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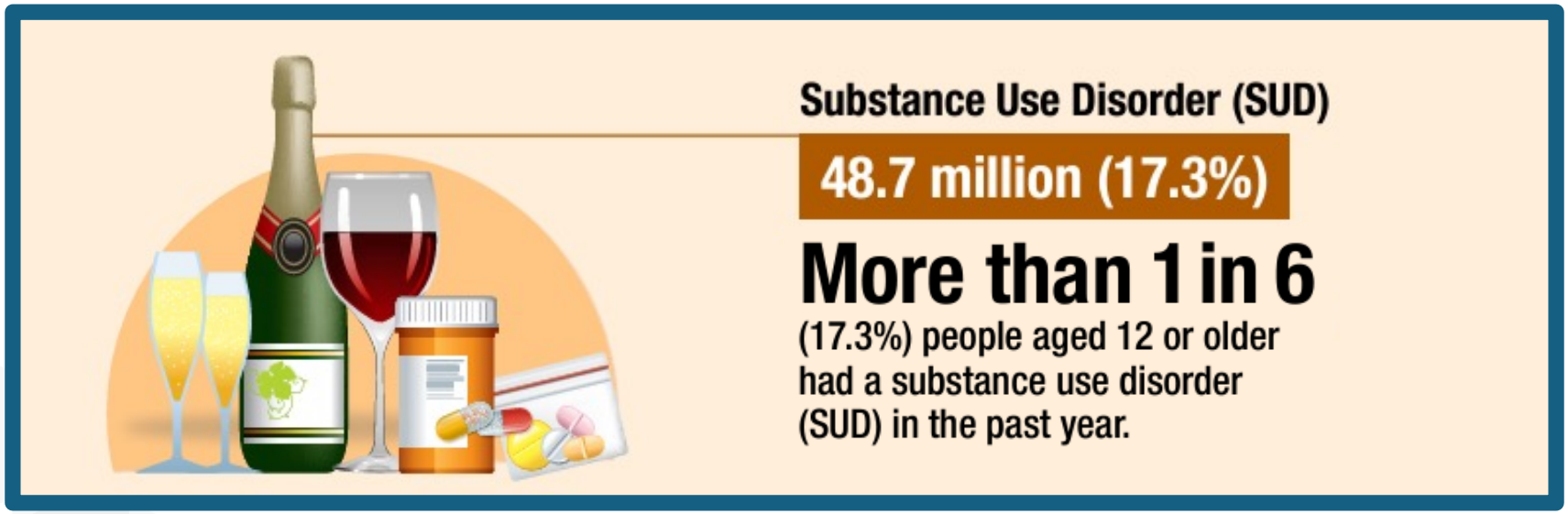
The Essential Role of Data in Addiction Treatment: Findings from the NAATP Foundation for Recovery Science and Education (FoRSE)

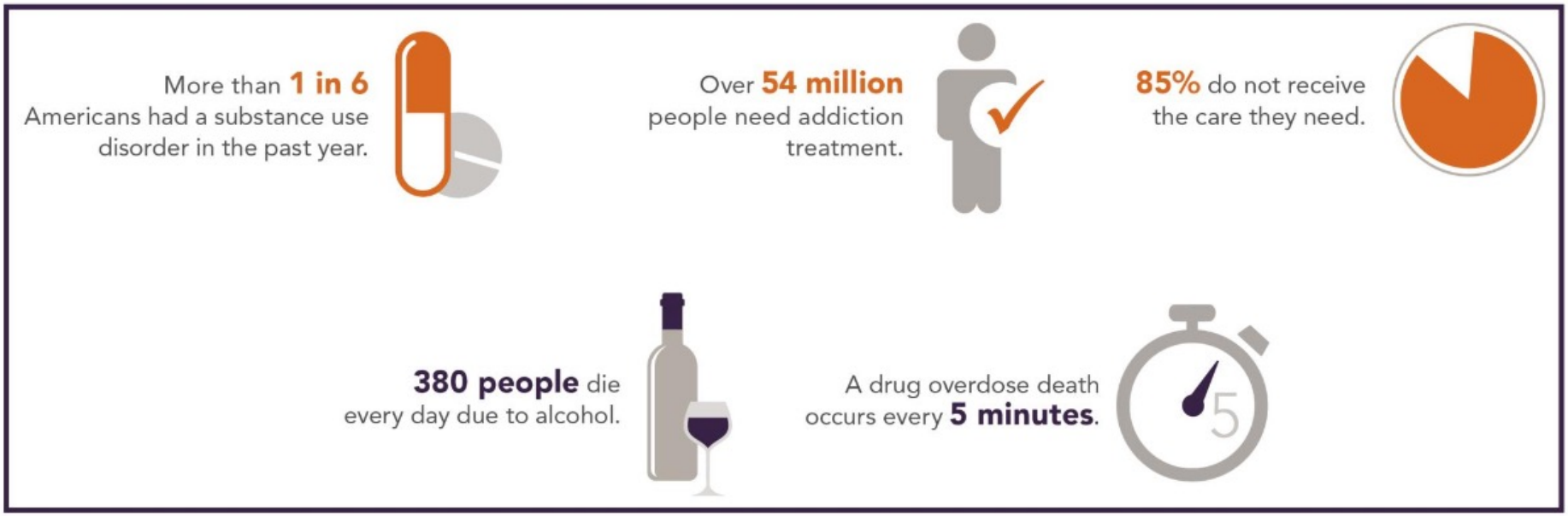
Dr. Annie Peters
Director of Research & Education
NAATP & FoRSE

The Addiction Crisis



SAMHSA, 2023a

The Addiction Crisis



NATIONAL ASSOCIATION OF ADDICTION TREATMENT PROVIDERS

Why Don't People Get Treatment?

Self-Reported Reasons

- Thinking they should have been able to handle their alcohol or drug use on their own (78%)
- Not knowing how or where to get treatment (52%)
- Thinking that treatment would cost too much (48%)
- Not having health insurance coverage for alcohol or drug use treatment (42%)

SAMHSA, 2023b

Systemic Reasons

- Stigma
- Lack of parity / can't afford it
- Racial inequity
- Lack of research

Fundamental Issue:

Addiction health care has historically been treated differently than physical health care

"The creation of FoRSE is undoubtedly the keystone to our future. Our future ability to advocate for our programs will be grounded entirely in data."

Dr. Nick Hayes
Chief Science Officer
Cumberland Heights

cumberland heights

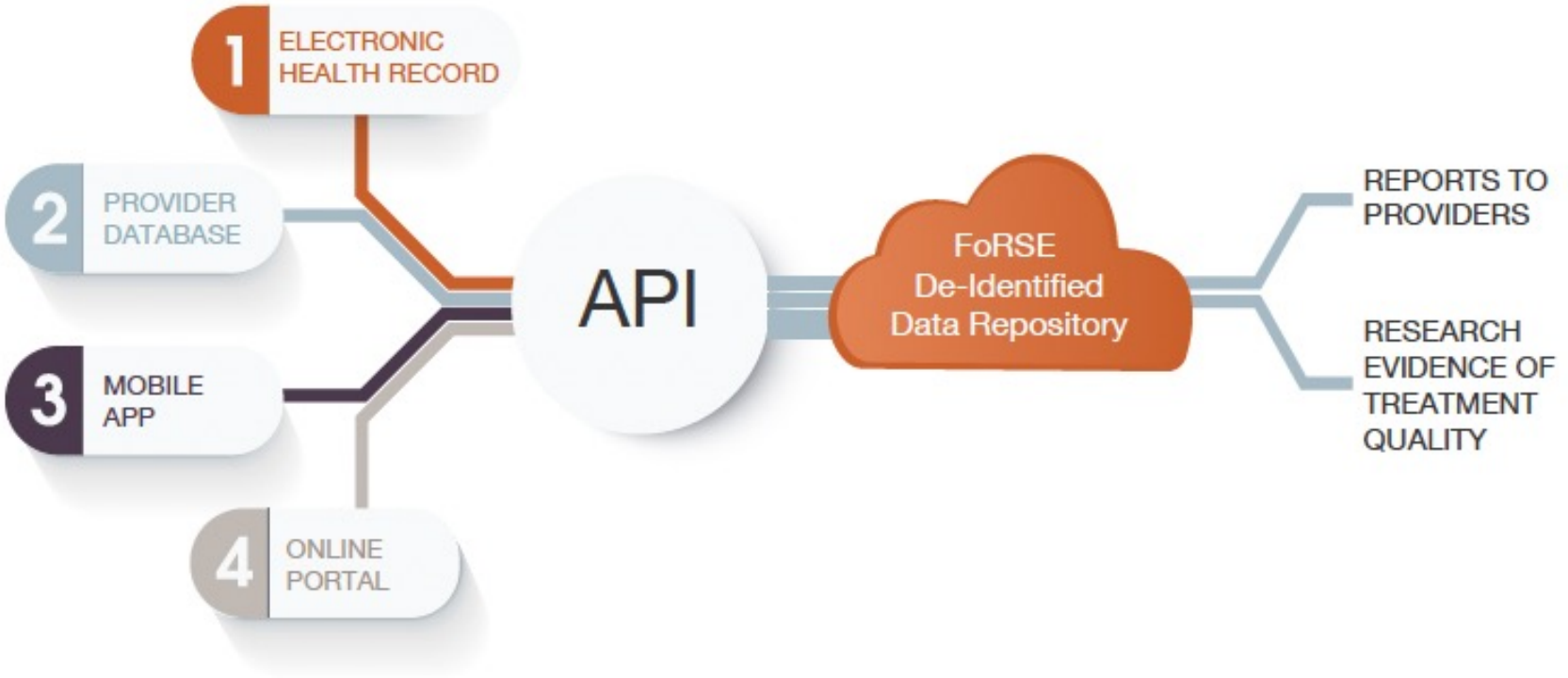
FoRSE®

NAATP FOUNDATION

for Recovery Science and Education

> *"The Mission of FoRSE is to improve addiction treatment through science, technology, and education"*

The FoRSE Addiction Treatment Outcomes Program



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FoRSE

Providers	Patients	Surveys
103 Providers	327,723 Unique Patient Episodes	987,083 Most Commonly Used Outcome Measures: PHQ-9 (47 sites) GAD-7 (44 sites) BAM/BAM-R (38 sites) BARC-10 (19 sites)

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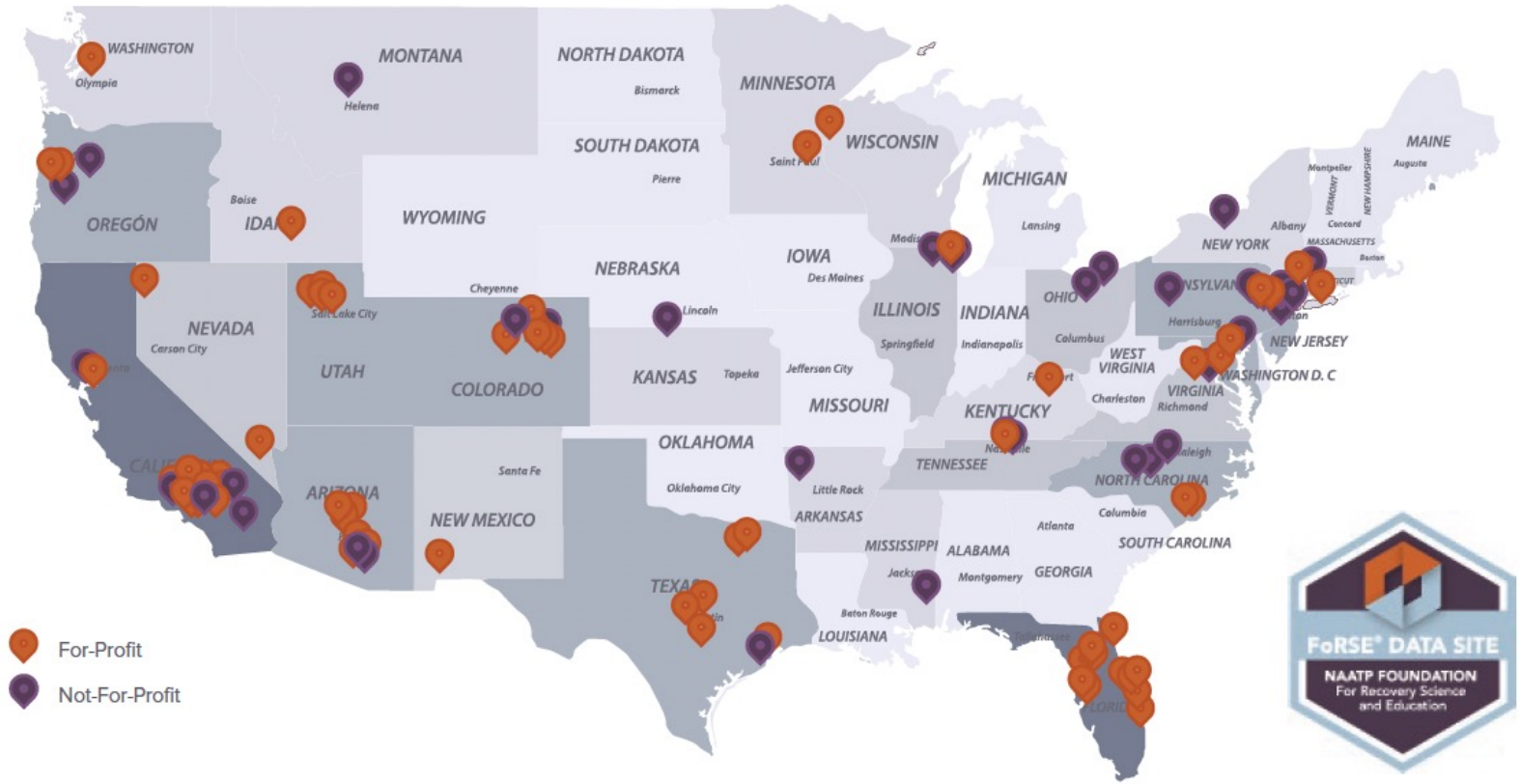
2024
ANNUAL
SUMMARY
FoRSE
NAATP FOUNDATION
for Recovery Science and Education
Report from the FoRSE
Addiction Treatment
Outcomes Program

Participating Organizations



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Participating Organizations

ABC Recovery Center
*A Better Life Recovery
*A Mission for Michael
*Above & Beyond Family Recovery Center
*ADAPT Programs
*Advanced Therapeutic Services
*Alpha Behavioral Health
*Alina Lodge
*American Treatment Network
*Asana Recovery
Ashley Addiction Treatment
*AspenRidge Recovery
*Augustine Recovery
*Birmingham Recovery Center
*Brazos Place
*Bridging the Gaps
*Caron Treatment Centers
*Chateau Health & Wellness
Clear Life Recovery
Colman Community Services
*Crossroads Centre Antigua
*Cumberland Heights Foundation
The Differents at Mt. Rose
*Dilworth Center
*Driftwood Recovery
Elam Center
Empower Project
*Encore Outpatient Services
*Family Center for Recovery
*Fellowship Hall
*Friendly House
*Gallus Medical Detox - Dallas
*Gateway Foundation
*Gateway Rehab
*Gaudenzia
*Glenbeigh
*The Guest House Ocala
*Harmony Foundation
*The Haven
Healing Pines Recovery
*High Watch Recovery Center
Horizon Services
Integrity House
*Jaywalker Lodge
La Hacienda Treatment Center
*Lakeside-Milam Recovery Centers
*Livengrin Foundation
*Maryland Addiction Recovery Center
*McCall Behavioral Health Network
*Meadows Behavioral Healthcare
*Midas House
*Milestone Recovery
*Momentum Recovery
*Mountain Sky Recovery
*New Directions for Women
*Northbound Treatment
Northern Illinois Recovery
NorthSight Recovery
Olympus Recovery
OneEighty
Oregon Trail Recovery
Origins Behavioral HealthCare
*Pavillon
*Pennsylvania Adult and Teen Challenge
Pine Grove Behavioral Health
Pride Institute
*Real Recovery Solutions
*Recovery Centers of America
*Recovery Ways
Regard Recovery
Renaissance Ranch
Revive Recovery Center
*Reviving You Recovery House
*The River Source
*Roaring Brook Recovery
Rosecrance Health Network
*The Rose House
*Sabino Recovery
Safe and Sound Treatment
*Scottsdale Recovery
*Serenity Lane
*Stairway Resource Center
*Steps Recovery Centers
Summit Detox
*Summit Estate
*Sundown M Ranch
Sunsets Recovery Center
Transformations Treatment Center
Tranformations Mending Fences
*Tree House Recovery
Tree House Recovery CO
Tree House Recovery NC
Tree House NW
Tree House Recovery TN
*Tully Hill Treatment & Recovery
*Turning Point of Tampa
*Valiant Living
Valley Hope Addiction and Recovery
*VARP, Inc.
*Wellbridge Addiction Treatment and Research
*Women's Recovery
YourPath
*Zia Recovery Center

*Actively submitting data (Data Sites)

Technology Partners

alleva

BestNotes

ERPHealth™
Engage. Research. Progress.

Kipu

Lightning Step

PETREE CONSULTING INC.

Ritten

SIGMUND SOFTWARE

Vista RESEARCH GROUP
IMPROVING TREATMENT OUTCOMES

SUNWAVE

TEAM RECOVERY TR RECOVERY TECH

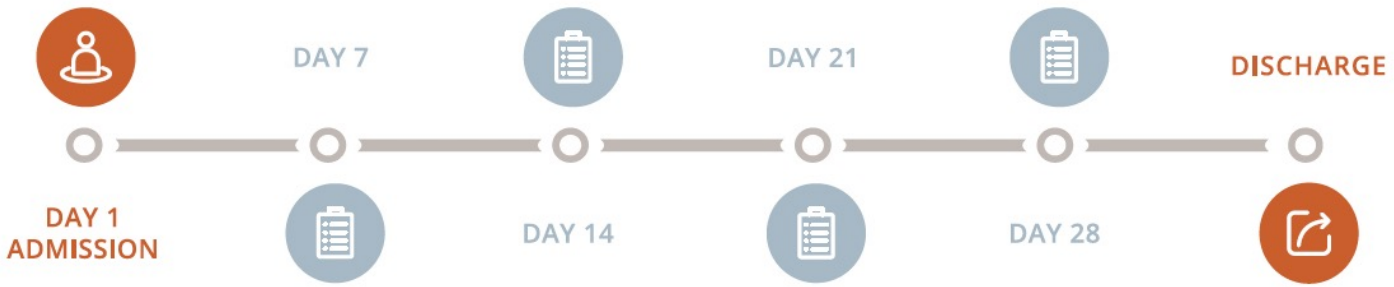
Accepted Data Points & Outcome Surveys

Accepted Measures

- Brief Addiction Monitor (BAM, BAM-R)
- Brief Assessment of Recovery Capital (BARC-10)
- FoRSE Outcomes Survey
- FoRSE Progress Monitoring Survey
- Generalized Anxiety Disorder screen (GAD-7)
- Patient Health Questionnaire (PHQ-9)
- Treatment Effectiveness Assessment (TEA)
- World Health Organization Quality of Life (WHOQOL-BREF)

Recommended Measurement Schedules

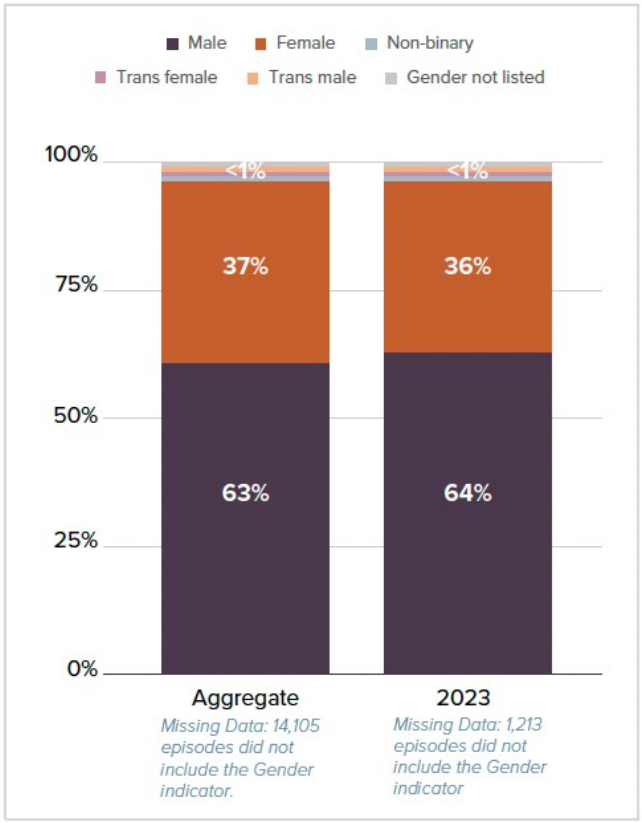
Progress Monitoring: Every 7 Days (for Residential programs)



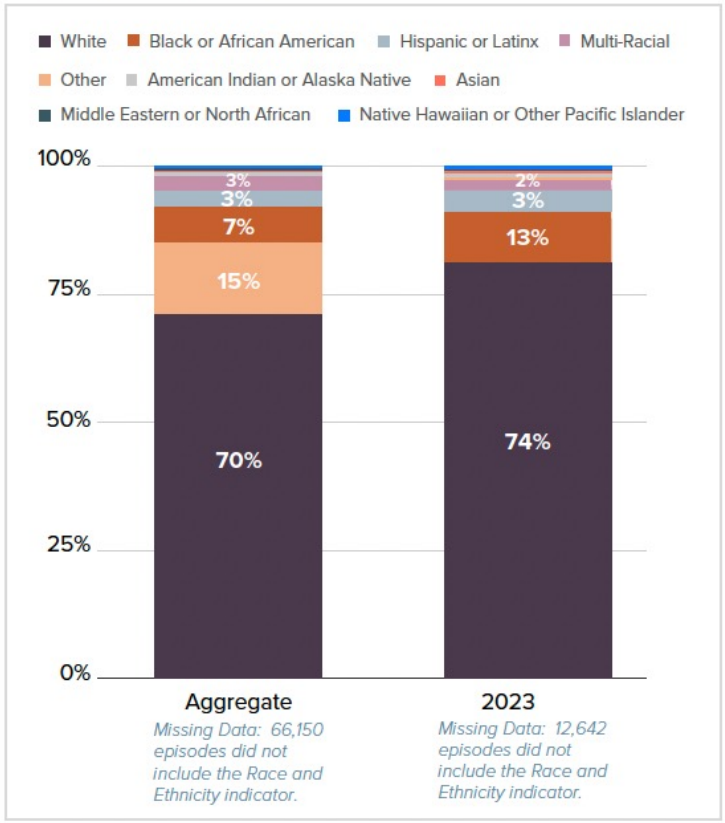
Post-Discharge Monitoring: 1, 2, 3, 6, 9, and 12 months post-discharge (annually thereafter)

Demographics

Gender

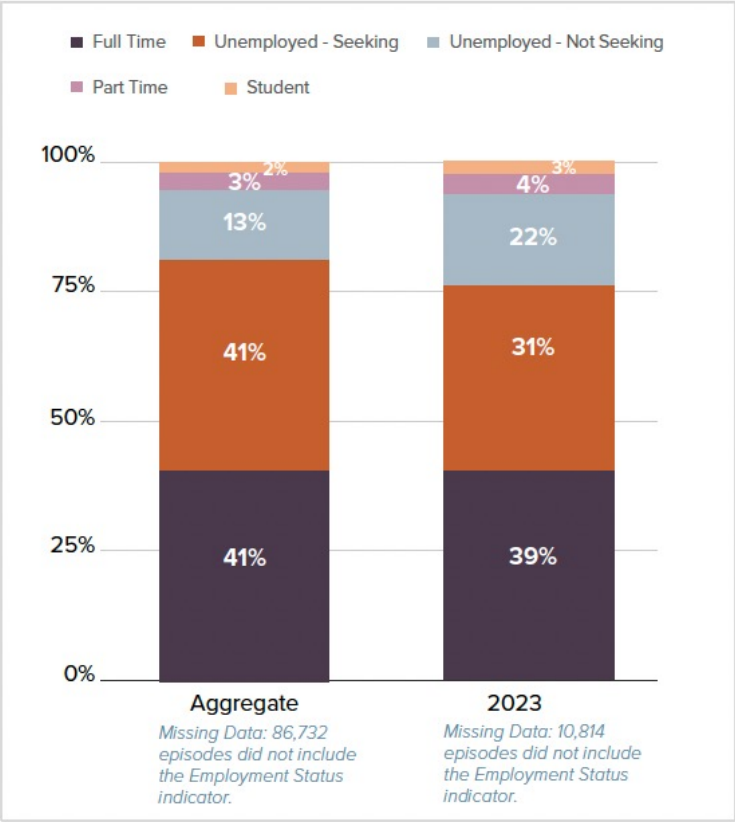


Race and Ethnicity

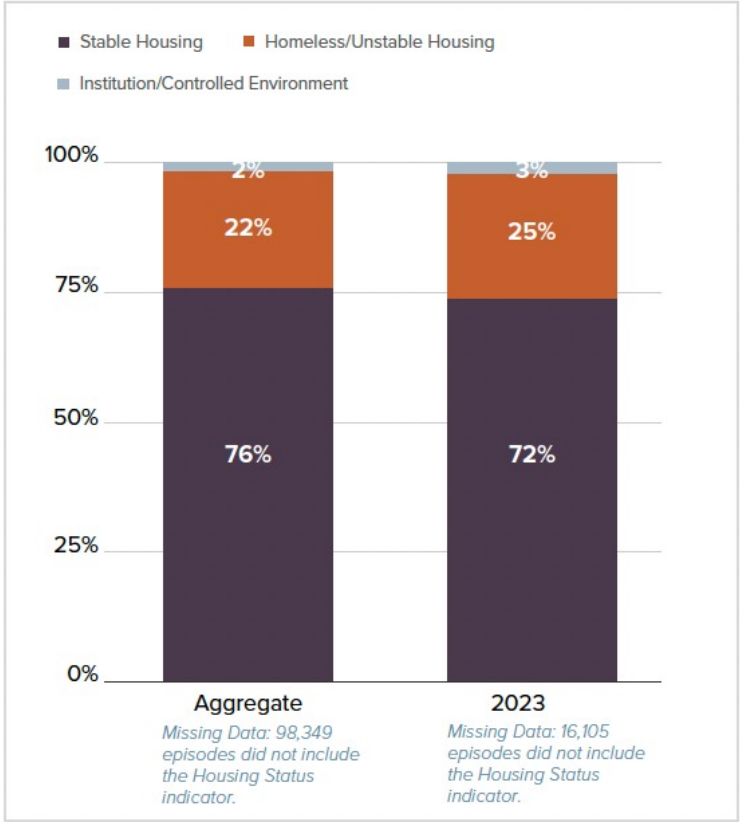


Social Determinants of Health

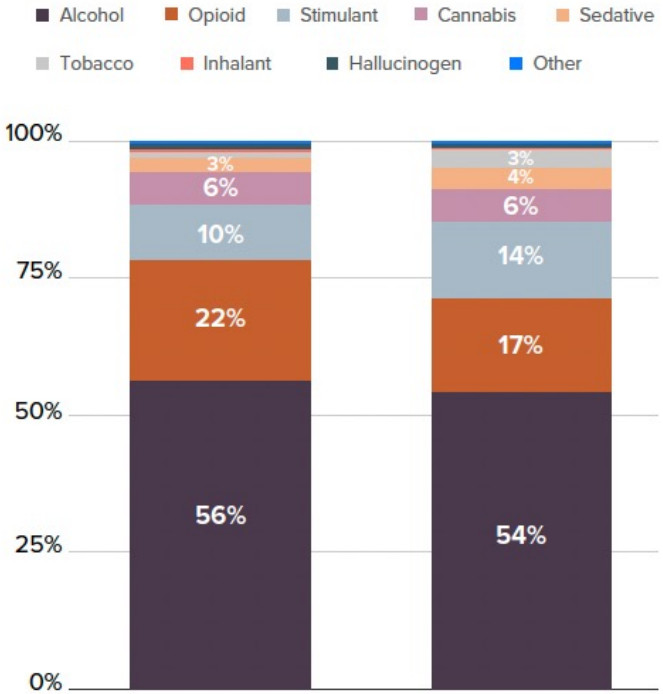
Employment Status



Housing Status



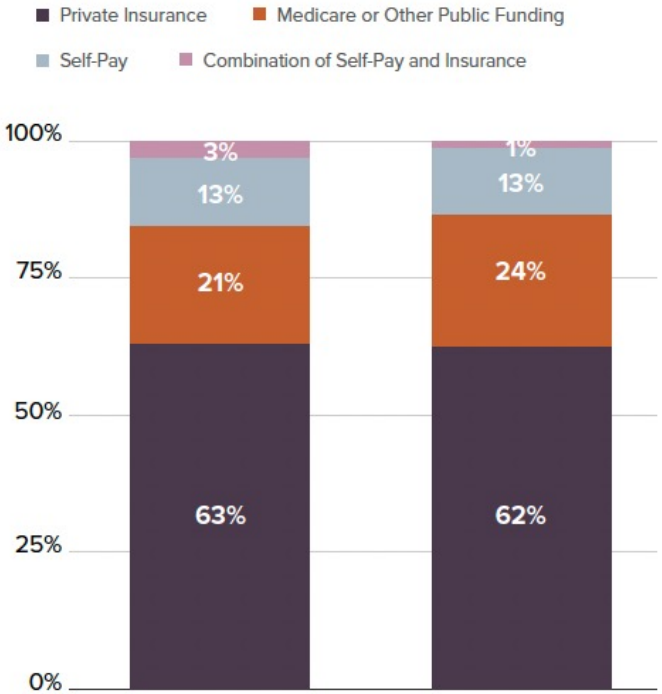
Primary SUD Diagnosis



Missing Data: 17,098 episodes did not include the Primary SUD Diagnosis indicator.

Missing Data: 5,254 episodes did not include the Primary SUD Diagnosis indicator.

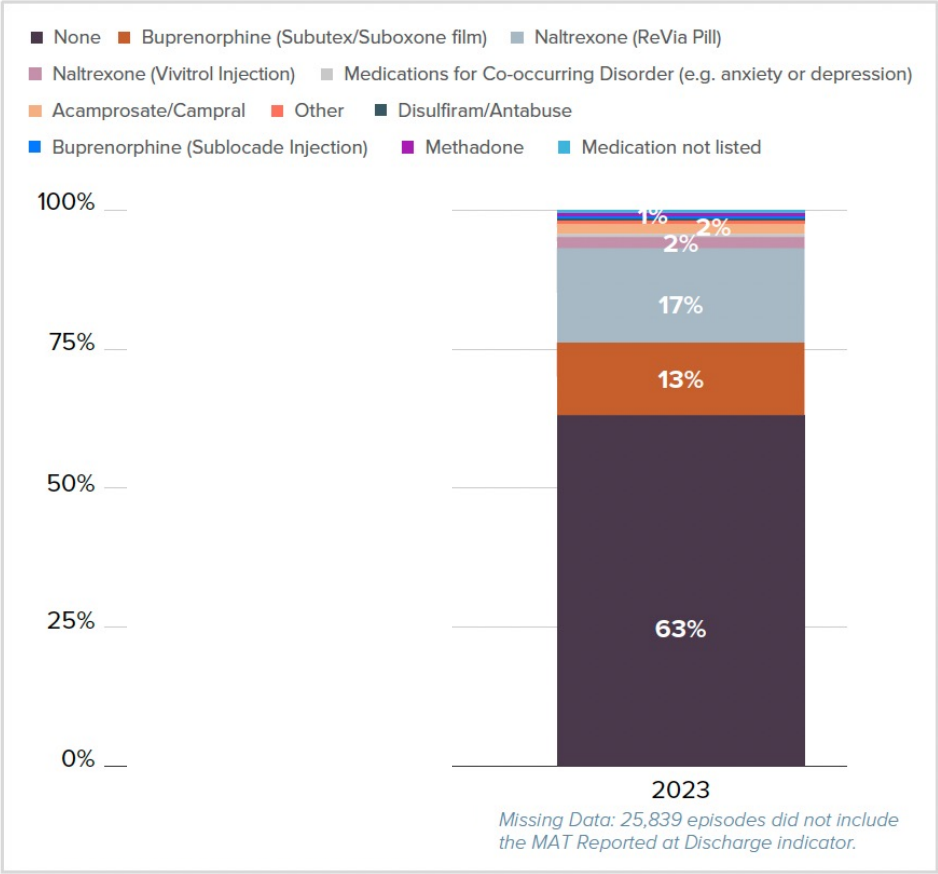
Payor Type



Missing Data: 43,163 episodes did not include the Race and Ethnicity indicator.

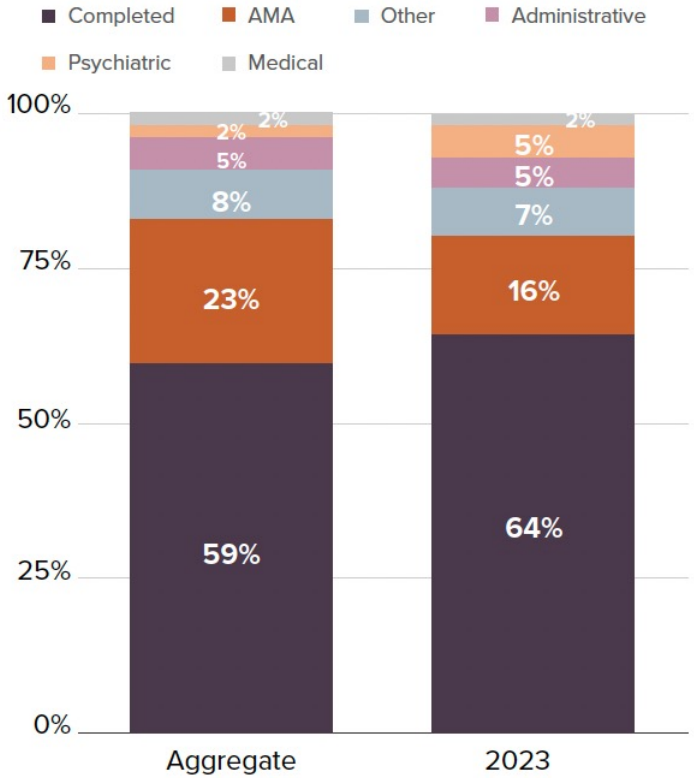
Missing Data: 8,199 episodes did not include the Race and Ethnicity indicator.

Medication Assisted Treatment (MAT) Reported at Discharge



Missing Data: 25,839 episodes did not include the MAT Reported at Discharge indicator.

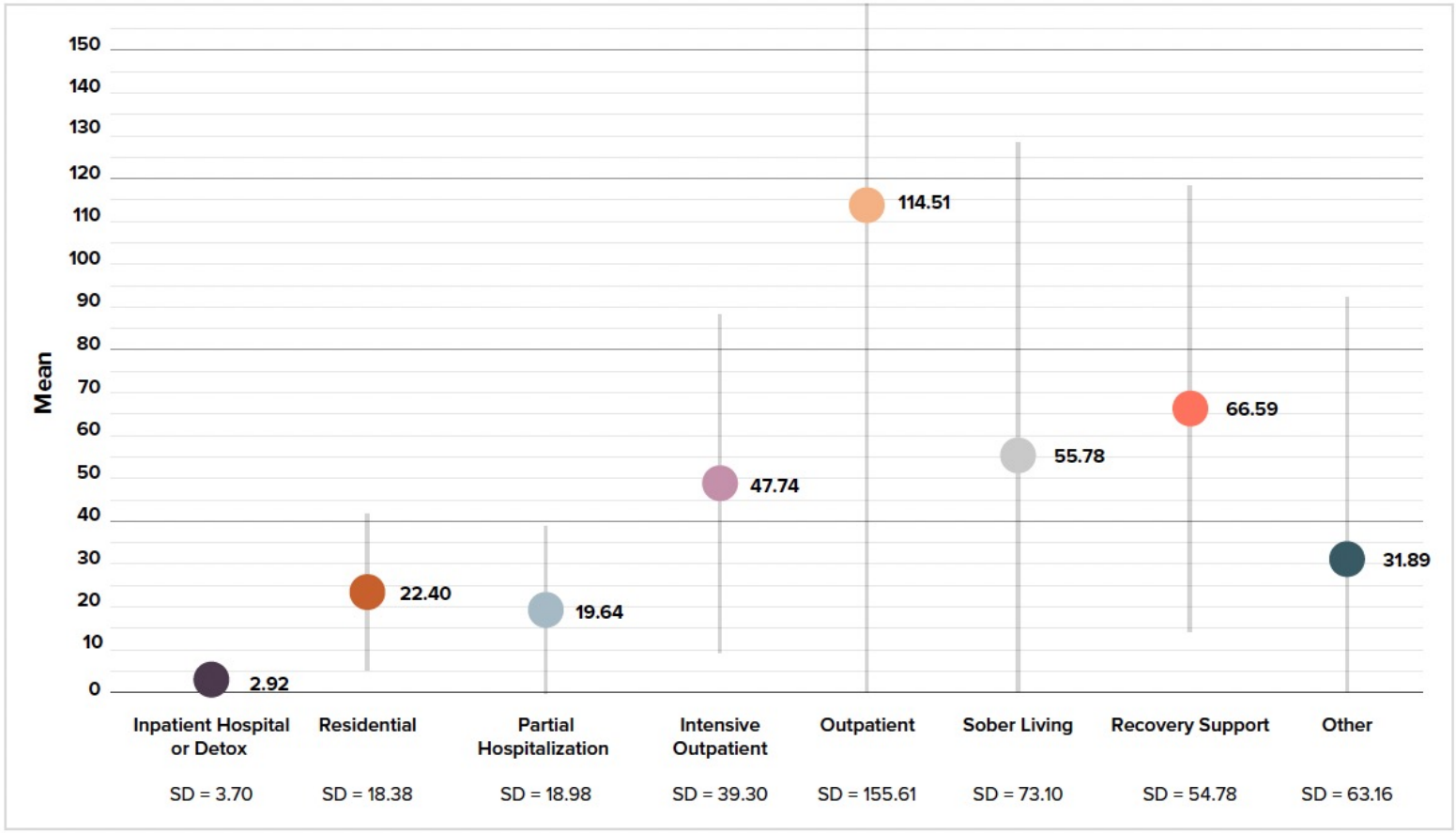
Discharge Type



Missing Data: 28,536 episodes did not include the Discharge Type indicator.

Missing Data: 6,639 episodes did not include the Discharge Type indicator.

Length of Stay by Level of Care (Calendar Days) (2018-2022)



Observed Patient Change

Progress Monitoring

Surveys completed at 0 to 36 days from admission (or longer for BAM), within +/- one day of recommended measurement time points

Post-Discharge Observations

Surveys completed at 0 to 366 days from discharge, within +/- one day of recommended measurement time points

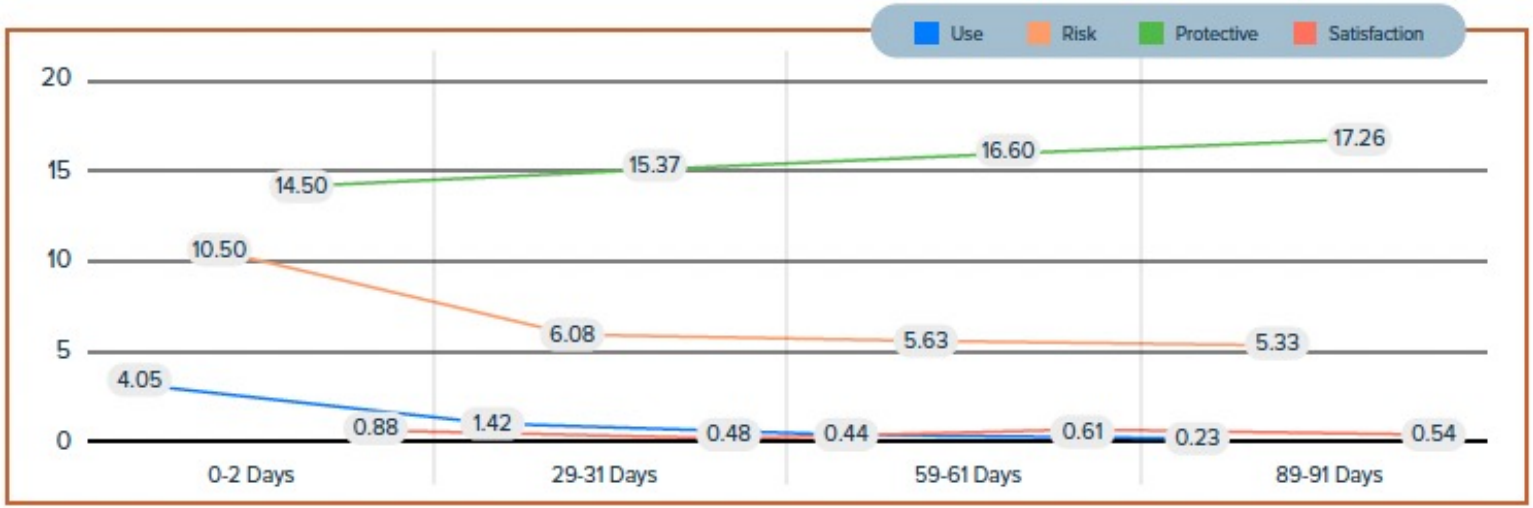
Progress Monitoring: BARC-10

Preliminary Data

	0-2 Days	6-8 Days	13-15 Days	20-22 Days	27-29 Days	34-36 Days
BARC (2018-2022)	42.20 (9.11) (n = 626)	43.49 (10.43) (n = 63)	43.38 (10.04) (n = 21)	49.11 (7.35) (n = 19)	51.20 (7.42) (n = 41)	49.24 (12.38) (n = 33)
BARC (2023)	43.89 (9.17) (n = 786)	44.87 (9.02) (n = 77)	48.90 (9.01) (n = 30)	51.37 (10.12) (n = 19)	52.55 (8.51) (n = 113)	54.95 (6.48) (n = 57)

Progress Monitoring: Brief Addiction Monitor (BAM)

Preliminary Data

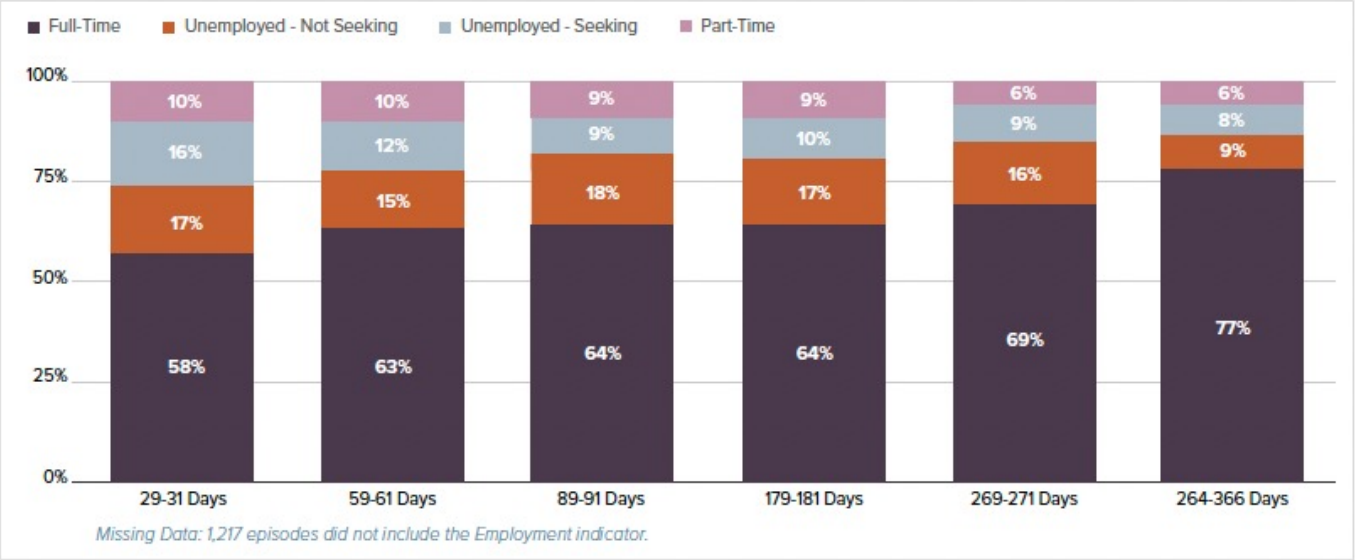


(2018-2022)	0-2 Days (n = 1,042)	29-31 Days (n = 1,010)	59-61 Days (n = 334)	89-91 Days (n = 298)
Use	4.05 (3.48)	1.42 (1.97)	0.44 (1.29)	0.23 (1.07)
Risk	10.50 (5.77)	6.08 (4.14)	5.63 (4.10)	5.33 (3.89)
Protective	14.50 (4.34)	15.37 (4.02)	16.60 (4.34)	17.26 (4.01)

Post-Discharge: FoRSE Outcomes Survey

Preliminary Data

Q7: What is your current employment status? (2019-2023)



Missing Data: 1,217 episodes did not include the Employment indicator.

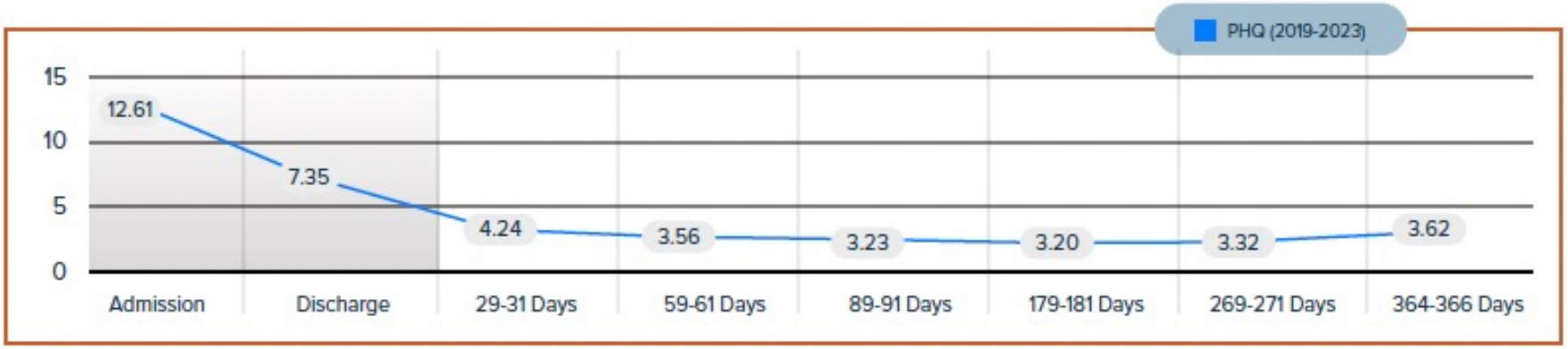
Q8: Have you experienced a relapse since discharging from treatment? (2019-2023)

	29-31 Days	59-61 Days	89-91 Days	179-181 Days	269-271 Days	364-366 Days
Q8 (2019-2023)	• No - 92% • Yes - 8%	• No - 90% • Yes - 10%	• No - 88% • Yes - 12%	• No - 81% • Yes - 19%	• No - 80% • Yes - 20%	• No - 79% • Yes - 21%

PHQ-9

Preliminary Data

Completed (2019-2023): (n = 75,453) across 49 distinct organizations.

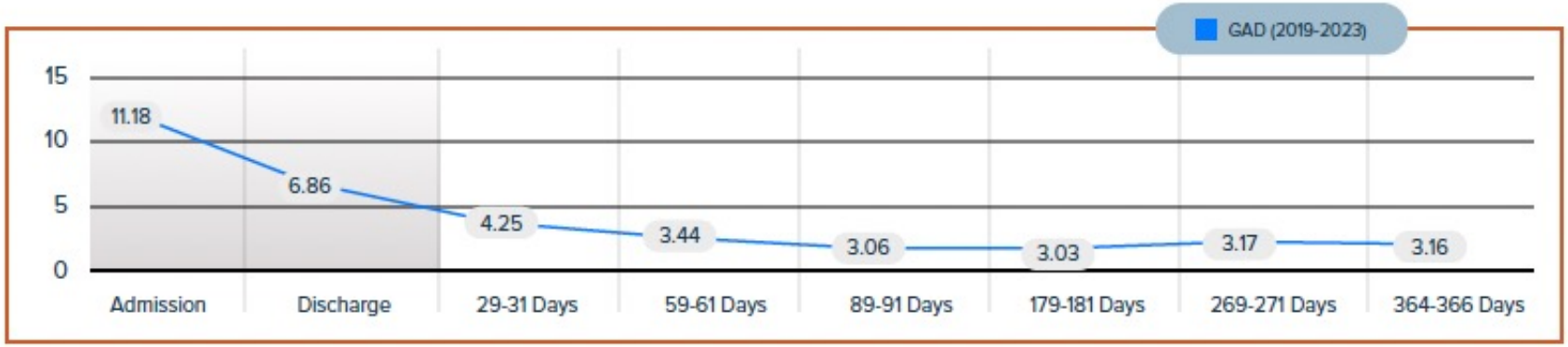


	Treatment		Post Discharge					
	Admission	Discharge	29-31 Days	59-61 Days	89-91 Days	179-181 Days	269-271 Days	364-366 Days
PHQ (2019 -2023)	12.61 (7.13) (n = 10,801)	7.35 (6.65) (n = 12,046)	4.24 (5.31) (n = 1,290)	3.56 (4.54) (n = 928)	3.23 (4.31) (n = 736)	3.20 (4.35) (n = 543)	3.32 (5.06) (n = 471)	3.62 (5.64) (n = 66)

GAD-7

Preliminary Data

Completed (2019-2023): (n = 74,047) across 46 distinct organizations.



	Treatment		Post Discharge					
	Admission	Discharge	29-31 Days	59-61 Days	89-91 Days	179-181 Days	269-271 Days	364-366 Days
GAD (2019 -2023)	11.18 (6.14) (n = 11,244)	6.86 (5.99) (n = 10,410)	4.25 (5.02) (n = 1,267)	3.44 (4.29) (n = 913)	3.06 (4.12) (n = 720)	3.03 (3.98) (n = 536)	3.17 (4.72) (n = 454)	3.16 (4.59) (n = 63)

Preliminary Findings

- Individuals who participated in more than 30 days of treatment were 65% less likely to relapse, compared to those with less than 30 days of treatment.
- Individuals who were observed to have high psychiatric acuity at admission were 60% more likely to relapse and discharge prematurely from treatment, compared to those with low admitting acuity.
- On average, individuals experienced a 42% decrease in symptoms of depression, a 39% decrease in symptoms of anxiety, and a 51% decrease in symptoms of SUD observed during the course of treatment.

"We have an opportunity to change the landscape of treatment evidence. Researchers often have to rely on Medicaid data alone when looking for large scale studies of treatment. We know that is an important subset, but its often all we have. We have this new opportunity because of FoRSE."

Dr. Corrie Vilsaint
Instructor, Harvard Medical School
Research Scientist, Recovery Research
Center for Addiction Medicine and Massachusetts General Hospital

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Next Steps

FORSE
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- Data Validation – encourage your vendors to complete the 2024 updates
- Site-Specific Reports
- "Live" Data Dashboard
- Research Studies & Peer-Reviewed Publications

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Ways to Support FoRSE

Join the Outcomes Program as a Data Site

Make a Tax-Deductible Donation to FoRSE

Connect FoRSE With Potential Partners & Funders

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References

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Questions & Contact Information

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Apeters@naatp.org
303-970-9972

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for Recovery Science and Education

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FoRSE is a 501(c)3 nonprofit organization supported by donations and grants.

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Becoming and Operating as a FoRSE Data Site and a Data-Informed NAATP Treatment Program

Nick Hayes, PhD
Chief Science Officer
Cumberland Heights

Becoming and Operating as a FoRSE Data Site and a Data-Informed NAATP Treatment Program

Nick Hayes, PhD

Chief Science Officer

Cumberland Heights Foundation

Acknowledgements & Disclosures

The content presented here represents the views of the author and does not necessarily represent the expressed views of any other entity.

No conflicts of interest to declare.

All funding obtained from Cumberland Heights Foundation.

Why Become Data-Informed?

- **Defined:** "*… a health system in which internal data and experience are systematically integrated with external evidence, and that knowledge is put into practice*".[1]

- **Importance:** Enhances patient care, operational efficiency, and strategic planning.

- **Goal:** Equip your organization to make better decisions using data-driven insights.

What has Cumberland Heights Learned?

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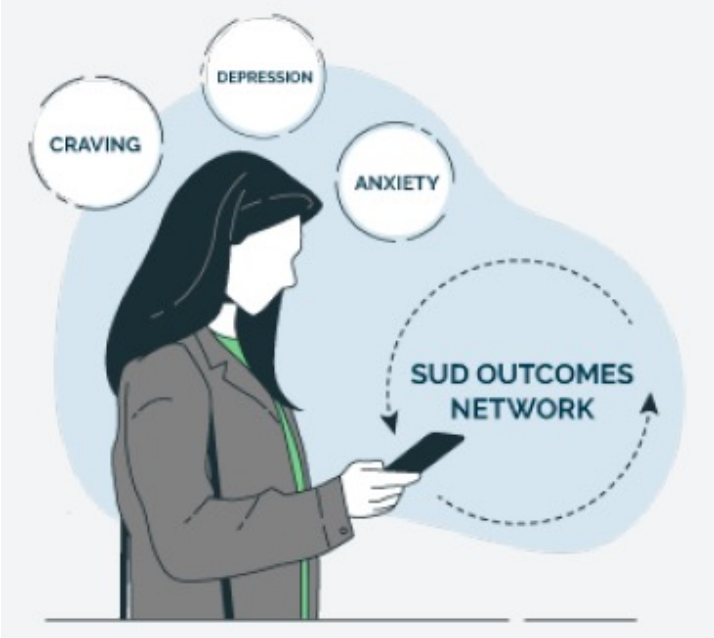
What was the yield?

Business Intelligence: Increased our visibility across our health system (i.e., patient, treatment, and outcomes).

Internal Process Investigations: Equipped our team with the tools needed to create data informed changes (e.g., AMA, SI/Trauma, and Scholarship).

Valid Outcomes: Empowered our organization with the valid output needed to better advocate for our services (e.g., SUD Outcomes, FoRSE, and Payers).

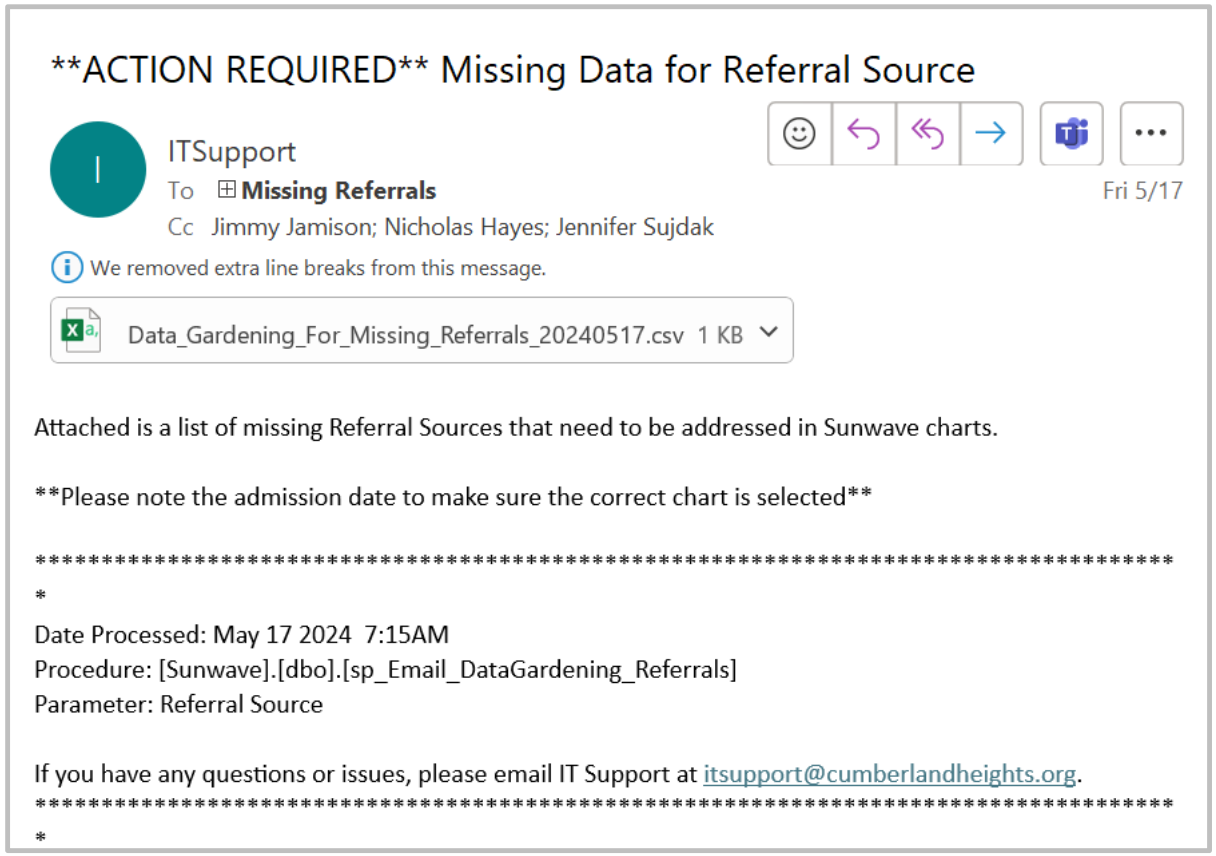


(Hayes, 2021)

Example (Admissions)

1. Race & Ethnicity

- 70% to 0% Missing (Implementation of Gardening Protocol)



ACTION REQUIRED Missing Data for Referral Source

ITSupport
To **Missing Referrals**
Cc Jimmy Jamison; Nicholas Hayes; Jennifer Sujdak
Fri 5/17

We removed extra line breaks from this message.

Data_Gardening_For_Missing_Referrals_20240517.csv 1 KB

Attached is a list of missing Referral Sources that need to be addressed in Sunwave charts.

Please note the admission date to make sure the correct chart is selected

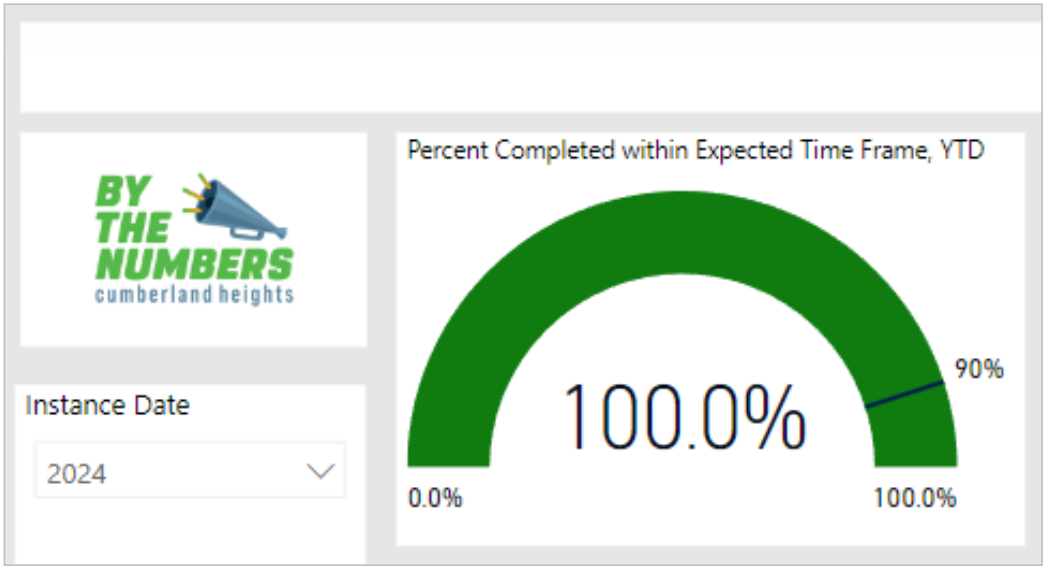
****
*
Date Processed: May 17 2024 7:15AM
Procedure: [Sunwave].[dbo].[sp_Email_DataGardening_Referrals]
Parameter: Referral Source

If you have any questions or issues, please email IT Support at itsupport@cumberlandheights.org.
****
*

Example (Clinical)

2. Suicide Risk

- 20% to 0% Missing (Implementation of Gardening Protocol)



Example (Payers)

3. Readmission

- Data Informed Discovery

Readmission Status by [redacted] Policy Type

	90 Days	6 Months	1 Year
[redacted] (n = 164)	10%	13%	16%
[redacted] (n = 124)	19%	25%	28%

Note: These data represent only those patients served in 2023 who had [redacted] insurance.

Readmission Status by Length of Stay

	90 Days	6 Months	1 Year
LOS < 30 (n = 91)	13%	20%	25%
LOS > 30 (n = 72)	3%	3%	3%

Note: These data represent only those patients served in 2023 who had [redacted] insurance.
Additionally, only those who successfully completed treatment were included.

Core Components

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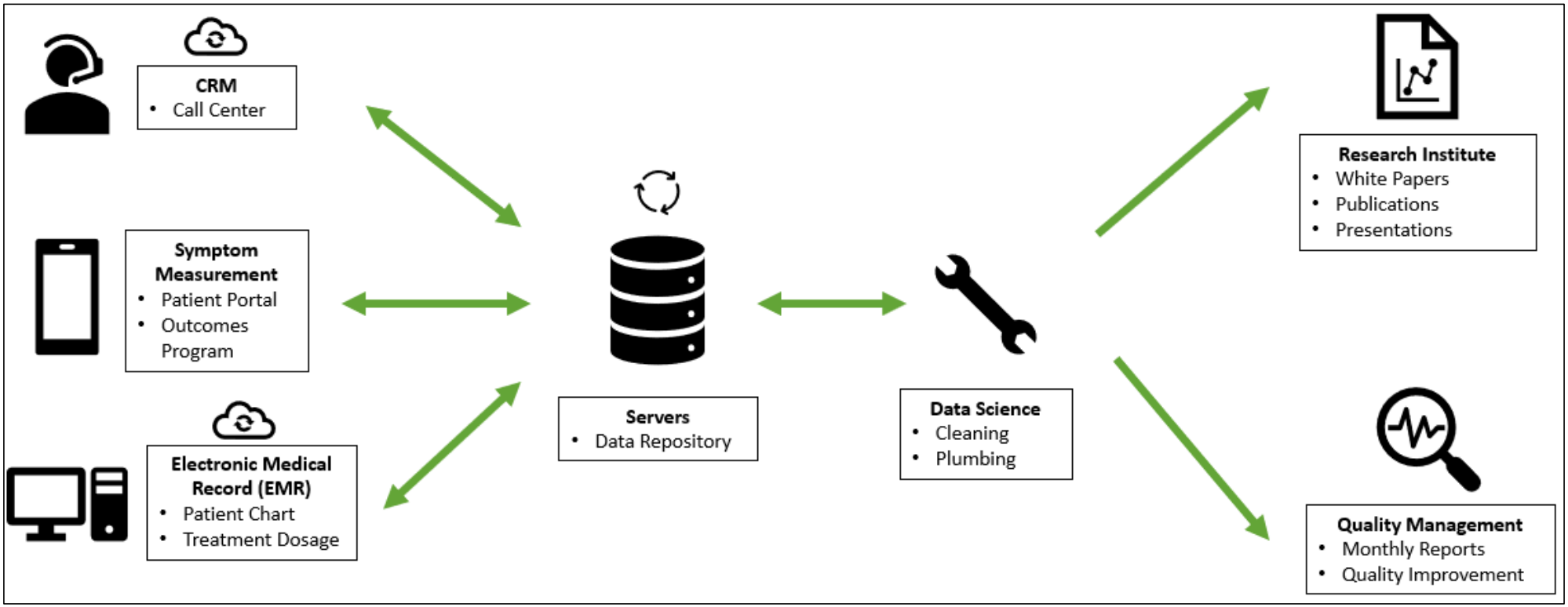
1. **Data Collection**
   - Comprehensive and accurate data gathering.
2. **Data Analysis**
   - Employing advanced analytics to uncover insights.
3. **Data Integration**
   - Combining data from various sources for a holistic view.
4. **Data Governance**
   - Ensuring data quality, privacy, and compliance.
5. **Data Culture**
   - Fostering a culture that values data-driven decision making.

Data Stack Example



Effective Data Collection (Best Practice)

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1. **Standardized Methods:** Consistent data entry and reporting procedures.
2. **Patient Engagement:** Create processes and incentives that support valid data collection.
3. **Technology Utilization:** Use EMR systems, mobile apps, and wearables.
4. **Continuous Monitoring:** Regularly update and verify data accuracy.

Data Analysis Techniques

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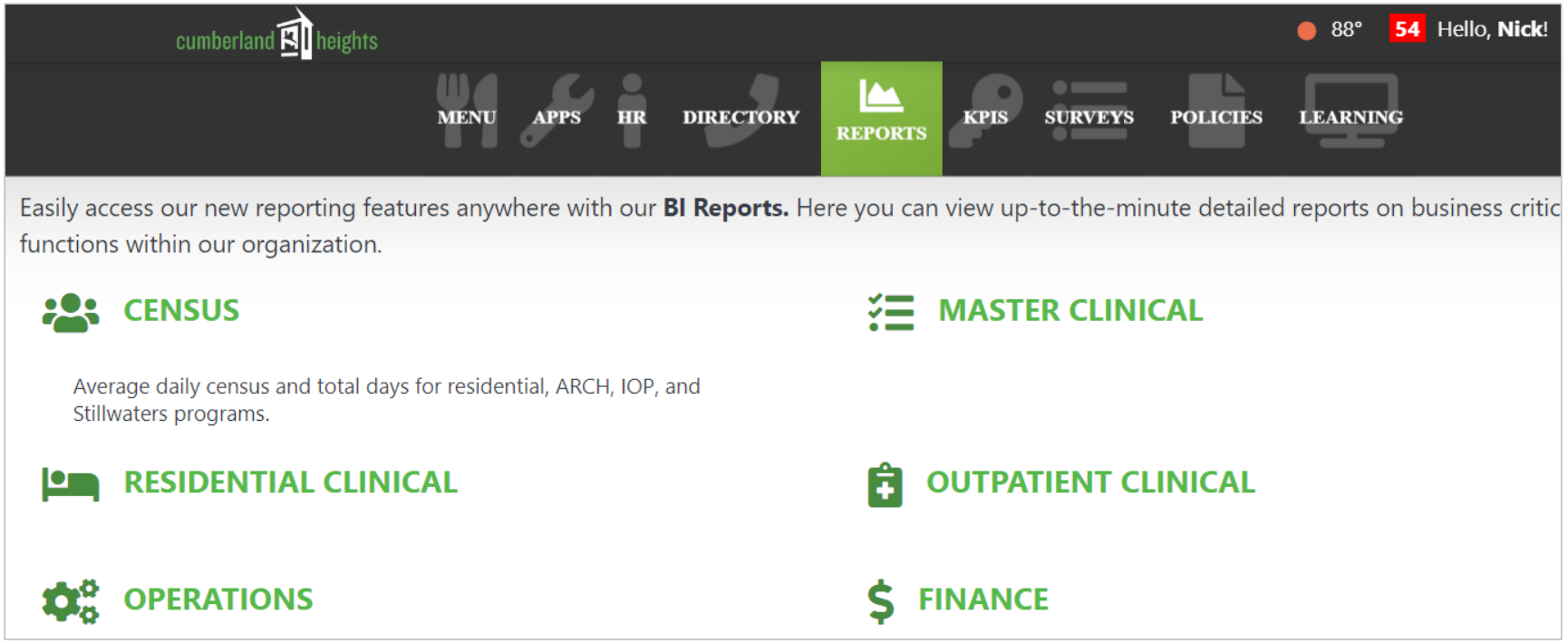
- **Descriptive Analytics:** Understanding historical data trends.
- **Predictive Analytics:** Forecasting future outcomes and risks.
- **Prescriptive Analytics:** Recommending actions based on data.
- **Visual Analytics:** Using dashboards and visual tools for better comprehension.

Visual Analytics Example



Data Governance and Compliance

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- **Data Quality:** Regular audits and validation.
- **Privacy:** Adherence to HIPAA and other regulations.
- **Security:** Robust cybersecurity measures.
- **Policies:** Clear guidelines and protocols for data use.

Fostering a Data-Driven Culture

- **Leadership Commitment:** Top-down support for data initiatives.
- **Training and Development:** Continuous learning opportunities for staff.
- **Collaborative Environment:** Encourage cross-departmental data sharing.
- **Incentivize Data Use:** Reward data-driven decision-making.

Celebration of Knowledge

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Problems to Avoid

Time/Expectations: Do not rush the process. Expect delays and stick to your simple goals.

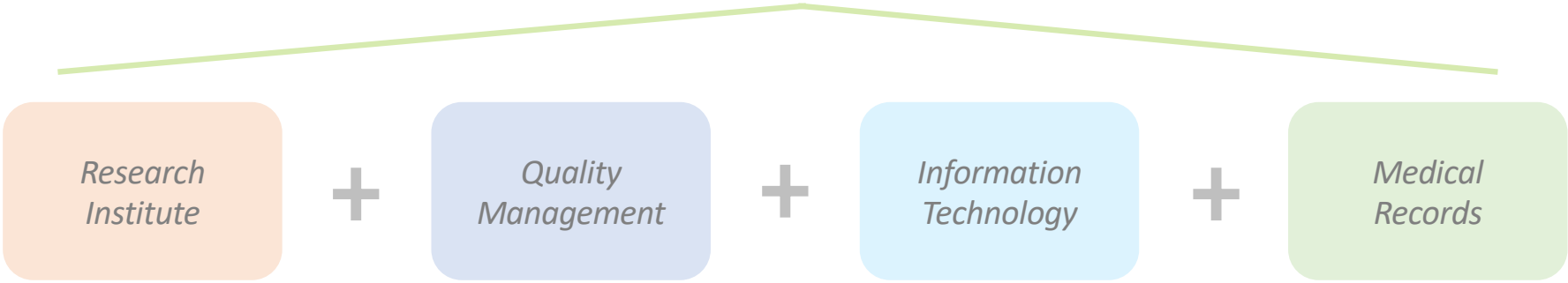
API Commitments: Ensure the database platform, access, and documentation are all congruent with your goals.

Staff Shortcuts: There is rarely a rationalization to value engineering your technical staff. You get what you pay for.

(Wickham & Grolemund, 2019)

Building Your Team

Becoming a Data-Informed Organization



Strategic Questions

- Who is your organizational champion?
- What are your operationalized goals?
- (Hardware) Cloud vs. On-Premise? [Server **Est. Cost $125,000**]
- (Software) SQL? [**Est. Cost $75,000**]
- Technical Staff? [**Network Administrator $125,000**, **Senior Developer $130,000**, and **Data Scientist $115,000**]

Implementation Road Map

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1. **Assess Current State:** Evaluate existing data capabilities.
2. **Develop a Strategy:** Align data goals with org. goals.
3. **Invest in Technology:** Acquire necessary tools and systems.
4. **Train Staff:** Build data literacy across the organization.
5. **Monitor Progress:** Regularly review and adjust the strategy.

Conclusions and Q&A

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- The future practice of addiction treatment will be ***prescriptive and tailormade***.
- The use of measurement markers will allow professionals to monitor for treatment completion ***based on valid tools—not opinion***.
- These processes will support our ability to (1) **increase access to recovery**, (2) **improve our programs**, and (3) **communicate with external stakeholders**.
- Very simply, ***the future of addiction treatment lies within our data***.
- **Next Steps:** Start small, prioritize key areas, and scale up.

Contact

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References

1. Agency for Healthcare Research and Quality (AHRQ). (2019). About Learning Health Systems. Rockville, MD. https://www.ahrq.gov/learning-health-systems/about.html
2. Onnela, J. P., & Rauch, S. L. (2016). Harnessing smartphone-based digital phenotyping to enhance behavioral and mental health. *Neuropsychopharmacology*, 41(7), 1691-1696.
3. Wickham, H., & Grolemund, G. (2016). *R for data science: import, tidy, transform, visualize, and model data*. " O'Reilly Media, Inc.".

Upcoming Sessions

10:30-11:00 Exhibit Hall Coffee & Networking Session

Sponsored By: SIGMUND SOFTWARE

10:30-2:00 FoRSE Technology Partner Demos
Expo Room #1

11:00-12:30 NAATP Public Policy Advocacy Update & NAATP PAC
&
Neurorestorative Healthcare: The Brain Tells us What Works
Plaza Ballroom A

12:30-2:30 CEO-to-CEO Leadership Lunch: Clinical Leadership within Business Healthcare
Plaza Ballroom E

Sponsored By: ALINA LODGE, HIGH WATCH RECOVERY CENTER, CEO TO CEO C2C

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