2020, through December 31, 2021; population is all patients treated at specialty addiction programs licensed by Washington. California data are from January 1, 2018, through December 31, 2020; population is limited to Medicaid beneficiaries. "Brief" refers to California's brief assessment for hotline callers.

In California, the levels most frequently recommended to Medicaid beneficiaries who received a brief assessment were Level 3.1 (22.6%), None (20.8%), Level 2.1 (14.9%), and Level 1 (14.4%). The most frequent levels recommended for Medicaid beneficiaries who received an assessment were Level 1 (17.4%), None (14.2%), OTP (13.7%), and Level 2.1 (12.7%). One-third of patients who received an assessment were recommended to outpatient (33.4%); about one-quarter were recommended to residential (24.3%); among patients who received a brief assessment, under one-third were recommended to outpatient (29.6%) and residential (31.3%).

Washington State assessed patients to intensive outpatient (24.8%) more than California (12.7%), had more referrals to Level 3.5 than California (20.4% and 10.6%, respectively), and had relatively less referrals to Level 3.1 than California (0.9% versus 8.2%, respectively). California had more referrals to OTPs (13.7%) than Washington (4.2%).

APPENDIX 3: PATIENT CHARACTERISTIC BY RECOMMENDED LEVEL OF CARE IN NEW YORK

Characteristic	Any Level	Outpatient	Residential/ Inpatient	Withdrawal Management	OTP/Outpatient With MAT
Total	794,522 (100%)	282,805 (36%)	202,338 (25%)	216,487 (27%)	92,892 (12%)
Age					
<20	17,123 (2%)	11,391 (67%)	3,960 (23%)	1,063 (6%)	709 (4%)
20-29	193,600 (24%)	81,992 (42%)	50,390 (26%)	36,533 (19%)	24,685 (13%)
30-39	213,317 (27%)	77,519 (36%)	55,258 (26%)	51,064 (24%)	29,476 (14%)
40-49	162,455 (20%)	51,812 (32%)	41,680 (26%)	51,273 (32%)	17,690 (11%)
50-59	161,751 (20%)	45,274 (28%)	41,861 (26%)	59,399 (37%)	15,217 (9%)
60+	46,276 (6%)	14,817 (32%)	9,189 (20%)	17,155 (37%)	5,115 (11%)
Gender					
Male	216,273 (27%)	80,980 (37%)	53,239 (25%)	50,237 (23%)	31,817 (15%)
Female	578,249 (73%)	201,825 (35%)	149,099 (26%)	166,250 (29%)	61,075 (11%)
Race/Ethnicity					
Black non-Hispanic	212,370 (27%)	82,651 (39%)	54,216 (25%)	64,171 (30%)	11,332 (5%)
White non-Hispanic	377,881 (48%)	130,542 (35%)	102,406 (27%)	89,207 (24%)	55,726 (15%)
Hispanic	169,442 (21%)	56,474 (33%)	37,592 (22%)	52,645 (31%)	22,731 (13%)
Education					
Less than high school	217,076 (27%)	77,398 (36%)	54,358 (25%)	61,029 (28%)	24,291 (11%)
High school	338,896 (43%)	113,943 (34%)	89,186 (26%)	96,052 (28%)	39,715 (12%)
College or more	235,413 (30%)	90,594 (38%)	58,105 (25%)	58,035 (25%)	28,679 (12%)
Employment					
Full-time: 35+ hrs/wk	129,807 (16%)	75,701 (58%)	15,576 (12%)	22,858 (18%)	15,672 (12%)
Part-time: <35 hrs/wk	42,576 (5%)	25,326 (59%)	4,870 (11%)	5,955 (14%)	6,425 (15%)
Unemployed/not in labor force	464,337 (58%)	146,941 (32%)	120,358 (26%)	142,409 (31%)	54,629 (12%)
Marital Status					
Married	71,890 (9%)	38,418 (53%)	16,541 (23%)	5,242 (7%)	11,689 (16%)
Never married	393,232 (49%)	182,046 (46%)	123,177 (31%)	30,304 (8%)	57,705 (15%)
Divorced	62,106 (8%)	28,260 (46%)	20,045 (32%)	4,994 (8%)	8,807 (14%)
Widowed	11,375 (1%)	4,896 (43%)	3,129 (28%)	1,300 (11%)	2,050 (18%)
Other	255,919 (32%)	29,185 (11%)	39,446 (15%)	174,647 (68%)	12,641 (5%)
Sources of Income					
Wage	169,813 (21%)	97,509 (57%)	21,945 (13%)	28,983 (17%)	21,376 (13%)
Public assistance	221,175 (28%)	75,972 (34%)	53,985 (24%)	61,209 (28%)	30,009 (14%)
Family	85,796 (11%)	34,880 (41%)	17,518 (20%)	20,942 (24%)	12,456 (15%)
Other	85,455 (11%)	28,163 (33%)	17,980 (21%)	29,133 (34%)	10,179 (12%)
Missing/unknown	232,283 (29%)	46,281 (20%)	90,910 (39%)	76,220 (33%)	18,872 (8%)
Housing/Residence Status					
Unstable housing	193,515 (24%)	40,550 (21%)	66,776 (35%)	71,705 (37%)	14,484 (7%)
Stable housing	543,998 (68%)	226,997 (42%)	106,733 (20%)	137,632 (25%)	72,636 (13%)
Community residence	29,319 (4%)	9,601 (33%)	14,118 (48%)	1,596 (5%)	4,004 (14%)
Other	27,690 (3%)	5,657 (20%)	14,711 (53%)	5,554 (20%)	1,768 (6%)
Criminal Justice Involvement					
No	486,157 (61%)	119,464 (25%)	120,076 (25%)	183,847 (38%)	62,770 (13%)
Yes	308,365 (39%)	163,341 (53%)	82,262 (27%)	32,640 (11%)	30,122 (10%)
Referral Sources					
Criminal justice services	162,133 (20%)	112,996 (70%)	30,290 (19%)	4,716 (3%)	14,131 (9%)
Self	331,555 (42%)	58,448 (18%)	68,826 (21%)	159,133 (48%)	45,148 (14%)
Alcohol/drug program	110,770 (14%)	22,683 (20%)	58,242 (53%)	18,069 (16%)	11,776 (11%)
Other	190,064 (24%)	88,678 (47%)	44,980 (24%)	34,569 (18%)	21,837 (11%)

Characteristic	Any Level	Outpatient	Residential/ Inpatient	Withdrawal Management	OTP/Outpatient With MAT
Physical Health Status					
Pregnant at admission	5,661 (1%)	2,453 (43%)	1,506 (27%)	172 (3%)	1,530 (27%)
Hepatitis C	48,255 (6%)	10,014 (21%)	19,051 (39%)	5,257 (11%)	13,933 (29%)
Tuberculosis	6,108 (1%)	2,116 (35%)	2,032 (33%)	774 (13%)	1,186 (19%)
Primary Substance Used					
Alcohol	307,044 (39%)	118,639 (39%)	73,354 (24%)	108,619 (35%)	6,432 (2%)
Cocaine/crack	71,309 (9%)	31,954 (45%)	31,529 (44%)	5,751 (8%)	2,075 (3%)
Marijuana/hashish	90,961 (11%)	75,285 (83%)	12,776 (14%)	1,322 (1%)	1,578 (2%)
Other	325,208 (41%)	56,927 (18%)	84,679 (26%)	100,795 (31%)	82,807 (25%)
Frequency of Primary Drug Use Last 30 Days					
No use last 30 days	170,714 (21%)	107,098 (63%)	31,992 (19%)	5,094 (3%)	26,530 (16%)
1-3 times last 30 days	69,805 (9%)	48,552 (70%)	11,556 (17%)	2,145 (3%)	7,552 (11%)
Daily	451,965 (57%)	70,439 (16%)	132,301 (29%)	199,249 (44%)	49,976 (11%)
Primary Drug Route of Administration					
Injection	161,043 (20%)	23,515 (15%)	48,019 (30%)	50,059 (31%)	39,450 (24%)
Other	633,479 (80%)	259,290 (41%)	154,319 (24%)	166,428 (26%)	53,442 (8%)

APPENDIX 4: PATIENT CHARACTERISTIC BY LEVEL OF CARE IN CALIFORNIA BRIEF ASSESSMENT

Characteristic	Any Level	Outpatient	Residential/ Inpatient	Detox/Crisis	OTP/Outpatient With MAT
Total	36,799 (100%)	15,050 (41%)	18,741 (51%)	222 (1%)	2,786 (8%)
Age					
<18	803 (2%)	688 (86%)	*	*	*
18-24	3,167 (9%)	1,437 (45%)	1,501 (47%)	*	*
25-34	13,646 (37%)	5,439 (40%)	6,963 (51%)	82 (1%)	1,162 (9%)
35-44	9,494 (26%)	3,898 (41%)	4,835 (51%)	59 (1%)	702 (7%)
45-54	5,771 (16%)	2,230 (39%)	3,186 (55%)	40 (1%)	315 (5%)
55-64	3,557 (10%)	1,255 (35%)	1,952 (55%)	22 (1%)	328 (9%)
65+	361 (1%)	103 (29%)	*	*	*
Gender					
Male	22,304 (61%)	8,862 (40%)	11,525 (52%)	146 (1%)	1,771 (8%)
Female	14,430 (39%)	6,171 (43%)	7,169 (50%)	76 (1%)	1,014 (7%)
Race/Ethnicity					
Black non-Hispanic	5,033 (14%)	1,664 (33%)	3,226 (64%)	26 (1%)	117 (2%)
White non-Hispanic	14,880 (40%)	5,565 (37%)	7,508 (50%)	88 (1%)	1,719 (12%)
Hispanic	13,767 (37%)	6,483 (47%)	6,406 (47%)	96 (1%)	782 (6%)
Education					
Less than high school	10,025 (27%)	4,306 (43%)	5,106 (51%)	55 (1%)	558 (6%)
High school	16,655 (45%)	6,620 (40%)	8,354 (50%)	94 (1%)	1,587 (10%)
College or more	10,119 (27%)	4,124 (41%)	5,281 (52%)	73 (1%)	641 (6%)
Employment					
Full-time: 35+ hrs/wk	2,646 (7%)	1,784 (67%)	615 (23%)	*	*
Part-time: <35 hrs/wk	2,197 (6%)	1,492 (68%)	550 (25%)	*	*
Unemployed/not in labor force	31,956 (87%)	11,774 (37%)	17,576 (55%)	*	*
Housing/Residence Status					
Homeless	16,038 (44%)	3,928 (24%)	11,609 (72%)	92 (1%)	409 (3%)
Dependent living	7,602 (21%)	4,168 (55%)	2,616 (34%)	27 (0%)	791 (10%)
Independent living	13,160 (36%)	6,954 (53%)	4,517 (34%)	103 (1%)	1,586 (12%)
Criminal Justice Involvement					
No	22,024 (60%)	7,664 (35%)	11,780 (53%)	176 (1%)	2,404 (11%)
Yes	14,768 (40%)	7,385 (50%)	6,955 (47%)	46 (0%)	382 (3%)
Referral Sources					
Criminal justice services	7,377 (20%)	4,620 (63%)	2,722 (37%)	*	*
Self	15,765 (43%)	5,160 (33%)	7,812 (50%)	142 (1%)	2,651 (17%)
Alcohol/drug program	6,026 (16%)	1,841 (31%)	4,112 (68%)	*	*
Other	7,631 (21%)	3,429 (45%)	4,095 (54%)	*	*
Physical Health Status					
Pregnant at admission	661 (2%)	232 (35%)	371 (56%)	0 (0%)	58 (9%)
Hepatitis C	3,455 (9%)	1,169 (34%)	1,677 (49%)	19 (1%)	590 (17%)
Tuberculosis	892 (2%)	405 (45%)	360 (40%)	0 (0%)	127 (14%)
Primary Substance Used					
Alcohol	9,468 (26%)	4,010 (42%)	5,325 (56%)	104 (1%)	29 (0%)
Cocaine/crack	1,606 (4%)	*	*	*	*
Marijuana/hashish	2,793 (8%)	*	*	*	*
Other	22,940 (62%)	8,494 (37%)	11,577 (50%)	121 (1%)	2,748 (12%)
Frequency of Primary Drug Use Last 30 Days					
No use last 30 days	10,134 (28%)	6,440 (64%)	*	*	*
1-3 times last 30 days	4,034 (11%)	2,036 (50%)	*	*	*
Daily	7,413 (20%)	1,630 (22%)	4,103 (55%)	114 (2%)	1,566 (21%)

Characteristic	Any Level	Outpatient	Residential/ Inpatient	Detox/Crisis	OTP/Outpatient With MAT
Primary Drug Route of Administration					
Injection	6,591 (18%)	1,836 (28%)	3,276 (50%)	55 (1%)	1,424 (22%)
Other	30,060 (82%)	13,139 (44%)	15,398 (51%)	167 (1%)	1,356 (5%)
* Indicates cells with 10 or fewer observations.					

APPENDIX 5: PATIENT CHARACTERISTIC BY LEVEL OF CARE IN CALIFORNIA

Characteristic	Any Level	Outpatient	Residential/ Inpatient	Detox/Crisis	OTP/Outpatient With MAT
Total	125,426 (100%)	55,410 (44%)	48,569 (39%)	1,873 (1%)	19,574 (16%)
Age					
<18	2,833 (2%)	2,478 (87%)	331 (12%)	0 (0%)	24 (1%)
18-24	11,637 (9%)	5,949 (51%)	4,382 (38%)	158 (1%)	1,148 (10%)
25-34	47,227 (38%)	20,564 (44%)	18,820 (40%)	674 (1%)	7,169 (15%)
35-44	31,541 (25%)	13,980 (44%)	12,391 (39%)	460 (1%)	4,710 (15%)
45-54	18,994 (15%)	7,822 (41%)	7,873 (42%)	379 (2%)	2,920 (15%)
55-64	11,581 (9%)	4,171 (36%)	4,374 (38%)	188 (2%)	2,848 (25%)
65+	1,609 (1%)	442 (27%)	398 (25%)	14 (1%)	755 (47%)
Gender					
Male	75,214 (60%)	32,552 (43%)	29,169 (39%)	1,109 (1%)	12,384 (16%)
Female	49,980 (40%)	22,750 (46%)	19,289 (39%)	762 (2%)	7,179 (14%)
Race/Ethnicity					
Black non-Hispanic	14,472 (12%)	6,574 (45%)	5,992 (41%)	247 (2%)	1,659 (11%)
White non-Hispanic	49,616 (40%)	18,299 (37%)	20,347 (41%)	596 (1%)	10,374 (21%)
Hispanic	51,357 (41%)	25,753 (50%)	18,433 (36%)	927 (2%)	6,244 (12%)
Education					
Less than high school	35,597 (28%)	17,053 (48%)	13,132 (37%)	562 (2%)	4,850 (14%)
High school	56,711 (45%)	23,946 (42%)	21,875 (39%)	725 (1%)	10,165 (18%)
College or more	33,114 (26%)	14,407 (44%)	13,562 (41%)	586 (2%)	4,559 (14%)
Employment					
Full-time: 35+ hrs/wk	10,936 (9%)	7,061 (65%)	1,862 (17%)	64 (1%)	1,949 (18%)
Part-time: <35 hrs/wk	8,741 (7%)	5,604 (64%)	1,559 (18%)	64 (1%)	1,514 (17%)
Unemployed/not in labor force	105,745 (84%)	42,741 (40%)	45,148 (43%)	1,745 (2%)	16,111 (15%)
Housing/Residence Status					
Homeless	41,678 (33%)	12,432 (30%)	25,163 (60%)	853 (2%)	3,230 (8%)
Dependent living	29,398 (23%)	16,198 (55%)	9,725 (33%)	231 (1%)	3,244 (11%)
Independent living	54,346 (43%)	26,776 (49%)	13,681 (25%)	789 (1%)	13,100 (24%)
Criminal Justice Involvement					
No	77,200 (62%)	28,567 (37%)	30,464 (39%)	1,487 (2%)	16,682 (22%)
Yes	48,207 (38%)	26,838 (56%)	18,092 (38%)	385 (1%)	2,892 (6%)
Referral Sources					
Criminal justice services	24,622 (20%)	16,618 (67%)	7,587 (31%)	121 (0%)	296 (1%)
Self	65,723 (52%)	20,810 (32%)	25,738 (39%)	1,338 (2%)	17,837 (27%)
Alcohol/drug program	11,095 (9%)	4,479 (40%)	5,676 (51%)	173 (2%)	767 (7%)
Other	23,982 (19%)	13,499 (56%)	9,568 (40%)	241 (1%)	674 (3%)
Physical Health Status					
Pregnant at admission	2,393 (2%)	930 (39%)	*	*	*
Hepatitis C	12,525 (10%)	3,702 (30%)	4,303 (34%)	*	*
Tuberculosis	2,399 (2%)	1,025 (43%)	756 (32%)	*	*
Primary Substance Used					
Alcohol	28,013 (22%)	13,671 (49%)	13,308 (48%)	695 (2%)	339 (1%)
Cocaine/crack	3,992 (3%)	1,943 (49%)	1,932 (48%)	65 (2%)	52 (1%)
Marijuana/hashish	10,514 (8%)	8,158 (78%)	2,209 (21%)	41 (0%)	106 (1%)
Other	82,903 (66%)	31,634 (38%)	31,120 (38%)	1,072 (1%)	19,077 (23%)
Frequency of Primary Drug Use Last 30 Days					
No use last 30 days	37,002 (30%)	24,490 (66%)	9,351 (25%)	146 (0%)	3,015 (8%)
1-3 times last 30 days	12,364 (10%)	7,185 (58%)	4,114 (33%)	79 (1%)	986 (8%)
Daily	29,201 (23%)	6,240 (21%)	11,314 (39%)	988 (3%)	10,659 (37%)

Characteristic	Any Level	Outpatient	Residential/ Inpatient	Detox/Crisis	OTP/Outpatient With MAT
Primary Drug Route of Administration					
Injection	27,028 (22%)	6,363 (24%)	9,241 (34%)	419 (2%)	11,005 (41%)
Other	97,719 (78%)	48,672 (50%)	39,153 (40%)	1,447 (1%)	8,447 (9%)
* Indicates cells with 10 or fewer observations.					

APPENDIX 6: PATIENT CHARACTERISTIC BY RECOMMENDED LEVEL OF CARE IN WASHINGTON STATE

Characteristic	Any Level	Outpatient	Residential/ Inpatient	Detox/Crisis	OTP/Outpatient With MAT
Total (cases [a.k.a. SUD treatment admissions])	23,415 (100%)	14,054 (60%)	7,333 (31%)	437 (2%)	1,591 (7%)
Age					
≤64	20,966 (90%)	13,963 (67%)	6,211 (30%)	0 (0%)	792 (4%)
≥65	148 (1%)	91 (61%)	46 (31%)	0 (0%)	11 (7%)
Gender					
Male	13,993 (60%)	8,375 (60%)	4,517 (32%)	242 (2%)	859 (6%)
Female	9,398 (40%)	5,679 (60%)	2,792 (30%)	195 (2%)	732 (8%)
Race/Ethnicity					
Black	448 (2%)	326 (73%)	97 (22%)	25 (6%)	0 (0%)
White	17,377 (74%)	10,203 (59%)	5,542 (32%)	362 (2%)	1,270 (7%)
Hispanic	1,738 (7%)	1,271 (73%)	269 (15%)	53 (3%)	145 (8%)
Education					
Less than high school diploma	4,711 (20%)	2,862 (61%)	1,421 (30%)	38 (1%)	390 (8%)
High school diploma	7,280 (31%)	4,711 (65%)	1,847 (25%)	56 (1%)	666 (9%)
More than high school	1,795 (8%)	1,081 (60%)	577 (32%)	12 (1%)	125 (7%)
Employment					
Full-time: 35+ hrs/wk	2,450 (10%)	1,983 (81%)	313 (13%)	0 (0%)	154 (6%)
Part-time: <35 hrs/wk	966 (4%)	789 (82%)	165 (17%)	0 (0%)	12 (1%)
Unemployed/not in labor force	12,404 (53%)	6,987 (56%)	4,142 (33%)	126 (1%)	1,149 (9%)
Marital Status					
Married	2,836 (12%)	1,976 (70%)	698 (25%)	19 (1%)	143 (5%)
Not married	12,667 (54%)	7,718 (61%)	3,972 (31%)	126 (1%)	851 (7%)
Housing/Residence Status					
Private residence	10,323 (44%)	6,996 (68%)	2,212 (21%)	82 (1%)	1,033 (10%)
Homeless	3,289 (14%)	1,268 (39%)	1,849 (56%)	43 (1%)	129 (4%)
Residential care	253 (1%)	120 (47%)	116 (46%)	0 (0%)	17 (7%)
Institutional setting/jail/correctional facility	419 (2%)	292 (70%)	76 (18%)	0 (0%)	51 (12%)
Other/unknown/not collected	8,760 (37%)	5,364 (61%)	2,885 (33%)	297 (3%)	214 (2%)
Primary Substance Used					
Heroin	6,175 (26%)	3,117 (50%)	1,825 (30%)	111 (2%)	1,122 (18%)
Other opiates and synthetics	3,273 (14%)	2,266 (69%)	596 (18%)	59 (2%)	352 (11%)
Other	12,334 (53%)	7,527 (61%)	4,531 (37%)	255 (2%)	21 (0%)
Frequency of Substance Use					
No use in the past month	6,239 (27%)	5,511 (88%)	600 (10%)	0 (0%)	128 (2%)
At least once in the past month	4,797 (20%)	3,163 (66%)	1,433 (30%)	59 (1%)	142 (3%)
Daily use	10,558 (45%)	4,136 (39%)	4,868 (46%)	347 (3%)	1,207 (11%)
Primary Route					
Injection drug use	5,107 (22%)	2,710 (53%)	1,523 (30%)	86 (2%)	788 (15%)
Other	16,525 (71%)	10,246 (62%)	5,227 (32%)	339 (2%)	713 (4%)
Sexual Orientation					
Heterosexual	21,020 (90%)	12,670 (60%)	6,475 (31%)	362 (2%)	1,513 (7%)
LGBTQIA+	1,481 (6%)	853 (58%)	530 (36%)	60 (4%)	38 (3%)

APPENDIX 7: RECOMMENDED LEVEL OF CARE BY COUNTY IN NEW YORK

County	Total (N)	Outpatient		Residential/Inpatient		Withdrawal Management		OTP/Outpatient With MAT	
		N	%	N	%	N	%	N	%
All Counties	794,522	282,805	36	202,338	25	216,487	27	92,892	12
Albany	12,097	5,068	42	3,985	33	1,410	12	1,634	14
Allegany	1,520	620	41	457	30	176	12	267	18
Bronx	93,369	24,903	27	20,422	22	36,003	39	12,041	13
Broome	12,255	5,332	44	3,698	30	2,106	17	1,119	9
Cattaraugus	3,166	1,364	43	882	28	214	7	706	22
Cayuga	3,263	1,493	46	802	25	461	14	507	16
Chautauqua	4,389	1,633	37	1,384	32	508	12	864	20
Chemung	3,743	2,032	54	996	27	256	7	459	12
Chenango	1,568	874	56	348	22	192	12	154	10
Clinton	3,150	1,269	40	794	25	250	8	837	27
Columbia	2,765	1,122	41	759	27	444	16	440	16
Cortland	3,058	1,214	40	948	31	401	13	495	16
Delaware	994	384	39	334	34	140	14	136	14
Dutchess	16,301	6,255	38	4,536	28	3,752	23	1,758	11
Erie	43,638	17,843	41	12,279	28	6,110	14	7,406	17
Essex	1,159	616	53	293	25	77	7	173	15
Franklin	1,617	513	32	725	45	177	11	202	12
Fulton	1,362	511	38	407	30	164	12	280	21
Genesee	3,067	1,189	39	1,064	35	228	7	586	19
Greene	2,333	905	39	663	28	356	15	409	18
Hamilton	61	18	30	18	30	*	*	11	18
Herkimer	1,867	618	33	584	31	200	11	465	25
Jefferson	4,906	1,871	38	1,597	33	551	11	887	18
Kings	85,787	28,159	33	17,086	20	32,335	38	8,207	10
Lewis	823	355	43	255	31	91	11	122	15
Livingston	2,631	1,338	51	483	18	281	11	529	20
Madison	2,314	855	37	694	30	331	14	434	19
Monroe	39,099	17,245	44	10,921	28	6,800	17	4,133	11
Montgomery	1,307	347	27	491	38	194	15	275	21
Nassau	31,074	12,678	41	7,681	25	7,995	26	2,720	9
New York	97,612	21,949	22	23,923	25	43,522	45	8,218	8
Niagara	14,480	5,468	38	5,281	36	1,089	8	2,642	18
Oneida	11,930	4,192	35	3,856	32	1,190	10	2,692	23
Onondaga	25,368	9,445	37	7,237	29	4,571	18	4,115	16
Ontario	5,648	2,220	39	1,626	29	972	17	830	15
Orange	16,720	6,646	40	4,964	30	3,032	18	2,078	12
Orleans	1,268	421	33	398	31	179	14	270	21
Oswego	5,302	2,135	40	1,326	25	920	17	921	17
Otsego	1,192	434	36	409	34	166	14	183	15
Putnam	2,759	1,053	38	621	23	680	25	405	15
Queens	53,054	19,414	37	11,875	22	17,591	33	4,174	8
Rensselaer	5,922	2,480	42	1,749	30	664	11	1,029	17
Richmond	20,507	6,044	29	5,109	25	6,627	32	2,727	13
Rockland	8,118	3,732	46	1,973	24	1,640	20	773	10
St. Lawrence	4,423	1,812	41	1,430	32	613	14	568	13
Saratoga	4,926	2,152	44	1,425	29	594	12	755	15
Schenectady	7,688	3,581	47	2,143	28	999	13	965	13
Schoharie	389	67	17	214	55	79	20	29	7
Schuyler	512	327	64	97	19	31	6	57	11
Seneca	1,554	615	40	425	27	278	18	236	15
Steuben	4,248	2,307	54	941	22	440	10	560	13
Suffolk	58,584	22,733	39	15,951	27	15,246	26	4,654	8

County	Total (N)	Outpatient		Residential/Inpatient		Withdrawal Management		OTP/Outpatient With MAT	
		N	%	N	%	N	%	N	%
Sullivan	5,226	1,674	32	1,955	37	1,190	23	407	8
Tioga	926	325	35	384	41	120	13	97	10
Tompkins	3,588	1,583	44	1,093	30	518	14	394	11
Ulster	8,124	2,678	33	2,020	25	2,500	31	926	11
Warren	2,812	1,646	59	655	23	194	7	317	11
Washington	2,079	1,093	53	520	25	157	8	309	15
Wayne	3,975	1,484	37	1,148	29	759	19	584	15
Westchester	29,024	13,615	47	5,527	19	7,476	26	2,406	8
Wyoming	844	355	42	233	28	96	11	160	19
Yates	1,037	501	48	238	23	143	14	155	15

* Indicates cells with 10 or fewer observations.

APPENDIX 8: LEVEL OF CARE BY COUNTY IN CALIFORNIA BRIEF ASSESSMENT

County	Total (N)	Outpatient		Residential/Inpatient		Withdrawal Management		OTP/Outpatient With MAT	
		N	%	N	%	N	%	N	%
All Counties	40,234	15,079	37	18,741	47	230	1	2,786	7
Alameda	3,649	826	23	2,711	74	0	0	30	1
Contra Costa	2,131	*	*	1,124	53	0	0	*	*
El Dorado	179	26	15	153	85	0	0	0	0
Fresno	1,560	848	54	*	*	0	0	*	*
Humboldt	146	*	*	116	79	0	0	*	*
Imperial	15	*	*	*	*	0	0	0	0
Kern	409	*	*	*	*	0	0	370	90
Lassen	*	*	*	*	*	0	0	0	0
Los Angeles	11,765	3,209	27	5,018	43	226	2	57	0
Madera	0	0	0	0	0	0	0	0	0
Marin	59	23	39	35	59	0	0	0	0
Mendocino	64	*	*	*	*	0	0	0	0
Merced	81	*	*	42	52	0	0	*	*
Modoc	14	14	100	0	0	0	0	0	0
Monterey	*	*	*	*	*	*	*	0	0
Napa	36	24	67	*	*	0	0	*	*
Nevada	539	48	9	489	91	0	0	0	0
Orange	21	*	*	*	*	0	0	0	0
Placer	419	214	51	178	42	*	*	*	*
Riverside	*	*	*	*	*	0	0	*	*
Sacramento	35	*	*	15	43	0	0	*	*
San Bernardino	897	*	*	881	98	*	*	0	0
San Diego	10,764	4,584	43	4,826	45	*	*	*	*
San Francisco	86	15	17	70	81	0	0	0	0
San Joaquin	200	*	*	139	70	0	0	*	*
San Luis Obispo	892	797	89	83	9	0	0	0	0
San Mateo	427	415	97	12	3	0	0	0	0
Santa Barbara	2,229	1,346	60	852	38	0	0	18	1
Santa Clara	280	218	78	*	*	0	0	*	*
Santa Cruz	*	0	0	0	0	0	0	0	0
Shasta	251	*	*	186	74	*	*	*	*
Siskiyou	11	*	*	*	*	0	0	0	0
Solano	219	85	39	65	30	0	0	68	31
Stanislaus	2,401	832	35	751	31	0	0	818	34
Tulare	*	*	*	*	*	0	0	0	0
Ventura	*	*	*	*	*	*	*	0	0
Yolo	425	285	67	125	29	0	0	15	4

* Indicates cells with 10 or fewer observations.

APPENDIX 9: LEVEL OF CARE BY COUNTY IN CALIFORNIA

County	Total (N)	Outpatient		Residential/Inpatient		Withdrawal Management		OTP/Outpatient With MAT	
		N	%	N	%	N	%	N	%
All Counties	127,774	55,433	43	48,569	38	1,873	1	19,574	15
Alameda	4,010	2,306	58	1,089	27	*	*	*	*
Contra Costa	98	*	*	53	54	0	0	*	*
El Dorado	372	112	30	260	70	0	0	0	0
Fresno	3,423	1,642	48	1,249	36	0	0	528	15
Humboldt	178	23	13	26	15	0	0	129	72
Imperial	1,277	853	67	77	6	0	0	347	27
Kern	3,716	1,823	49	708	19	24	1	1,154	31
Lassen	0	0	0	0	0	0	0	0	0
Los Angeles	37,297	15,536	42	13,923	37	1,835	5	4,094	11
Madera	*	0	0	0	0	*	*	*	*
Marin	2,048	*	*	1,346	66	*	*	*	*
Mendocino	71	*	*	*	*	0	0	0	0
Merced	1,182	652	55	307	26	0	0	223	19
Modoc	*	*	*	*	*	0	0	0	0
Monterey	1,846	817	44	937	51	0	0	72	4
Napa	620	353	57	262	42	0	0	0	0
Nevada	574	151	26	401	70	0	0	20	3
Orange	8,228	3,016	37	4,167	51	0	0	1,015	12
Placer	574	152	26	192	33	*	*	*	*
Riverside	15,018	6,392	43	5,126	34	0	0	3,486	23
Sacramento	2,208	1,249	57	*	*	*	*	*	*
San Bernardino	3,758	614	16	2,701	72	0	0	441	12
San Diego	16,746	6,954	42	6,348	38	*	*	*	*
San Francisco	5,094	1,008	20	2,636	52	0	0	1,450	28
San Joaquin	2,581	*	*	1,255	49	*	*	*	*
San Luis Obispo	1,145	941	82	77	7	0	0	115	10
San Mateo	727	461	63	185	25	0	0	81	11
Santa Barbara	2,631	1,788	68	*	*	*	*	*	*
Santa Clara	6,109	4,344	71	1,614	26	0	0	0	0
Santa Cruz	2,058	493	24	1,104	54	0	0	461	22
Shasta	138	41	30	*	*	0	0	*	*
Siskiyou	*	*	*	*	*	*	*	*	*
Solano	94	*	*	74	79	0	0	*	*
Stanislaus	2,406	808	34	693	29	0	0	905	38
Tulare	522	255	49	179	34	0	0	84	16
Ventura	677	*	*	122	18	*	*	*	*
Yolo	354	102	29	134	38	0	0	118	33

* Indicates cells with 10 or fewer observations.

APPENDIX 10: LEVEL OF CARE BY COUNTY IN WASHINGTON STATE

County	Total (N)	Outpatient		Residential/Inpatient		Withdrawal Management		OTP/Outpatient With MAT	
		N	%	N	%	N	%	N	%
All Counties	23,391	14,054	60	7,309	31	437	2	1,591	7
Adams	15	15	100	0	0	0	0	0	0
Asotin	143	108	76	35	24	0	0	0	0
Benton	1,073	764	71	287	27	22	2	0	0
Chelan	245	165	67	69	28	11	4	0	0
Clallam	844	567	67	277	33	0	0	0	0
Clark	975	682	70	279	29	14	1	0	0
Columbia	0	0	0	0	0	0	0	0	0
Cowlitz	1,067	807	76	260	24	0	0	0	0
Douglas	102	76	75	26	25	0	0	0	0
Ferry	0	0	0	0	0	0	0	0	0
Franklin	219	169	77	50	23	0	0	0	0
Garfield	0	0	0	0	0	0	0	0	0
Grant	316	211	67	89	28	16	5	0	0
Grays Harbor	445	271	61	174	39	0	0	0	0
Island	207	150	72	41	20	0	0	16	8
Jefferson	154	112	73	42	27	0	0	0	0
King	1,457	924	63	362	25	21	1	150	10
Kitsap	1,580	972	62	608	38	0	0	0	0
Kittitas	132	92	70	40	30	0	0	0	0
Klickitat	0	0	0	0	0	0	0	0	0
Lewis	561	415	74	146	26	0	0	0	0
Lincoln	0	0	0	0	0	0	0	0	0
Mason	434	264	61	170	39	0	0	0	0
Okanogan	91	45	49	46	51	0	0	0	0
Pacific	109	64	59	45	41	0	0	0	0
Pend Oreille	20	0	0	20	100	0	0	0	0
Pierce	1,097	515	47	545	50	19	2	18	2
San Juan	0	0	0	0	0	0	0	0	0
Skagit	806	499	62	226	28	0	0	81	10
Skamania	0	0	0	0	0	0	0	0	0
Snohomish	3,463	2,152	62	738	21	58	2	515	15
Spokane	3,261	1,307	40	1,240	38	154	5	560	17
Stevens	96	42	44	35	36	0	0	19	20
Thurston	1,280	892	70	388	30	0	0	0	0
Wahkiakum	0	0	0	0	0	0	0	0	0
Walla Walla	116	64	55	52	45	0	0	0	0
Whatcom	789	504	64	193	24	0	0	92	12
Whitman	29	15	52	14	48	0	0	0	0
Yakima	1,367	948	69	404	30	15	1	0	0
County not collected	135	115	85	0	0	0	0	20	15

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