Mapping the Gap:

An Assessment of Capacity, Cost-Benefits, and Disparities in Utilization in Ohio Recovery Housing

Acknowledgements

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Executive Summary

This assessment was directed by Ohio Recovery Housing (ORH) and utilizes a novel assessment approach to quantify gaps in recovery housing capacity across the Ohio's County Behavioral Health Authorities' Regions. The assessment also examines patterns of disparities in access across selected demographic categories and provides estimates of potential cost savings with continued expansion of recovery housing in Ohio.

Recovery Housing means housing for individuals recovering from alcoholism or drug addiction that provides an alcohol and drug-free living environment, peer support, assistance with obtaining alcohol and drug addiction services, and other alcoholism and drug addiction recovery assistance. Recovery homes may also be called recovery residences, sober homes, sober living, or other names.

Key Findings

- Across Ohio, 31% of recovery housing capacity is being met across NARR levels, 1, 2 and 3.

- Ohio experienced an estimated $35 million in cost savings in 2022 due to the utilization of recovery housing capacity. If Ohio were to expand access to recovery housing capacity and enrollment by 25%, Ohio would expect to see an additional $8.5 million in cost savings per year.

- Including cost savings and benefits to individuals, the overall economic impact due to Ohio's utilization of recovery housing capacity in 2022 is estimated as $51 million, with another $21 million forecasted if Ohio expands recovery housing capacity by 25%.

- Based upon demographic records collected by recovery housing, there are no disparities in utilization of services by race or gender. The race and ethnicity of residents aligns with the demographics of Ohio, but there is significant variation across regions.

- There is variation across the state in the capacity of recovery housing, both by Level and by County behavioral health authority regions.

- The recovery housing level with the largest gap in capacity (only 8% of total need being met) is Level 1

- The recovery housing level with the smallest gap in capacity is Level 3 (with 83% of the total need being met)

The assessment was intended to quantify three key questions for ORH.

1. What is the current capacity of the existing bed infrastructure of recovery housing in Ohio and does this meet the projected demand for this service?

2. What are projections for the cost savings to the behavioral health treatment care system in Ohio with additional investments in recovery housing?

3. Are there disparities in access or utilization by geography, race, gender, and socio-economic status for recovery housing?

Introduction

Recovery Housing provide an essential supportive service for individuals looking to stabilize in their recovery journey. The activities of the Ohio Department of Mental Health and Addiction Services (Ohio MHAS), regional behavioral health authorities, and Ohio Recovery Housing (ORH) have systematically expanded opportunities for Ohioans to access this type of care, and to be confident that the residence they access is certified. Certification can ensure consistency in the quality of the home, as well as aid potential residents in understanding which type of recovery housing best fits their needs and wants. Based upon the Recovery Housing in Ohio: 2021 Environmental Scan, Ohio has invested over $80 million in recovery housing since 2015, with ORH and certification of residences being a central tenant in the success of access expansion.

The environmental scan noted a few key areas for additional research and the following were examined in this report.

- Identify ways to monitor demand for recovery housing, perhaps by extending the use of ORH's outcomes tool and waiting lists, and finding additional ways to measure unmet needs in communities served.

- Conduct research to assess the true demand for recovery housing and its types, levels, and characteristics at community, county, or state levels. Such research could help to inform an intentional development plan for recovery housing.

- Support research to assess the impact of length of stay, resident subsidies and self-pay strategies, and other related factors that may drive outcomes.

- Support research on the recovery housing needs of specific populations, as well as on the value and outcomes of providing culturally specific recovery housing.

ORH collaborated with consultants Mighty Crow and JG Research & Evaluation (JG) to complete a gaps analysis of Recovery Housing throughout the state of Ohio. JG applied their gap analysis assessment tool called CAST to produce estimates of saturation for recovery housing by level and gender of bed for each county in the state. CAST applies equations developed by JG to estimate bed need and demand, based upon the population characteristics of each county and estimates of the population who are likely to utilize a service if it is available. The collaboration with ORH allowed JG to develop algorithms specific to the NARH levels of recovery housing (1, 2, and 3) for Ohio.

ORH is a national leader among state-level recovery housing credentialing organizations in collecting data from recovery housing operators and these data proved to be essential for the development of the CAST equations for recovery housing. Through their provider portal, ORH receives client-level data and capacity information from over 300 recovery homes in Ohio. These efforts preceded the collaboration with JG and were essential to integrating recovery housing into the CAST assessment framework.

The assessment was intended to quantify three key questions for ORH.

1. What is the current capacity of the existing bed infrastructure of recovery housing in Ohio and does this meet the projected demand for this service?

2. What are projections for the cost savings to the behavioral health treatment care system in Ohio with additional investments in recovery housing?

3. Are there disparities in access or utilization by geography, race, gender, and socio-economic status for recovery housing? CAST was used to produce the analytical models used to answer each of the first two key questions.

CAST was used to produce the analytical models used to answer each of the first two key questions. A separate analysis that compared county-level population characteristics gathered from the American Community Survey (ACS) against client-level data collected by ORH was used to answer key question number 3. A full methodology for each of these assessment stages is presented in the appendix, with a brief overview at the start of each section of the report.

ORH utilizes the National Association of Recovery Residences (NARR) standards for Levels of residence. Each level reflects a variation in intensity of support services provided, and each level is intended to provide access to housing and recovery support services for an individual.

Figure 1. NARR levels of support

National Alliance of Recovery Residences Levels of Support

1 **Level I Houses:** Peer-run houses that operate democratically, generally without paid positions. Services include drug screenings and house meetings. Housing often provided as shared living within a single-family residence.

2 **Level II Houses:** Residences monitored by house managers or senior residents. Clinical services are unavailable on-site, but there may be drug screening, house meetings, and peer-run groups. Houses have structure and rules for residents. Housing often provided as shared living within a single-family residence.

3 **Level III Houses:** Supervised houses that have an organizational hierarchy with policies and procedures in place to facilitate recovery and staffed by a facility manager, certified staff, or case managers. Services emphasize life skills development and using clinical services within the community; programs provide limited services. Housing is in various types of residential settings.

4 **Level IV Houses:** Offered through a service provider with an organizational hierarchy, clinical supervision, and administrative oversight. Clinical services are in-house. Level IV residences are often a *step-down house* within a continuum of substance use treatment and recovery supports. Housing is typically within a treatment center or institutional setting. (The State of Ohio considers Level IV house residential treatment that requires licensure by Ohio MHAS.)

Level 4 was not included in this study, as Level 4 residences are considered residential treatment providers and are licensed by the Ohio Department of Mental Health and Addiction Services. Levels 1-3 are used throughout the report to provide estimates of capacity, cost savings, and disparities in access and utilization.

Results

Section 1 – CAST state-wide capacity assessment

Key Question: What is the current capacity of the existing bed infrastructure of recovery housing in Ohio and does this meet the projected demand for this service?

CAST provides state-level organizations with estimates of program saturation, which can inform planning for the development of additional residences in geographic areas with low program saturation. The basic logic of CAST is to use federal data sources to produce estimates of the likely population of service users in a bounded geography. With this estimate as the base-population of potential users of recovery housing, the CAST approach then applies algorithms developed by JG to produce estimated service needs. A full explanation of the approach is outlined in the Appendix. For this study, county and behavioral health service region was the primary unit of analysis, and these totals were aggregated for state-level estimates of program saturation and need.

The following equation is used for CAST estimates:

$$\frac{\text{Relevant Population * Program usage rate * Frequency}}{\text{Group size}}$$

Relevant population – Estimate of the total number of individuals in a county or region who could use the intervention (broken down further below)

Usage rate – Estimate of the eligible population who are likely to use the service

Frequency – Estimate of the frequency with which the population will use the service in one year

Group size – Estimate of the total number of individuals who are served by an intervention (units vary by intervention type)

The relevant population is an estimate is based upon specific measures from the National Survey on Drug Use and Health (NSDUH). Usage rate is based upon the existing research literature on recovery housing utilization and was modified with specific data on service utilization from the ORH Outcomes Tools. The frequency of use was based upon the existing research literature on the frequency of engagement and was modified with data from the ORH Outcomes Tools. Group size was based upon data from ORH.

The key concept being estimated in a CAST assessment is the capacity of a geographic region to provide a service to likely users. In this study, recovery housing were the intervention of interest, and the unit of analysis was bed. Bed was selected because there is variation in the size of a given residence, and a bed could be utilized multiple times over the course of a year by different individuals. This approach allows capacity estimates to be based on care infrastructure, not solely on prevalence in the population. In this project, bed capacity references the number of people who can be accommodated in a residence.

![Ohio Recovery Housing logo]

In collaboration with ORH, JG staff decided to include Level 1, 2 and 3 recovery housing in this study, regardless of whether they were currently certified or not. All data inputs on bed capacity were provided by ORH. At the time the analysis was completed (Spring 2023), Ohio did not require that recovery housing operators become certified or registered to operate. Therefore, there was no comprehensive list of recovery homes in the state of Ohio. ORH used the following parameters for inclusion to achieve the best capacity estimates possible given Ohio's existing policy landscape:

- Organizations that were certified by Ohio Recovery Housing

- Organizations that applied for certification in the past five years

- Organizations that applied for state or federal funds to support recovery housing

- Organizations reported to be offering recovery housing by local county boards of mental health and addiction services

- Organizations that completed an online survey distributed by Ohio Recovery Housing indicating that they were operating an existing recovery housing program

With this multifaceted approach, the ORH recovery housing capacity dataset included almost 300 organizations with over 800 residences across all three levels. For the analysis, beds were used as the unit of estimation and this information was based upon data provided to ORH by operators. As with any assessment, there are likely to be some active residences that were not included in the ORH dataset and there may be residences that have closed or changed capacity. Additionally, level of support for uncertified homes may have been reported inaccurately. This is most likely to occur with Level 3 recovery homes that could potentially be considered residential treatment (Level 4) facilities, potentially leading to a higher the number of Level 3 homes in the analysis than actually exist in Ohio. These limitations can be addressed with broad efforts to improve data reporting from residences through mandates or requirements.

It is important to note that there was an attempt to produce estimates of capacity for individuals who identify outside of the male/female sex binary, but these were unable to be provided due to the lack of precision of federal data collection to produce accurate population estimates. Data are presented on sex and gender of residents within the facilities included in the ORH dataset. For each Level, we estimate capacity to serve any resident (regardless of gender) who is likely to use a recovery housing, as well as individual estimates for beds dedicated for female or male residents. These limitations can be addressed with broader efforts to improve data collection and reporting at the federal level for individuals who do not identify as male or female.

Table 1 provides a summary of the estimated need, current bed capacity, and proportion of need that is met within Ohio for NARH Level 1 recovery housing. Estimated need is produced through the method outlined above using the CAST algorithm. Current capacity is based upon data provided by ORH. The estimated percent of need met is the proportion of estimated need/current capacity. Across the state, there is a gap of 92% or 5,313 beds. This proportion of need is also reflected in the Level 1 beds that are specifically allocated for female residents (13% of need) and male residents (8% of need).

Table 1. Statewide estimates of Level 1 recovery housing bed capacity - By sex

Statewide Bed Needs - Level 1			
INTERVENTION	ESTIMATED NEED	CURRENT CAPACITY	ESTIMATED PERCENT OF NEED MET
All	5,769	456	8%
Female	1,826	238	13%
Male	3,943	335	8%

Table 2 provides a summary of the estimated need, current bed capacity, and proportion of need that is met within Ohio for NARH Level 2 recovery housing. Across the state, there is a gap of 68% or 7,887 beds. The estimated percent of need met for female residents (44% of need) is higher than the percent need for male residents (30% of need), which is closer to the overall estimated need of 32%.

Table 2. Statewide estimates of Level II recovery housing bed capacity – By sex

Statewide Bed Needs - Level 2			
INTERVENTION	ESTIMATED NEED	CURRENT CAPACITY	ESTIMATED PERCENT OF NEED MET
All	11,672	3,785	32%
Female	3,693	1,627	44%
Male	7,979	2,356	30%

Table 3 provides a summary of the estimated need, current bed capacity, and proportion of need that is met within Ohio for NARH Level 3 recovery housing. Across the state, there is a gap of 17% or 339 beds. The estimated percent of need met for female residents (70% of need) is lower than the percent need for male residents (87% of need), highlighting that women are disproportionately underserved as compared to men.

Table 3. Statewide estimates of Level III recovery housing bed capacity – By sex

Statewide Bed Needs - Level 3			
INTERVENTION	ESTIMATED NEED	CURRENT CAPACITY	ESTIMATED PERCENT OF NEED MET
All	2,148	1,789	83%
Female	1,301	915	70%
Male	1,255	1,088	87%

Based upon this assessment, Table 4 shows that the recovery housing bed capacity across all levels is 31% of need with slightly higher proportion of need for female dedicated beds (41%) than male (29%).

Table 4. Statewide estimates of recovery housing bed capacity across all levels – by sex

Statewide All Levels			
INTERVENTION	ESTIMATED NEED	CURRENT CAPACITY	ESTIMATED PERCENT OF NEED MET
All	19,588	6,030	31%
Female	6,820	2,780	41%
Male	13,177	3,779	29%

Although there have been very significant gains in the capacity of recovery housing in Ohio since 2013, this assessment demonstrates that gaps remain across the state, with important variation across Levels 1, 2 and 3. Level 1 beds are the least available and reflect the lowest comparative capacity. In some ways, increasing level 1 and level 2 beds capacity may be the next stage in ensuring a comprehensive continuum of care across Ohio for individuals who will benefit from recovery housing access and utilization.

Figure 2. Overall proportion of need for recovery housing bed met by current capacity in Ohio

Proportion of Need Met by Current Bed Capacity

	All	Female	Male
Level 1	8%	13%	8%
Level 2	32%	44%	30%
Level 3	83%	70%	87%
All Levels	31%	41%	29%
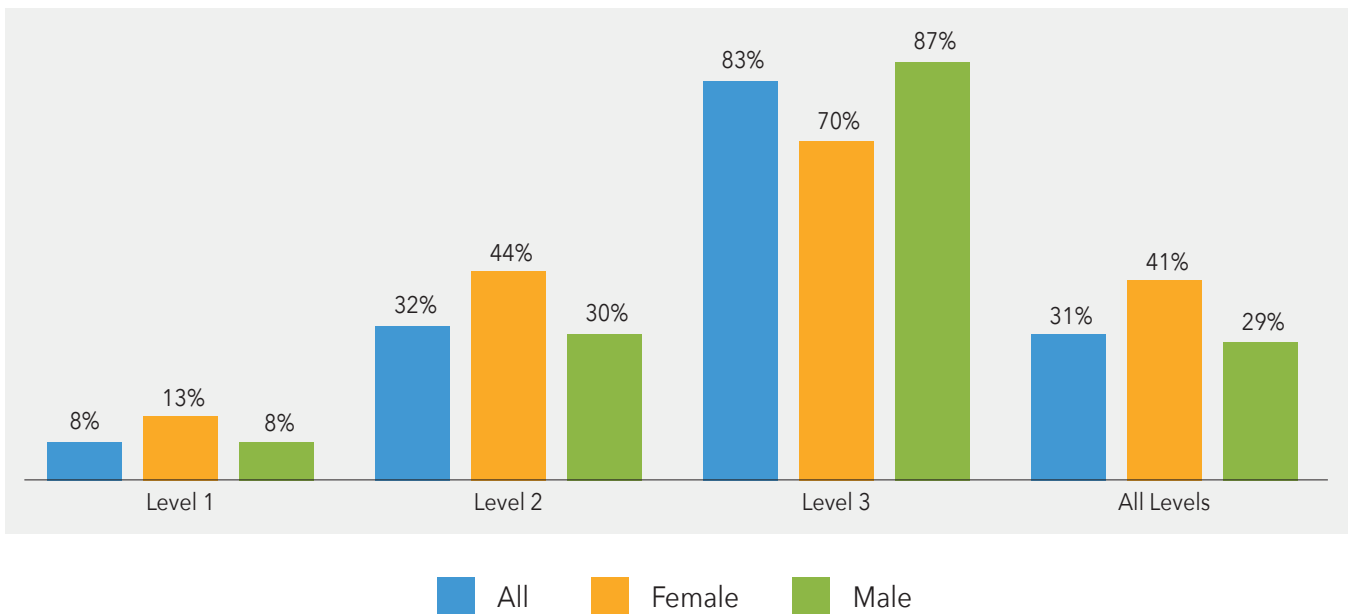
Section 2 – CAST by region/county

Key Question: What is the current capacity of the existing bed infrastructure of recovery housing in Ohio and does this meet the projected demand for this service?

The state of Ohio behavioral health care system is managed by regional or county-level behavioral health authorities. County behavioral health authority boards work to support a comprehensive and complete continuum of care, with specific efforts at supporting the establishment of at least one recovery house in each county (Environmental scan, 2021). Based upon these commitments, the assessment examined patterns of capacity by service area.

In recognition of the geographic distribution of services, we completed the CAST assessment by county and by authority area. Results at the authority area are presented in Tables 5-7. As is viewable in these tables, there is considerable variation in capacity by region. Of note, there are many areas of the state that lack any recovery housing. In addition to depiction by table, Figure 3 portrays these capacity estimates at the county level through a series of maps. Figure 3 also includes a map by authority area.

It is important to note that the estimates of capacity in Table 5 are presented in total as well as disaggregated by sex. Data on recovery housing beds that are limited to only one sex (often all beds in a single-sex house) is not consistently reported by all recovery housing. The estimates used the most precise data provided by each recovery housing, and when information was not provided on whether beds were restricted to a single sex, it was assumed that all beds in a residence could be used by anyone. Estimates for each sex then considered the estimated capacity if all beds restricted to that sex as well as all unrestricted or unknown beds were used by that sex. This means that estimates of total capacity and estimates of capacity by sex are not additive or able to be directly compared.

The geography of access to recovery housing can be complicated by the interest, desire, or need of clients to reside in a facility that is not within their county or service area. In some cases, the CAST estimates produced for a given region equal more than 100% of capacity. These regions are likely serving individuals who are not from the counties within the service area. This is supported by findings from a recent analysis of the ORH survey data, where nearly one third of individuals moving into a recovery housing reported that they had moved to a different county to access recovery housing (Gallant, 2023).

An ideal recovery housing service system would allow for choice among potential residents, with geographic access throughout the state. In this scenario, a resident would be able to choose if they preferred to access services in their home community, or if a new location would be more supportive of their recovery goals. It is currently unclear if residents are moving to areas of higher concentration of recovery homes because of choice and preference, because it is simply where services are known to be available, or because of other factors.

Additionally, an indication of over 100% capacity does not necessarily mean that all individuals within that community have access, in particular for Level 3 recovery housing. Many Level 3 recovery homes are operated by treatment program providers and restrict housing to only individuals who are involved in their treatment or other programs. Individuals who are not eligible or are not interested in their other programs or services may not have access to the housing options offered by these housing programs.

Table 5. Estimated percent of need met for Levels 1-3 by Behavioral Health Authority Region

REGION	Level 1			Level 2			Level 3		
	All	Female	Male	All	Female	Male	All	Female	Male
Adams, Lawrence, Scioto	0%	0%	0%	59%	57%	60%	386%	565%	262%
Allen, Hardin, Auglaize	0%	0%	0%	102%	116%	96%	187%	167%	200%
Ashland	0%	0%	0%	15%	30%	8%	121%	298%	0%
Ashtabula	0%	0%	0%	36%	20%	43%	0%	0%	0%
Athens, Hocking, Vinton	9%	0%	13%	33%	46%	28%	71%	0%	118%
Belmont, Harrison, Monroe	0%	0%	0%	0%	0%	0%	0%	0%	0%
Brown	0%	0%	0%	16%	0%	23%	0%	0%	0%
Butler	0%	0%	0%	0%	0%	0%	0%	0%	0%
Champaign, Logan	0%	0%	0%	21%	38%	17%	0%	0%	0%
Clark, Greene, Madison	0%	0%	0%	22%	44%	12%	51%	60%	46%
Clermont	0%	0%	0%	17%	23%	15%	0%	0%	0%
Clinton, Warren	0%	0%	0%	3%	0%	4%	34%	26%	39%
Columbiana	0%	0%	0%	5%	0%	7%	0%	0%	0%
Coshocton, Guernsey, Muskingum, Perry, Morgan, Noble	0%	0%	0%	24%	20%	11%	28%	99%	0%
Crawford, Marion	99%	338%	140%	76%	113%	61%	119%	586%	97%
Cuyahoga	15%	30%	13%	47%	69%	40%	104%	150%	120%
Darke, Miami, Shelby	7%	13%	4%	9%	19%	4%	55%	39%	66%
Delaware, Morrow	0%	0%	0%	0%	0%	0%	0%	0%	0%
Erie	0%	0%	0%	20%	0%	29%	562%	1237%	91%
Fairfield	0%	0%	0%	59%	113%	72%	52%	0%	86%
Fayette, Pickaway, Pike, Ross, Highland	0%	0%	0%	22%	52%	20%	165%	266%	102%
Franklin	1%	3%	0%	54%	68%	49%	32%	14%	44%
Gallia, Jackson, Meigs	0%	0%	0%	25%	0%	36%	134%	331%	0%
Geauga	0%	0%	0%	40%	83%	20%	0%	0%	0%
Hamilton	6%	7%	6%	57%	88%	54%	50%	29%	65%
Hancock	0%	0%	0%	20%	42%	10%	0%	0%	0%
Henry, Defiance, Fulton, Williams	0%	0%	0%	0%	0%	0%	0%	0%	0%
Holmes, Wayne	68%	152%	23%	0%	0%	0%	0%	0%	0%
Huron	0%	0%	0%	32%	45%	26%	0%	0%	0%
Jefferson	0%	0%	0%	0%	0%	0%	0%	0%	0%
Knox, Licking	0%	0%	0%	50%	60%	45%	0%	0%	0%
Lake	3%	0%	5%	11%	21%	7%	0%	0%	0%
Lorain	6%	0%	9%	17%	31%	10%	269%	145%	353%
Lucas	32%	48%	42%	11%	9%	12%	119%	133%	164%
Mahoning	22%	0%	33%	36%	16%	45%	0%	0%	0%
Medina	5%	0%	8%	15%	11%	18%	27%	66%	0%
Mercer, Paulding, Van Wert	0%	0%	0%	30%	50%	22%	0%	0%	0%
Montgomery	24%	24%	32%	40%	66%	33%	68%	73%	64%
Ottawa, Sandusky, Seneca, Wyandot	0%	0%	0%	22%	36%	16%	23%	0%	38%
Portage	0%	0%	0%	40%	89%	40%	116%	191%	80%
Preble	0%	0%	0%	24%	39%	18%	0%	0%	0%
Putnam	0%	0%	0%	18%	30%	13%	0%	0%	0%
Stark	0%	0%	0%	23%	33%	17%	0%	0%	0%
Richland	0%	0%	0%	0%	0%	0%	0%	0%	0%
Summit	7%	5%	10%	10%	13%	9%	55%	45%	62%
Trumbull	22%	25%	20%	101%	62%	119%	48%	0%	82%
Tuscarawas, Caroll	0%	0%	0%	5%	0%	8%	22%	0%	37%
Union	0%	0%	0%	125%	122%	131%	0%	0%	0%
Wood	0%	0%	0%	4%	12%	0%	27%	0%	45%
Washington	0%	0%	0%	0%	0%	0%	0%	0%	0%

Legend: ■ 0%   ■ 1% - 50%   ■ 51% - 100%   ■ over 100%

Figure 3. Recovery housing capacity of Ohio counties by recovery housing level

Estimated percent of need met for recovery housing

Level 1

Level 2

Level 3

County Groupings for Behavioral Health Authority Regions

Legend:
- 0% (no residences)
- 1% - 50%
- 51% - 100%
- over 100%
- 1-county areas
- 2-county areas
- 3-county areas
- 4+ county areas

Service areas with limited capacity across all the Levels are shown in Figure 4. This is a map of service areas and counties that lack any recovery housing beds at the time of this assessment and based upon the ORH dataset. These counties are predominantly Ohio's rural counties.

Figure 4. Counties and regions with no recovery housing at any level

Number of residences

- At least one residence
- No residences at any level
- Region

![Ohio Recovery Housing logo]
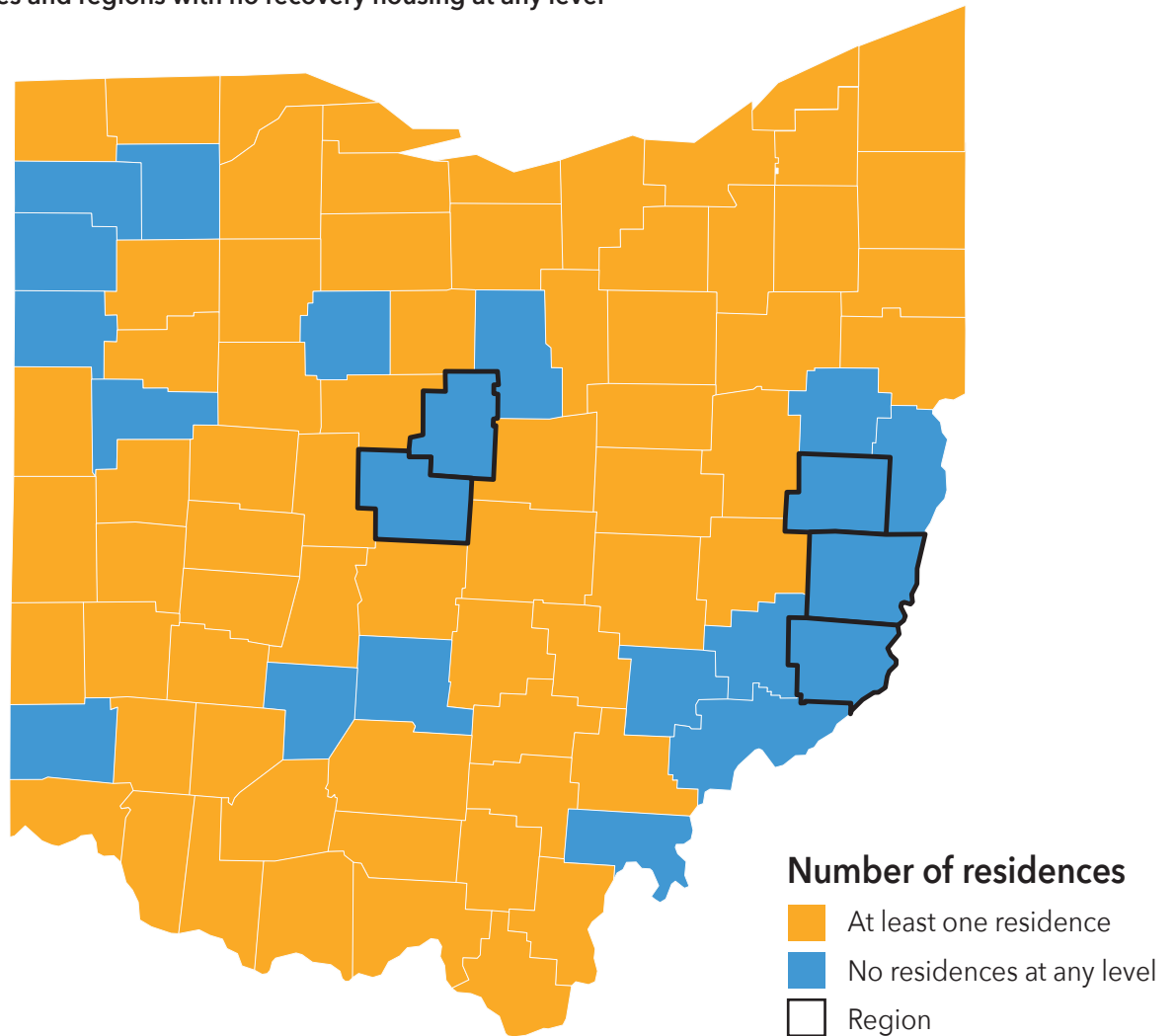
Section 3 – Estimated cost-savings and total net economic benefits with different expansion scenarios

Key Question: What are projections for the cost savings to the behavioral health treatment care system in Ohio with additional investments in recovery housing?

Cost savings and total net economic benefit analyses were undertaken by JG, utilizing the methods and estimated cost totals established by Lo Sasso et al. (2012). In their systematic analysis, they compared costs and savings in treatment and recovery systems, and costs and benefits for individual residents, of the Oxford House recovery housing model to usual aftercare following substance abuse treatment. They concluded that as compared to treatment as usual and across 24-months, treatment costs were approximately $3,000 higher for individuals in the recovery housing group, **but that enrollment in the residence generated overall savings and benefits for individuals and society, for a total net economic benefit of approximately $29,000 per person due to overall reduced costs related to criminal activity and drug and alcohol use and treatment, and increased earnings from stable employment**. Based upon their model, we produced cost savings and total net economic benefit estimates with different scenarios of increased capacity of recovery housing in Ohio. Cost-savings reflect decreased expenses for federal, state, and local programs from lower incarceration rates, health care payments, and costs of responding to criminal activity balanced by the costs of providing recovery housing services. Cost-benefit results reflect increased earnings due to stable employment and should be understood as accruing directly to individuals, and then by extension broad communities and society through increased tax revenue, decreased need for social services, and higher purchasing power.

Net Economic Benefit = Cost-Savings + Cost-Benefit

The calculations are based upon residence utilization data collected by ORH. Participation in data collection was required to receive funding from the Ohio Department of Mental Health and Addiction Services. Not all organizations receive funding, but cost benefits can be derived from the organizations that do receive funding. Statewide, there were an average of 235 move-ins to funded recovery housing per month in 2022 for a total of 2,820 move-ins annually.

The cost-savings using the adapted Lo Sasso estimation equation for Ohio's existing recovery housing capacity is $12,375 per year per individual enrolled. This is due to estimated cost savings from decreased illegal activity, decreased expenses related to alcohol and drug use, and decreased incarceration while also accounting for a higher cost of care for those enrolled in recovery housing.

The estimated cost-savings of funded recovery housing in Ohio in 2022 is: $34,897,500.

Based upon the CAST assessment, Ohio has current capacity (across all NARH levels) to serve 15,678 people per year, with an estimate need for recovery housing bed capacity that can serve 50,930 people per year, meaning that overall current capacity is estimated at 31% of total need. Throughout the report, we have provided nuanced portraits of the character of gaps and how they are distributed geographically, by gender, and for different NARH residence levels. However, here we use the general statewide total is used in Table 8 to calculate potential cost-benefits and cost-savings with different scenarios of enhanced capacity.

As the Lo Sasso et al. (2012) estimate the total net economic benefit of $29,000 over 24-months per person who enters a recovery housing as compared to a person who gets treatment as usual, we produced the following estimation equation to calculate total economic benefits of recovery housing in Ohio in 2022. We first divided the Lo Sasso estimate in half to account for one year of economic benefit and then adjusted for inflation. This produced an updated total economic benefit for one person across 12 months of $18,100.

The total net economic benefit is comprised of both the direct cost savings as well as increased income and other benefits experienced by the individual.

Total Economic Benefit 2022 = Total economic benefit of one individual enrolled in recovery housing * total individuals enrolled

The estimated total economic benefit of recovery housing in Ohio in 2022 is: $51,042,000.

Based upon the CAST assessment, Ohio has current capacity (across all NARH levels) to serve 15,678 people per year, with an estimate need for recovery housing bed capacity that can serve 50,930 people per year, meaning that overall current capacity is estimated at 31% of total need. Throughout the report, we have provided nuanced portraits of the character of gaps and how they are distributed geographically, by gender, and for different NARH residence levels. However, here we use the general statewide total is used in Table 6 to calculate potential cost-benefits and cost-savings with different scenarios of enhanced capacity, with an increase in 10% or 25% bed capacity and utilization from current levels.

Table 6. Potential cost impacts of 10% or 25% increased enrollment in recovery housing in Ohio

Economic Impact of Increased Enrollment		
SCENARIO	COST-BENEFITS	COST SAVINGS
10% increase in enrollment	$3,489,750	$8,593,950
25% increase in enrollment	$8,724,375	$21,484,875

Totals presented in Table 6 show benefits and savings that would be generated by expanding the overall recovery housing infrastructure in the state and are in addition to those generated by existing recovery housing infrastructure in the state. A note on the methodology applied to calculate these totals – our approach was reliant upon the cost totals utilized in the 2013 Lo Sasso study. It would be valuable for Ohio and national efforts to support recovery housing if there was an update to this study completed, potentially utilizing more detailed cost information made possible from increased outcome tracking and monitoring, while accounting for variation in cost by NARH level.

Section 4 – Demographic Composition of Residents and Disparities in Utilization

Disparities in access and utilization were examined in two ways. Disparities in access were grouped by key demographic categories of interest (geography, race, and socio-economic status) and compared them against the prevalence of recovery housing beds within each of the Ohio County behavioral health authority regions. Disparities in utilization were examined by looking at the difference between the composition of the state of Ohio population in these key areas and the composition of individuals who received services at a recovery housing over the past year. This section also provides a summary of the demographic characteristics of individuals who have been residents at a recovery housing which provide outcomes data to ORH.

Residents served by recovery housing that participate on the ORH outcomes tracking and reporting tended to be between the ages of 25-49 (75% of all residents), heterosexual (82.4%), white (77.8%) and slightly more commonly male than female or other gender categories (53.4% male). The majority of residents reported very low income, with 86.1% of residents reporting an annual income at or below $25,000 per year. These descriptions provide a general perspective on the composition of recovery housing demographics but should not be used to understand disparities in access or utilization as they lack a comparison group. This comparison is provided in the following section.
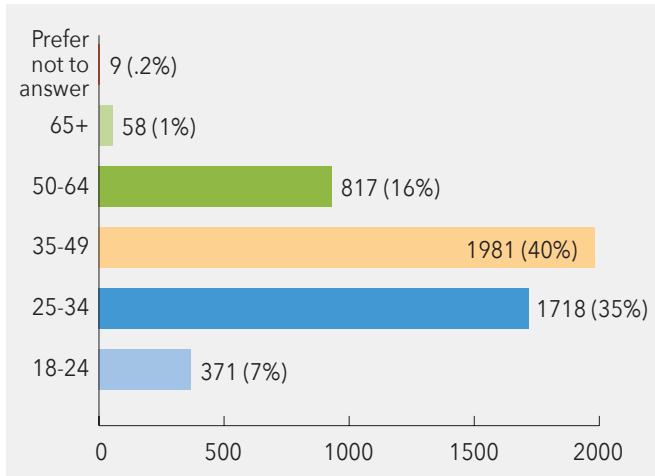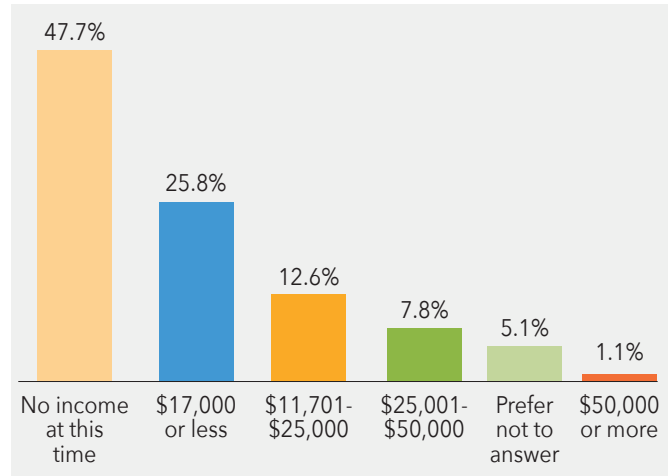
Figure 5. Age Group of Residents

Prefer not to answer: 9 (.2%)
65+: 58 (1%)
50-64: 817 (16%)
35-49: 1981 (40%)
25-34: 1718 (35%)
18-24: 371 (7%)

Figure 6. Income Per Year of Residents

No income at this time: 47.7%
$17,000 or less: 25.8%
$11,701-$25,000: 12.6%
$25,001-$50,000: 7.8%
Prefer not to answer: 5.1%
$50,000 or more: 1.1%

Figure 7. Gender of Residents

Male: 53.4%
Female: 43.2%
Non-binary, genderqueer, gender fluid or other: 2.7%
Transgender: 0.5%
Questioning or unsure: 0.2%
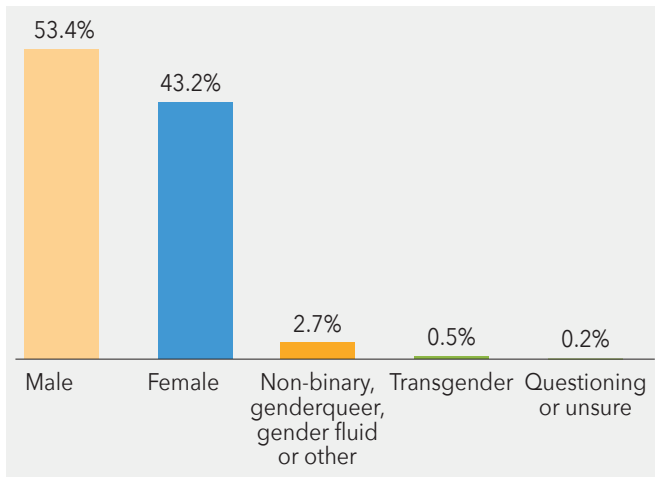
Figure 8. Sexual Identity of Residents

Heterosexual: 82.7%
Queer, pansexual, bisexual: 7.8%
Homosexual, gay, lesbian, same gender loving: 3.2%
Prefer not to answer: 2.9%
Asexual: 2.7%
Other: 0.4%
Questioning or unsure: 0.3%
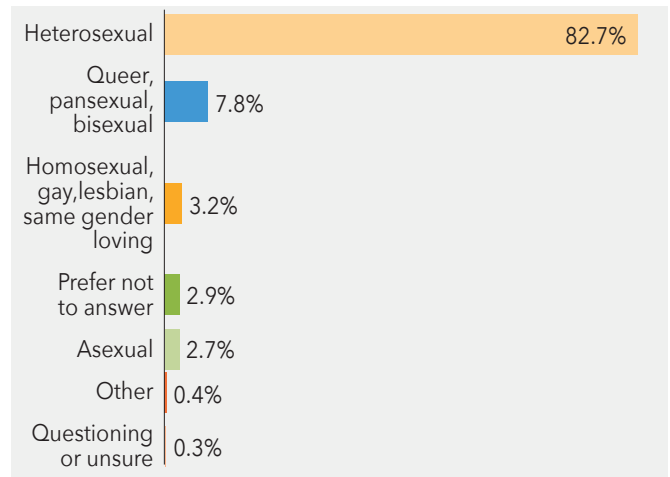
Figure 9. Racial Composition of Residents

White only: 77.8%
Black or African American only: 14.3%
More than one race: 3.2%
Other: 2.6%
American Indian or Alaska Native only: 0.6%
Asian only: 0.2%
Native Hawaiian and Other Pacifice Islander only: 0.2%
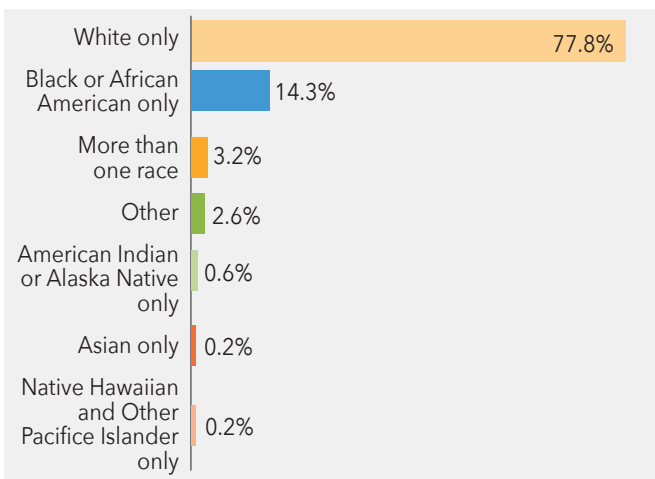
Figure 10. Ethnic Identity of Residents

Not of Hispanic, Latino or Spanish origin: 77.8%
Other: 14.3%
Of Hispanic, Latino, or Spanish origin: 3.2%
Prefer not to answer: 2.6%
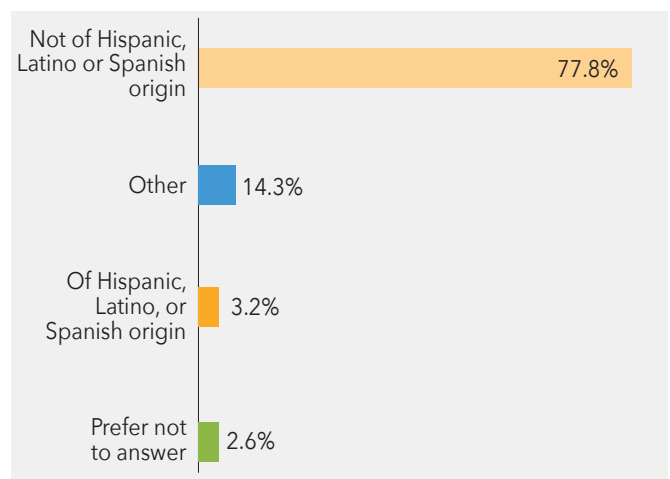
In addition to descriptive information about residents, we provide comparisons of the population served in recovery housing against the characteristics of Ohio for a number of key characteristics, including a focused comparison on income and education. Table 9 displays how the population of individuals who enrolled in recovery housing between January 1, 2022 and April 1, 2023 compares to the population of Ohio. There are proportionally fewer females and individuals with the ethnicity of being not Hispanic or Latino. There are proportionally more males. In general, however, these comparisons demonstrate that the composition of enrollees statewide is largely consistent with the demographic composition of Ohio.

Table 9. Comparison of all recovery housing enrollees with Ohio population

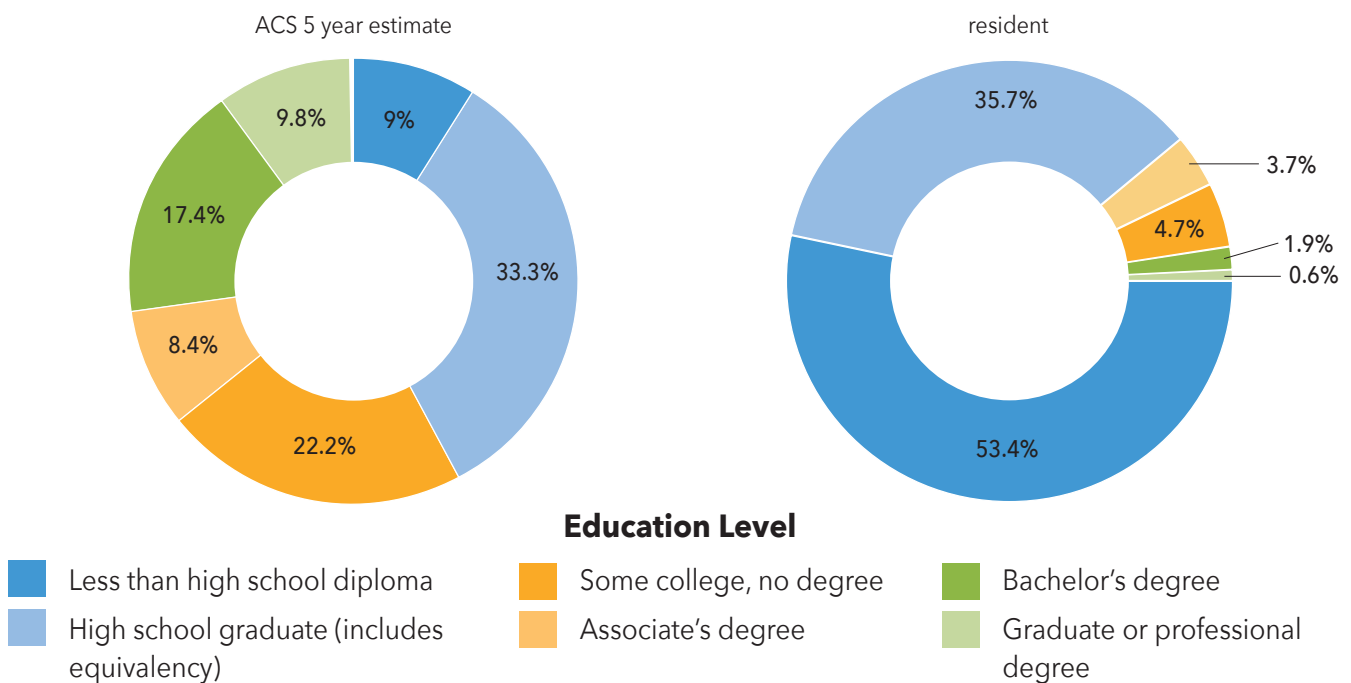| CHARACTERISTIC	STATE ESTIMATE	RH RESIDENT SURVEY	STATE ESTIMATE %	RH RESIDENT SURVEY %	DIFFERENCE %
Total population	11,675,275	4,786	-	-	-
GENDER					
Male	5,721,796	2,644	49.01%	53%	3.9
Female	5,953,479	2,142	50.99%	43%	-7.9%
Non-binary, genderqueer gender fluid, agender, or other		134		2.7%	
Transgender (ages 18+; estimate from UCLA 2022)	46,500	24	0.51%	0.5%	0.4%
Questioning or unsure		10		0.2%	
RACE					
White alone	9,394,878	3,852	80.47%	79%	-1.4%
Black or African American alone	1,442,655	710	12.36%	14%	1.6%
American Indian and Alaska Native alone	20,442	28	0.18%	0.6%	0.4%
Asian alone	268,527	10	2.3%	0.2%	-2.1%
Native Hawaiian and Other Pacific Islander alone	3,907	8	0.03%	0.2%	0.1%
Some other race alone	129,717	131	1.11%	2.7%	1.5%
Two or more races:	415,149	159	3.56%	3.2%	-0.3%
ETHNICITY					
Not Hispanic or Latino	11,215,336	4,181	96.06%	84%	-12.06%
Hispanic or Latino	459,939	204	3.94%	4.1%	0.16%
Other		368		7.4%	
Prefer not to answer		201		4.1%	

There are substantial proportional differences between the enrollees and general population, however, in the areas of income and education. Individuals served at recovery housing have much lower incomes than the population of Ohio and have lower educational attainment.

Figure 11. Comparison of income level of recovery residents and Ohio population

ACS 5 year estimate   resident

Income Level
- $49,999 or less
- $50,000 or more
- No income at this time
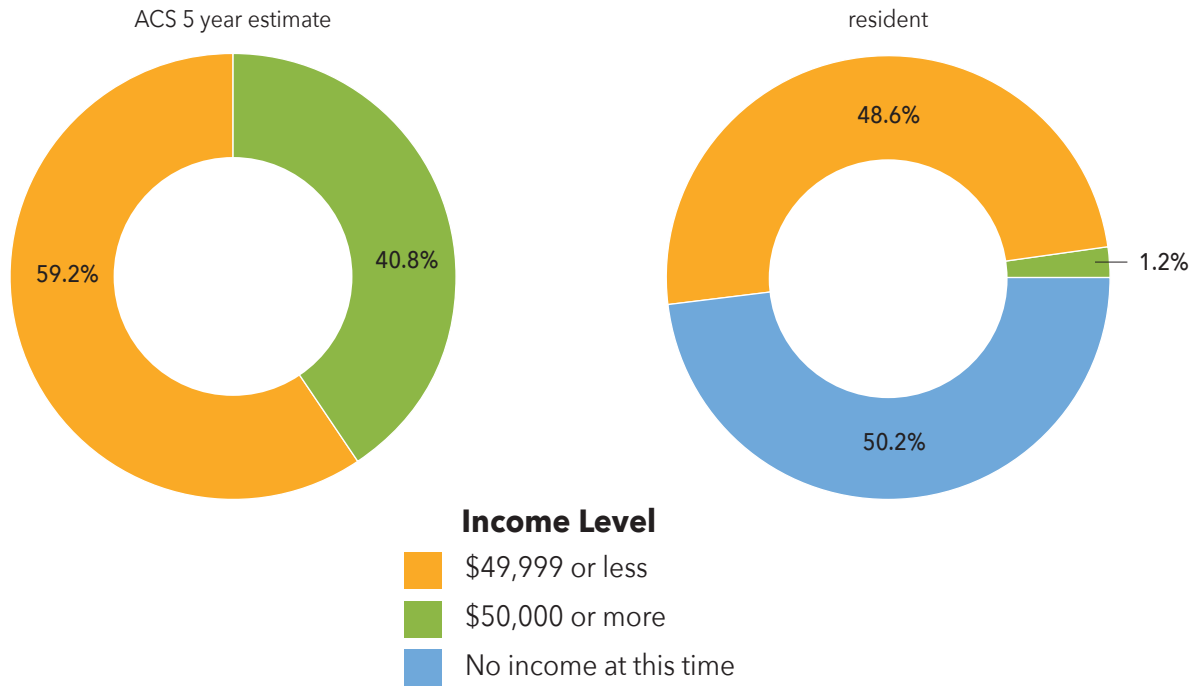
The education level of recovery residents reflects a higher proportion of individuals without a high school degree (53.4%) as compared to the state of Ohio (9%).

Figure 12. Comparison of education level of recovery residents and Ohio population

ACS 5 year estimate   resident

Education Level
- Less than high school diploma
- High school graduate (includes equivalency)
- Some college, no degree
- Associate's degree
- Bachelor's degree
- Graduate or professional degree

State-level comparisons of racial disparities may mask underlying patterns within the state. To explore this possibility, JG created a series of figures that compare the racial composition of the recovery housing population who received services within each of the behavioral health authority regions used to organize the CAST assessment. Figure 13-Figure 17 utilize data collected by ORH Outcomes Tools and compare the population totals within residences against estimates from the American Community Survey (ACS) 5-year estimates.

Figures 13 through 17 provide a view of disparities in utilization by race and ethnicity by region. In each figure, the proportion of residents who self-identify with a given racial or ethnic category are compared to the composition of the population in the region. Large variation between these two totals suggests that there may be disparities in local access by race or ethnicity. The purpose of these figures is to determine if structural and historical patterns of exclusion among racial minority populations are being repeated in the client populations within recovery housing, hence an examination of differences among black, Hispanic/Latino, American Indian and Asian populations.

In each of these figures, the race and ethnicity of residents served at recovery housing are compared to the demographic composition of the region. These proportions are then compared to identify if there are disparities in utilization of recovery housing when compared to the demographic composition of the region. For example, in Figure 13 (Wood County), the proportion of the population who identifies as White is higher than the proportion of individuals who received services at a recovery housing in the county identify as White.

Figure 13. Differences in proportion of white population: Region v. Recovery residents
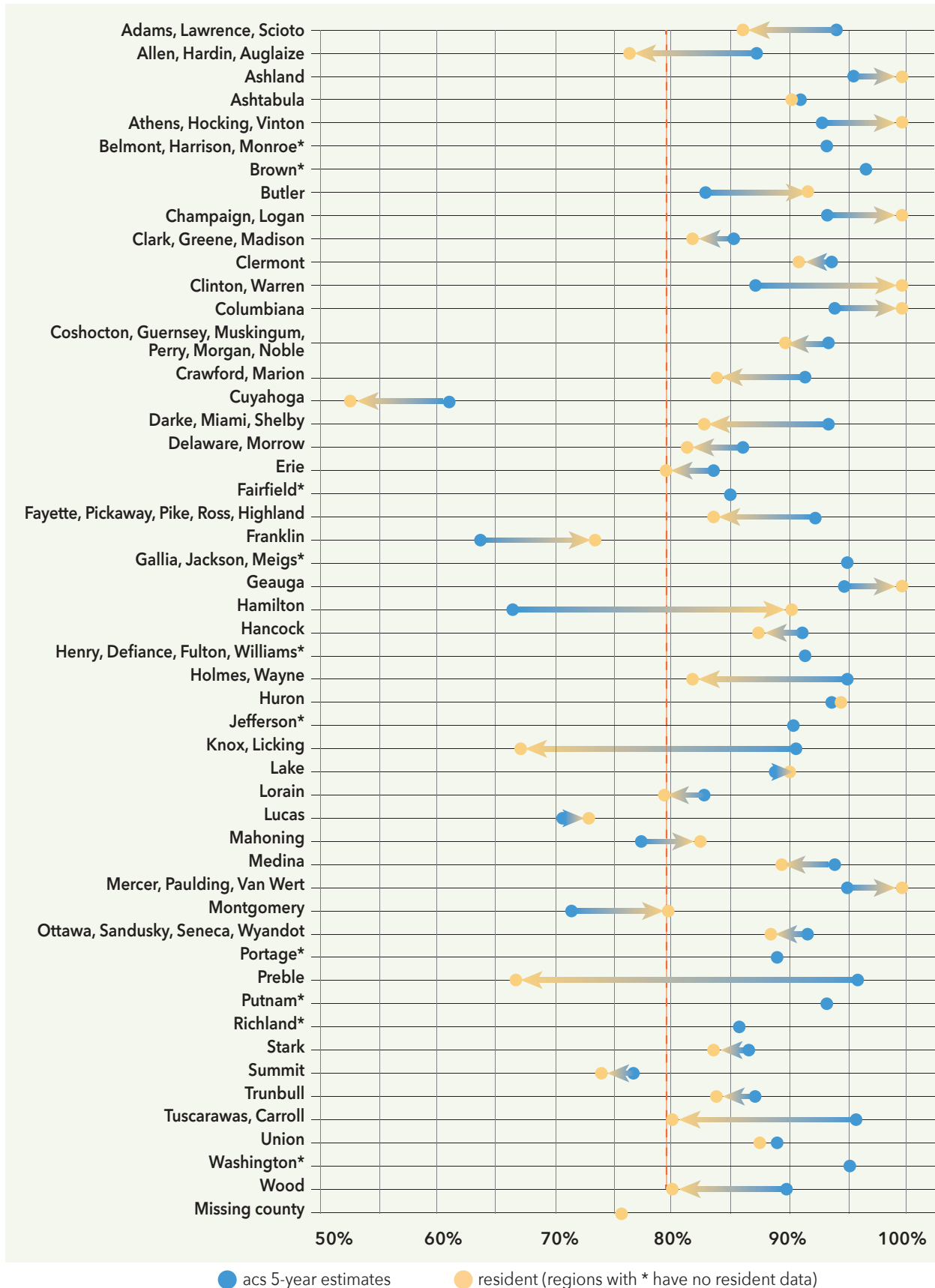
Race: White Only

Legend: ● acs 5-year estimates   ● resident (regions with * have no resident data)

Figure 14. Differences in proportion of black population: Region v. Recovery residents

Race: Black or African American Only

● acs 5-year estimates   ● resident (regions with * have no resident data)

Figure 15. Differences in proportion of American Indian or Alaska Native population: Region v. Recovery residents
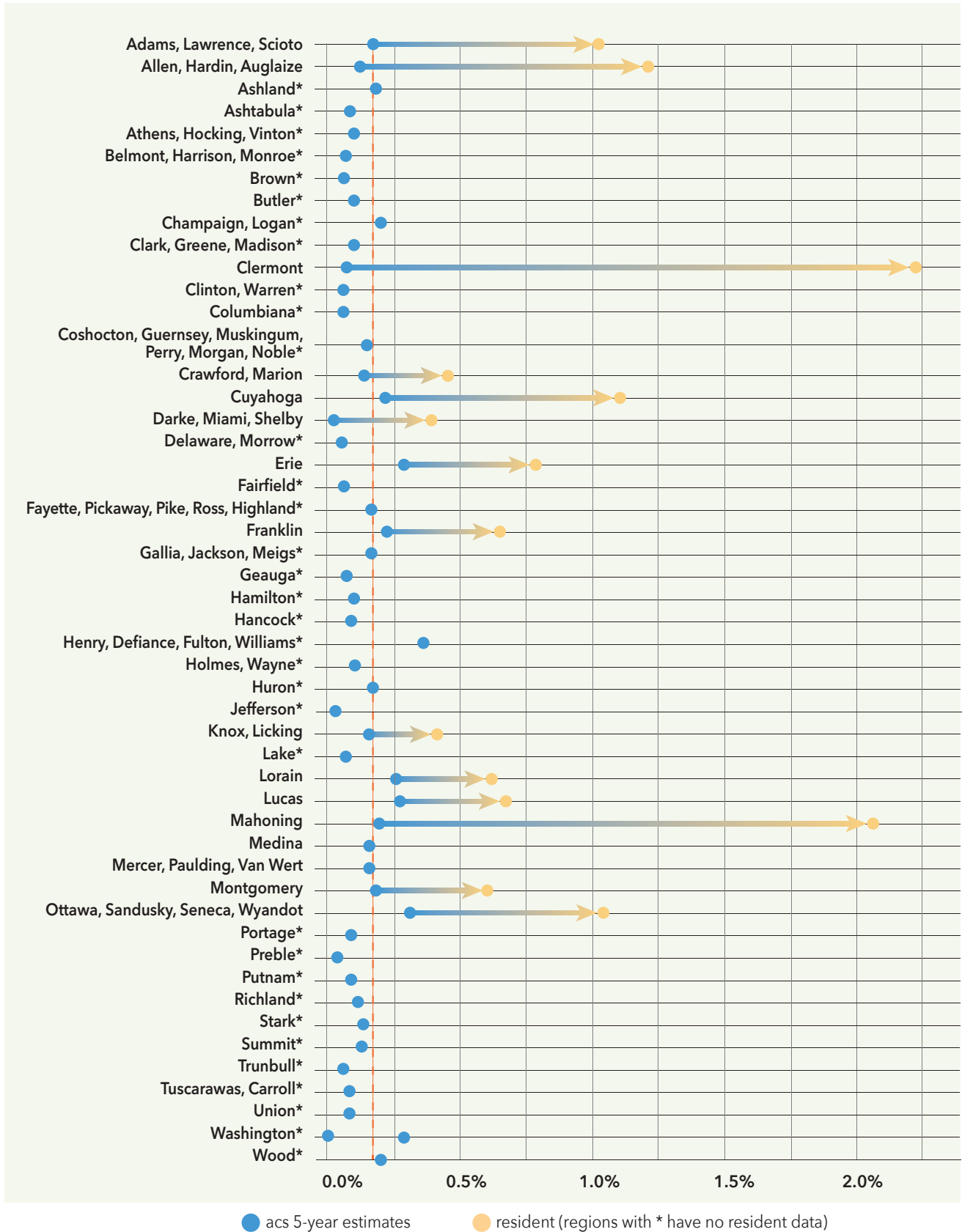
Race: American Indian or Alaska Native Only

● acs 5-year estimates   ● resident (regions with * have no resident data)

Figure 16. Differences in proportion of Asian population: Region v. Recovery residents

Race: Asian Only

Legend: acs 5-year estimates (blue) · resident (regions with * have no resident data) (orange)

Figure 17. Differences in proportion of Hispanic, Latino, or Spanish ethnicity population: Region v. Recovery residents

Ethnicity: Of Hispanic, Latino, or Spanish Origin

- ● acs 5-year estimates
- ● resident (regions with * have no resident data)
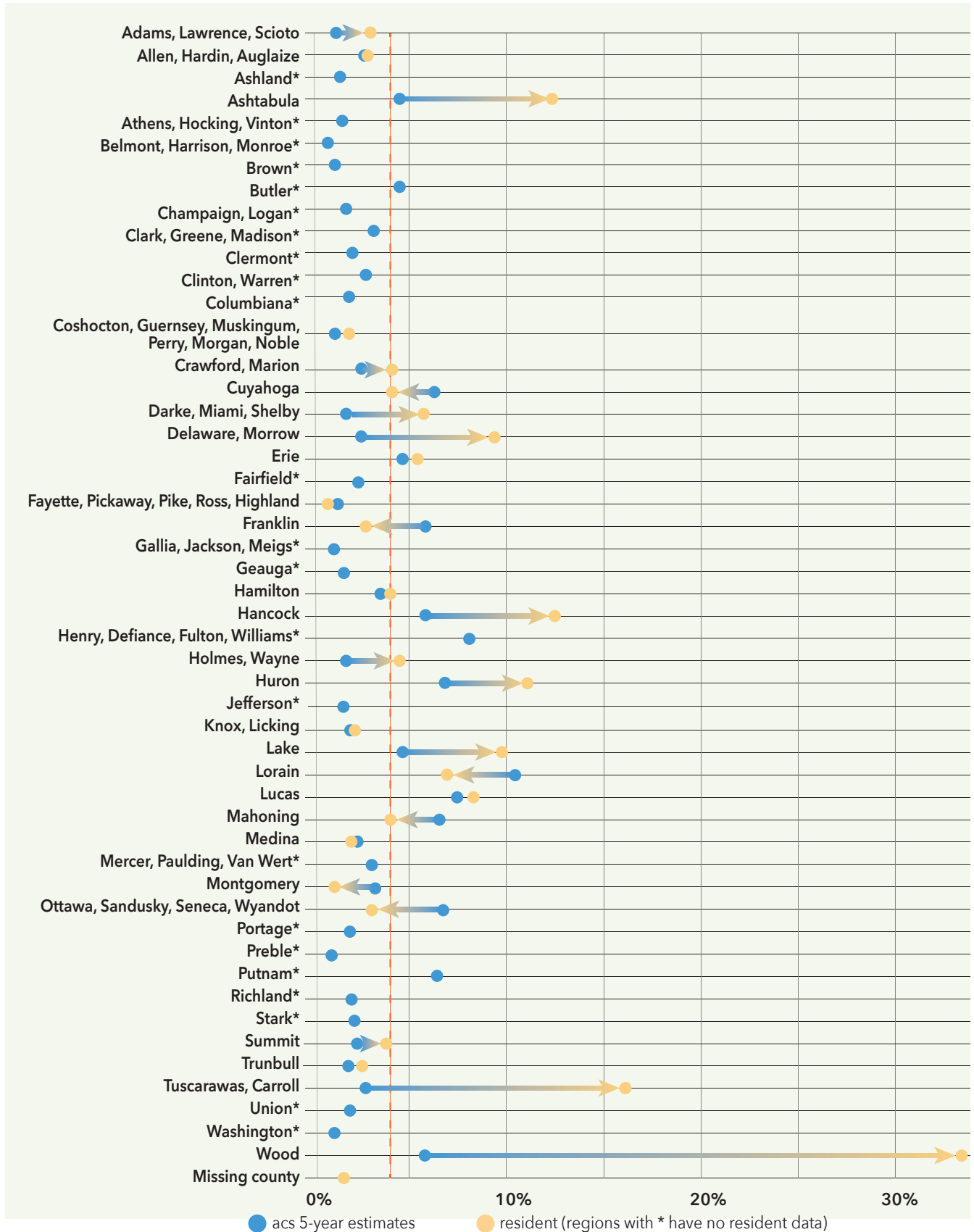
The percent difference between the statewide population and the population characteristics of residents of recovery housing provides a basic perspective on potential disparities by utilization of RH as denoted by completing an intake at a residence.

- The demographic characteristics of RH residents align with the state of Ohio in race and ethnicity, but there is significant variation across regions.

- There are more females engaged in housing at RH in Ohio than the proportion of females in the adult population in Ohio.

- Those with low household incomes (less than $15,000 per year) of those in recovery housing is much higher than the population of Ohio. This includes a very high proportion of individuals with no income at the time of entry.

The comparison of the racial and ethnic composition of recovery residents and the regions where they are located identified a few key patterns.

- In general, there are few racial disparities being identified or reflected in this analysis by region. In almost all categories, minus white, the composition of the recovery housing participants is a higher proportion for the given racial or ethnic group than the region within which the residence is located.

- A few regions had a lower proportion of black residents than the proportion of black individuals who enroll in a recovery housing.

- The comparisons compared those accessing recovery housing to the population totals, not the total population of individuals impacted by a substance use disorder. Historically, people of color and other historically disadvantaged populations have experienced disproportionate rates of substance use disorder. Therefore, while this analysis did not reveal any surface level disparities in availability of recovery housing, more research and federal data are needed to assist in ensuring equitable access for all populations.

Conclusion

This study sought to answer three core questions:

1. **What is the current capacity of the existing bed infrastructure of recovery housing in Ohio and does this meet the projected demand for this service?**

2. **What are projections for the cost savings to the behavioral health treatment care system in Ohio with additional investments in recovery housing?**

3. **Are there disparities in access or utilization by geography, race, gender, and socio-economic status for recovery housing?**

For question 1, we determined that the overall recovery housing capacity of the state is 50.7% of need across all NARR levels. When examining by level, the greatest need is for the expansion of Level 1 residences.

For question 2, we estimated that the current cost-savings in Ohio from the existing recovery housing infrastructure was $34,897,500 in 2022. With a 25% expansion in utilization, this total would increase to $43,621,875 per year. Total economic benefit estimates were higher, as they include cost-benefit employment income that is received by residents, and for 2022 were an estimated $51,042,000.

For question 3, there are clear disparities in access to services for residents of rural areas in Ohio. There are not disparities in the traditional sense among the total population, defined as the reproduction of systemic racism in healthcare service access for disadvantaged racial minorities. The population being served by recovery housing do have substantially lower incomes and education levels than the general population in Ohio.

Throughout this report, we have analytically examined key questions identified in the 2021 Environmental Scan on recovery housing in Ohio. Our ability to do so was directly the result of efforts by ORH to collect data systematically and reliably on recovery housing and client outcomes. Our goal with this report was to provide a baseline for understanding current capacity and how shifts in capacity over time may result in benefits in Ohio, both to payors and individuals seeking recovery. Although the quantitative analysis demonstrates that there are not racial disparities in utilization, it is important to note that this study did not attempt to understand cultural competence and fit of residences for different ethnic and cultural considerations. It may be that the use of qualitative methods and systematic data collection among active residences in the state can examine how those who are a racial minority, who identify outside of the male/female gender binary, or whose sexual identity is LGBTQA+ experience recovery housing in the state.

This analysis demonstrates the success of efforts to establish and expand access to high-quality recovery housing, with several regions in the state having substantial capacity. Our assumption is that these regions provide supports to residents who live in other communities, as there is geographic variation in access to the levels of recovery housing. Cost-based estimates displayed an estimated impact on the broader substance use, healthcare, and criminal justice systems that arise from the preventative impacts of recovery housing, suggesting that further expansion will have further positive impact for the state and residents who could benefit from an opportunity to enroll in recovery housing.

For More Information

Additional information about CAST is available through contacting Dr. Brandn Green: brandn@jgresearch.org or reviewing the publications about CAST.

Additional information about Ohio Recovery Housing and the ORH Outcomes Tools is available by contacting Danielle Gray at danielle@ohiorecoveryhousing.org or visiting www.ohiorecoveryhousing.org.

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Battis, J., Paquetee, K., Harper, K., Cox, J., Kasmally, A., Nichols, S. (2021) Ohio Mental Health & Addiction Services. 2021. Recovery Housing in Ohio: 2021 Environmental Scan.

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Green, B., Lyerla, R., Stroup, D., Azofeifa, A., High, P.M. (2016) A tool for assessment a community's capacity for substance abuse care. *Preventing Chronic Disease*, 13(E133): 1-10.

Lo Sasso, A.T, Byro, E., Jason, L.A., Ferrari, J.R., Olson, B. (2012). Benefits and costs associated with mutual-help community-based recovery homes: The Oxford House model. *Eval Program Planning*, 35(1): 47-53. *doi:10.1016/j.evalprogpla*n.2011.06.006

Appendix

CAST Overview

CAST is a software tool that applies social determinants of behavioral health and social disparities in behavioral health outcomes to provide insight into the chronic social conditions that may be contributing to behavioral health outcomes in a community. In addition, CAST produces estimates of program saturation in a local substance use care system across the continuum of care.

For this project, CAST was used to:

- Identify potential gaps and potential redundancies in the recovery housing capacity in Ohio
- Generate estimates of program saturation or need that can help to inform community ororganizational planning efforts

CAST is designed to assist with short and long-term planning for improving the behavioral health of communities. Program saturation, estimated with CAST algorithms, should be interpreted as a guide for decision-making, not a rigid boundary for program activity levels.

CAST is predicated on the assumption that resources are finite, and that decisions need to be made about how financial and human capital are allocated within a given community. It is important to note that CAST estimates are based upon data that was provided by community organizations and not all organizations that responded to the survey provided detailed program activity information.

For this project, staff at JG developed new algorithms for estimating capacity of recovery housing in coordination with staff at Ohio Recovery Housing.

The following equation is used for CAST estimates:

$$\frac{\text{Relevant Population} * \text{Program usage rate} * \text{Frequency}}{\text{Group size}}$$

Relevant population – Estimate of the total number of individuals in a county or region who could use the intervention (broken down further below)

Usage rate – Estimate of the eligible population who are likely to use the service

Frequency – Estimate of the frequency with which the population will use the service in one year

Group size – Estimate of the total number of individuals who are served by an intervention (units vary by intervention type)

Data sources

For this project, the CAST estimates utilized data from:

1. The National Survey on Drug Use and Health
2. The American Community
3. Ohio Recovery Housing

Cost Modeling Overview

The cost modeling undertaken in this report relied heavily upon previous work completed by Lo Sasso et al. (2013). Their methodology and cost estimates have been widely utilized by federal agencies (SAMHSA) and state-level recovery housing affiliates to understand the potential financial impacts of expanding access to recovery housing.

In this report, two separate cost modeling analyses were completed – cost savings and total net economic benefits. Cost savings estimate the potential for decreased utilization of treatment services that require payment, be payment from private insurance or public insurance programs. Total net economic benefits include cost-savings totals and add to those estimates the potential benefit accrued by the individual (per the Lo Sasso et al. study, these individual benefits come from income received by individuals due to a higher likelihood for employment among those who lived in a recovery housing).

There are some key assumptions in the Lo Sasso study. These include cost model estimates based upon a significant reduction in engagement with law enforcement among those who live in a recovery housing. One limitation to the analysis presented in this report is that the total client population of individuals who have enrolled in a recovery housing did not account for clients that drop out of a program. Additional analyses could examine the data provided to ORH and account for program drop out, or disengagement, to produce a more precise estimate of real cost savings. There may also be significant opportunities to further refine the cost model developed by Lo Sasso, as there has been widespread growth of recovery housing nationally since the publication of the study.