Opioid Use Disorder: UI Mile Square/Family Guidance Integrated Methadone Treatment Program

MSHC UIC Team Presenters: Nicole Gastala, MD, Christine Neeb, MD, Brianna McQuade, Pharm D

Family Guidance Team Presenters: Maria Bruni, PhD

Disclosure Information

- Nicole Gastala, MD
  - No Disclosures
- Christine Neeb, MD
  - No Disclosures
- Maria Bruni, PhD
  - No Disclosures
- Brianna McQuade, PharmD, BCACP, MHPE
  - No Disclosures
- Jessica Richardson, MD
  - No Disclosures
- Linda Lesondak, PhD
  - No Disclosures
- Samantha Madrid
  - No Disclosures

Learning Objectives

Upon completion, attendees will be able to:

- Gain a foundational understanding of evidence-based clinical program design from health-care professionals and community planning to implement a methadone program in a full-service primary care clinic.
- Understand approaches to partnering and implementing an innovative collaborative care model, including troubleshooting, and designing their own workflow to best facilitate replication of an integrated MOUD model of care within their clinical practice setting.
- Review outcome and quality metrics that can be measured when implementing an integrated, collaborative model of care for primary care, addiction, and mental health.

Needs Assessment

- In the traditional treatment model, patients with OUD are directly referred to specialty services outside of their regular source of care.
- Many patients do not continue to engage in primary care and there is little communication between systems.
- In addition to the lengthy wait lists and structural barriers, there are other factors that impact a patient's access to care including SDOH.

Needs Assessment

- An integrated interprofessional model of care that is able to provide counseling and MOUD within an underserved primary care setting is needed to adequately address patients' whole health including:
  - Preventive health care
  - Chronic disease management
  - Behavioral health care
  - Dental care
  - WIC/SDOH
  - SUD care

- Most methadone clinics are separated from the general health care system and may be inaccessible by public transportation.

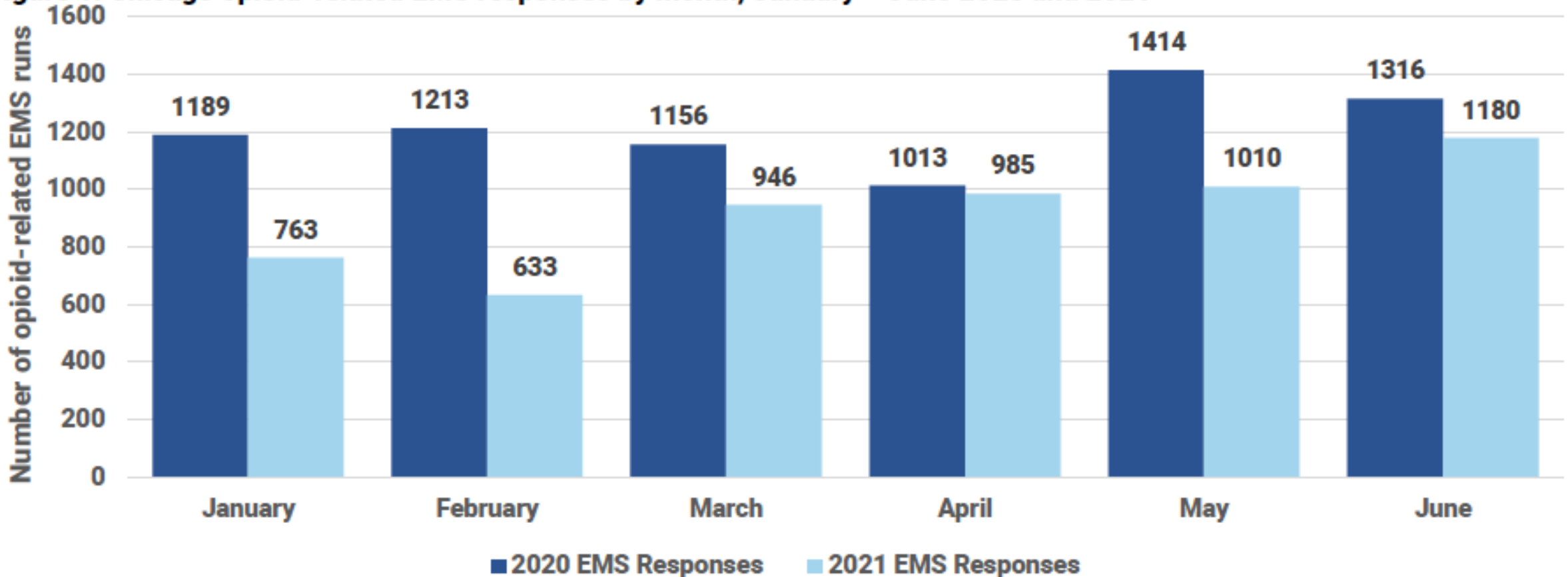
The Opioid Epidemic: Current Statistics in Chicago

CHICAGO OPIOID UPDATE: Mid Year 2021

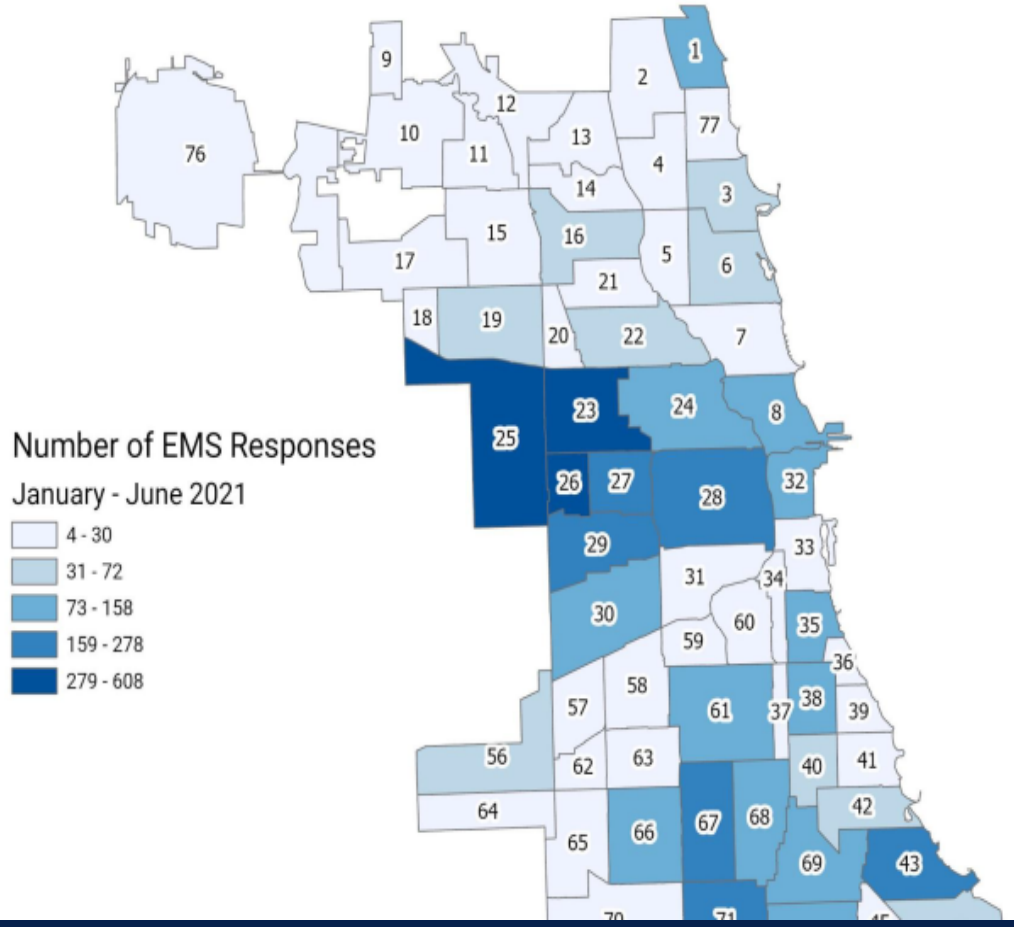
Opioid-Related overdose deaths are provisional, and subject to change. For internal use only

There were 5,517 opioid-related EMS responses and 467 opioid-related deaths in Chicago in January-June 2021. This is a decrease of 1,784 opioid-related EMS responses and a decrease of 106 deaths compared to the same time period in 2020.

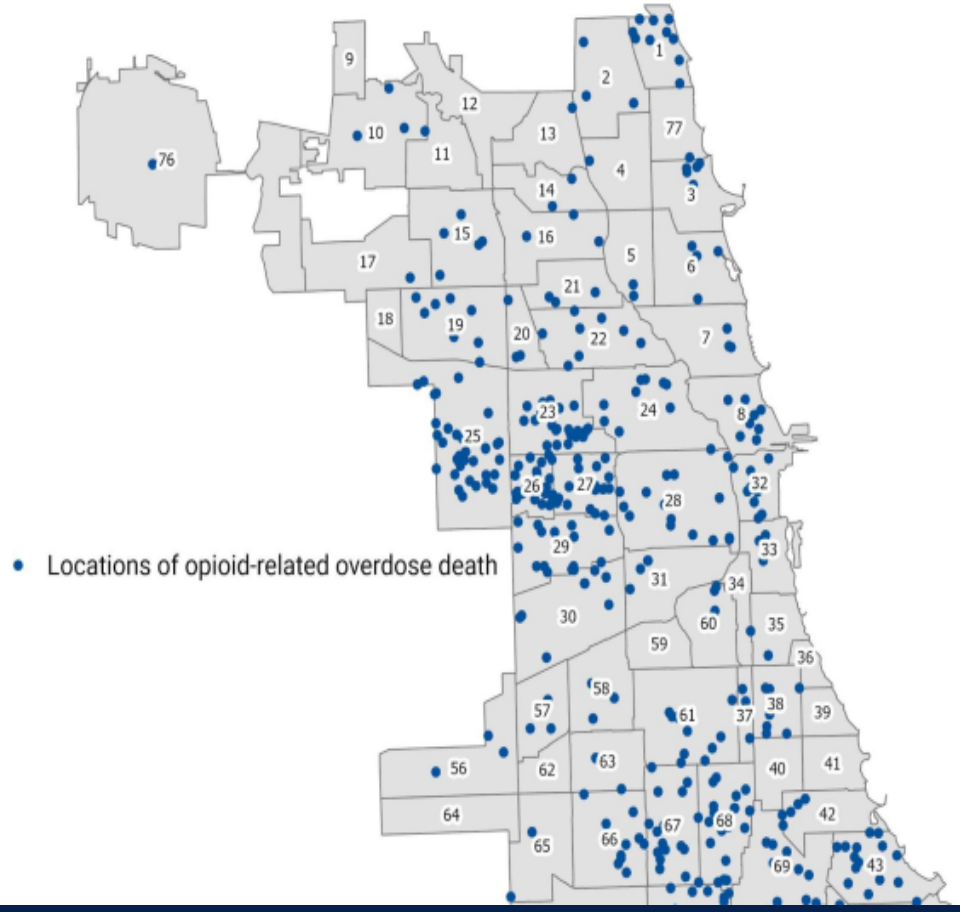
Figure 1: Chicago opioid-related EMS responses by month, January – June 2020 and 2021



Map 1. CFD EMS responses for opioid-related overdose by community area of incident, Chicago January-June 2021



Map 3: Opioid-Related overdose deaths that occurred in Chicago, January- June 2021 (n=467)



Opioid Use Disorder: Definition & Treatment at UI Health Mile Square Health Center (MSHC)

OUD Treatment

Behavioral health support - individual counseling, formal treatment programs

Medications for Opioid Use Disorder (MOUD)

1) Methadone
2) Buprenorphine (+/- naloxone)
3) Extended-release naltrexone

Clinical outcomes of MOUD vs treatment without medication

Outcome	Buprenorphine	Methadone	XR Naltrexone
Increased retention in treatment	X	X	X
Reduced illicit opioid use	X	X	X
Reduced risk of overdose death	X	X	
Reduced all-cause mortality	X	X	
Reduced HIV risk behaviors	X	X	

Source: SAMHSA Tip 63, 2020

Retention in Treatment at 12 Months With Reduced Illicit Drug Use

Treatment type	Retention in treatment at 12 months with reduced illicit drug use
Behavioral therapy without medication	6%
XR Naltrexone*#	10–31%
Buprenorphine*	60–90%
Methadone*	74–80%

Based on meta-analysis of research studies; rates of success lower in real-world settings.
#Most XR Naltrexone studies were only 3–6 months; 12-month registry study only had % discontinued due to meeting goals; numbers presented here are different than report referenced because they were updated based on Jarvis study.
Permission for Use by Dr. Elizabeth Salisbury-Afshar, Elitzer, 2017, Jarvis, Holtyn, et al., 2018
Elitzer, J. (2017). Why health plans should go to the "MAT" in the fight against opioid addiction. California Health Care Foundation.
https://www.chcf.org/wp-content/uploads/2017/12/PDF-Why-Health-Plans-Should-Go-to-the-MAT.pdf

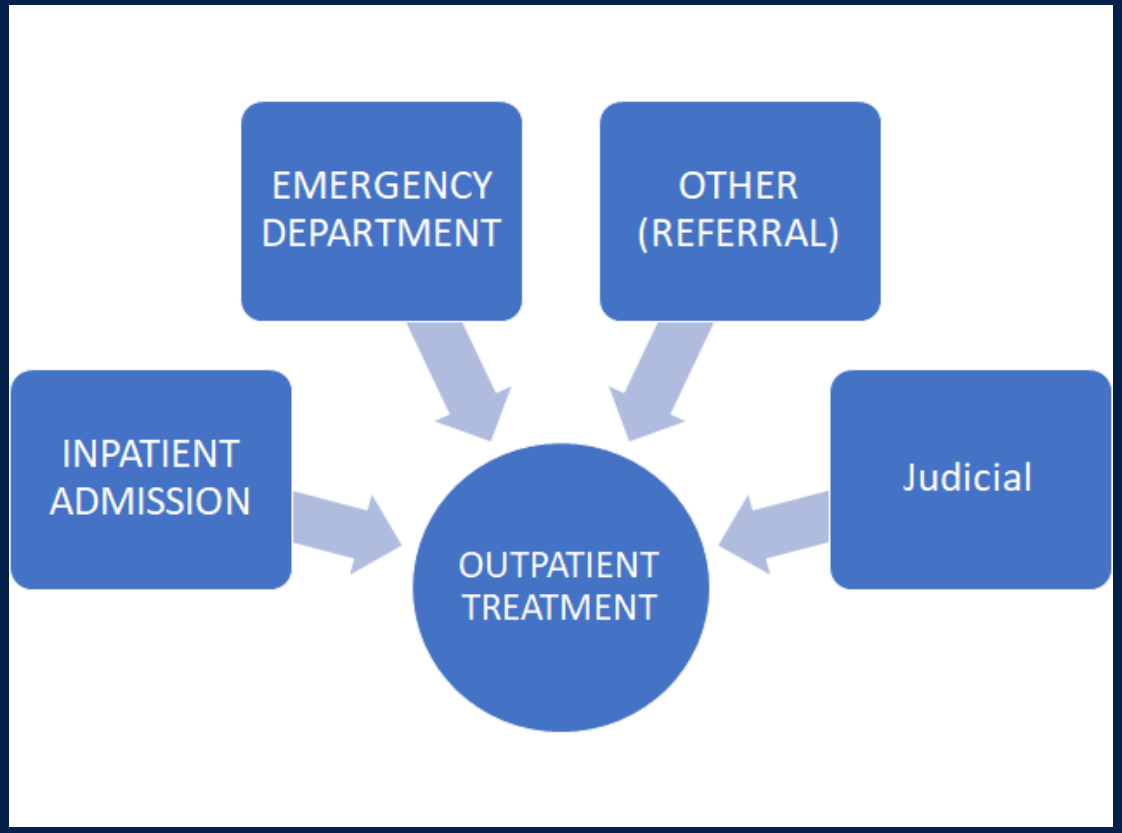
Number Needed to Treat to Prevent 1 Death in 1 Year

- Statins: 415
- Mammogram: 2,970
- Buprenorphine after overdose: 33
- Methadone after overdose: 31

"Discussing medications that can treat OUD with patients who have this disorder is the clinical standard of care"—SAMHSA Tip 63

Where to Initiate Treatment? Everywhere!

- Patients with OUD are frequently hospitalized with complications of OUD, but rarely is treatment for OUD initiated and many leave AMA
- Patients present to the ER on average 6-9 times prior to an overdose death
- Treatment initiation and retention significantly impacts morbidity and mortality
- The hospital or ED may be their only access point to care



FAMILY GUIDANCE CENTERS (FGC)

FAMILY GUIDANCE CENTERS, INC. (FGC) is a not-for-profit organization that exists to promote the well-being of individuals and communities through substance abuse prevention, education, treatment, and recovery support services.

FGC is a leading OTP in Illinois, providing medication assisted recovery (MAR) at 12 locations across the state.

Low-barrier access to MOUD is a key part of FGC's program model, which includes co-location and collaboration with community healthcare institutions as well as mobile MAR units in Chicago and East Central Illinois.

Treatment at MSHC

Collaborative Primary Care-Behavioral Health Care Model

- Primary care clinicians actively manage or co-manage patients with addiction and mental health disorders.
- Same day, warm hand-off services are available for all patients by the onsite behavioral health consultants (LCSW/LCPC/CADC)

Medication Assisted Recovery

- MSHC's addiction care model has historically only included buprenorphine and naltrexone
- As a result of the partnership with FGC, MSHC is now also able to offer access to methadone for those patients with OUD within primary care

1.15.2020

Which medication for opioid use disorder is right for me?

These medications are proven to lead to better recovery outcomes than other types of treatment.

	Methadone	Buprenorphine (Suboxone®)	Naltrexone (Vivitrol®)
What you'll feel	You will have less intense withdrawal symptoms and your cravings will improve.	You will have less intense withdrawal symptoms and your cravings will improve.	You will not feel the effects of opioids or feel high. You might also have reduced cravings for opioids.
What you'll take	Methadone is a liquid that you drink.	Buprenorphine often comes in a film called Suboxone® that dissolves in your mouth. You can take home a 1–30 day supply. Pills, 30-day injections, and implants are less common.	Vivitrol® is injectible naltrexone that lasts for 28 days.
When you'll take it	You can start methadone at any time after you are enrolled in services at a methadone clinic, if you are physically able.	You need to feel withdrawal before starting, which depends on your personal opioid use.	You have to be completely off of all opioids for 7–10 days before you can get this injection.
Where you'll go to get it	Go to a dedicated clinic every day for a dose until you are eligible for take-home doses.	Bring your prescription to a pharmacy after visiting a certified clinician.	Visit any clinician who will write a prescription and provide the injection.
Steps you'll take	**1.** You schedule an intake appointment at a methadone clinic. **2.** During the appointment, you will be evaluated and agree on a treatment plan. **3.** You are most likely started on methadone that day or the next if the clinician feels it is appropriate.	**1.** You schedule an appointment at a clinic or health center. **2.** You are evaluated and prescribed buprenorphine. **3.** You may pick up your buprenorphine from a pharmacy as soon as your appointment is done.	**1.** After you stop using opioids, wait 7–10 days. **2.** You return to a clinician for the injection. **3.** A health-care worker will follow up about symptoms and another injection every 28 days.
More information	74–80% of people stay in treatment after 1 year.* This medication has been shown to reduce risk of overdose and death. The daily commitment provides a high level of accountability. Risk of overdose is high if you use other opioids or depressants with methadone. Counseling is required.	60–90% of people stay in treatment after 1 year.* This medication has been shown to reduce risk of overdose and death. Comes in different flavors, but choice might be limited by your insurance. Counseling is recommended.	10–21% of people stay in treatment after 1 year.* This medication has *not* been shown to reduce risk of overdose or death. If you miss an injection, your risk of overdose increases greatly.

*California Health Care Foundation. *Why health plans should go to the MAT in the fight against opioid addiction.*

Jarvis et al. Addiction. 2018;113(7):1188-1209

Issues you should discuss with your provider

- Your questions about outpatient detox, withdrawal symptoms, and discomfort.
- Your prior experiences with medications for opioid use disorder treatment.
- Possible interferences with treatment like employment, transportation, or child care.
- Access to the medicine that reverses opioid overdose: naloxone/Narcan®. You could use it to save someone else's life, or someone could use it to save yours.

UI Health | UIC | UIC Center for Dissemination and Implementation Science | UIC Community Outreach Intervention Projects

Shared Decision-Making from Outside Referral or Walk-ins

Individual interested in MAR for MOUD.
Review: Buprenorphine, Methadone, Naltrexone

Interested in buprenorphine, methadone, or naltrexone at MS-Main

Call Mile Square Health Center**
If unable to reach by phone – send Epic Chat message to the CARN, LPN, and supervising physician to ensure patient is scheduled for 8:30am standing appointment (M-F only)

If unscheduled, instruct patient to present to MS-Main at 8:30am and ask for MAR walk-in M-F (exception TUESDAYS please inform patients to walk in by 9:30am)

Please inform patient that they may need to wait but we will get patient seen that day

Provide the patient with a handout on MOUD options, follow up instructions, and contact number

Interested in Methadone and MS-Main location **is not convenient** for patient

SW to assist with linkage to Methadone Maintenance Treatment Program closer for patient (1-833-2FINDHELP)

Link due to proximity or individual preference (ex: other MSHC locations, Cook County Health Department, community-based programs

Patient is interested in MAR through buprenorphine, methadone, or naltrexone → Moved forward to scheduling

MSHC location not convenient or feasible → A social worker assists with linking the patient to methadone maintenance at a more convenient treatment program

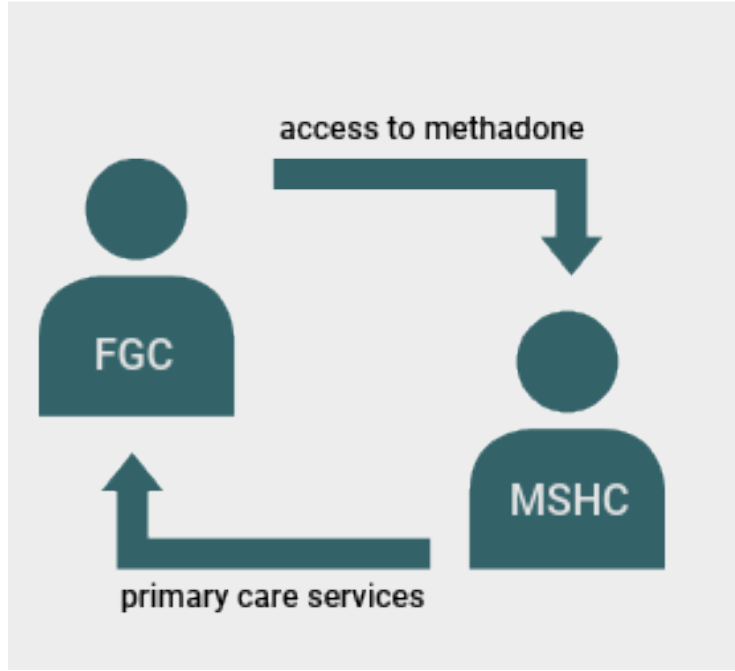
Methadone MSHC: Partnership with FGC

FGC provides:

- Methadone clinic infrastructure
- Appropriate documentation and program design
- Counseling services
- DEA licensing/communication
- Nursing for dosing and evaluations
- Peer support
- Security

MSHC provides:

- Integrated behavioral health care (mental health)
- Primary care
- Preventive health services
- Lab/imaging, Dental, WIC, Pharmacy
- Physician/medical leads - daily availability with a medical provider



Methadone MSHC: Partnership with FGC

Co-managed Staffing matrix

Medical Director (MSHC)	Requires a background and experience in behavioral, primary care, and addiction healthcare, 1-4 hrs. per day.
Program Director (MSHC)	Provides program oversight and clinical supervision and can provide direct services.
Primary Care Clinicians (MSHC)	Provide physical exams, primary care services, preventive care services, and the prescription for OUD as decided by patient needs (methadone, buprenorphine/naloxone, or naltrexone). PCPs bill accordingly.
Nurses (FGC- minimum LPN or RN)	1.5 FTE LPNs (Licensed Practical Nurses) per site to dispense methadone, record all state and federally required methadone accounting documentation and support MSHC/UIH physicians in both MAR service documentation and coordination for primary care needs.
Counselors (FGC- minimum CADC or state licensed)	Manage direct counseling services, treatment planning/continued stay and service note documentation, documentation of integrated services, monitors dosing attendance and toxicology compliance.
Recovery Support (MSHC or FG - RSS Certified)/Peer Support	Focuses mainly on individuals in the first six months of treatment to assist with stabilization and early recovery. However, the recovery support services are available to all patients. Recovery support staff paired with substance use counselors consult and identify individuals most in need of and most ready to take advantage of the services.
Intake Worker (FG- CARS Certified)	Greets new patients, collect their information, and determine their needs with regard to OUD and program eligibility.
Security System (FGC)	Provides the security system required by the DEA to safeguard the methadone. This includes motion detectors, contact switches, panic buttons, a floor safe, a closed-circuit camera and a 24/7/365 central monitoring station with Chicago Police linkage. FGC also provides security personnel staff to monitor patient traffic in the designated area.

Internal Referral/walk-in

The patient and/or PCP calls to schedule an appointment

↓

Through shared decision-making, the FGC intake process is initiated

↓

The patient receives their initial dose

↓

The patient is scheduled for follow-up as an established patient

↓

Patient follows daily dosing workflow as outlined for established patients

Internal Hospital Discharge Referral

Consents, releases and orientation to the dosing process is done when FGC receives the patient from in-patient hospitalization

↓

The patient receives their initial dose

↓

Dosing is given that very day or the day of discharge

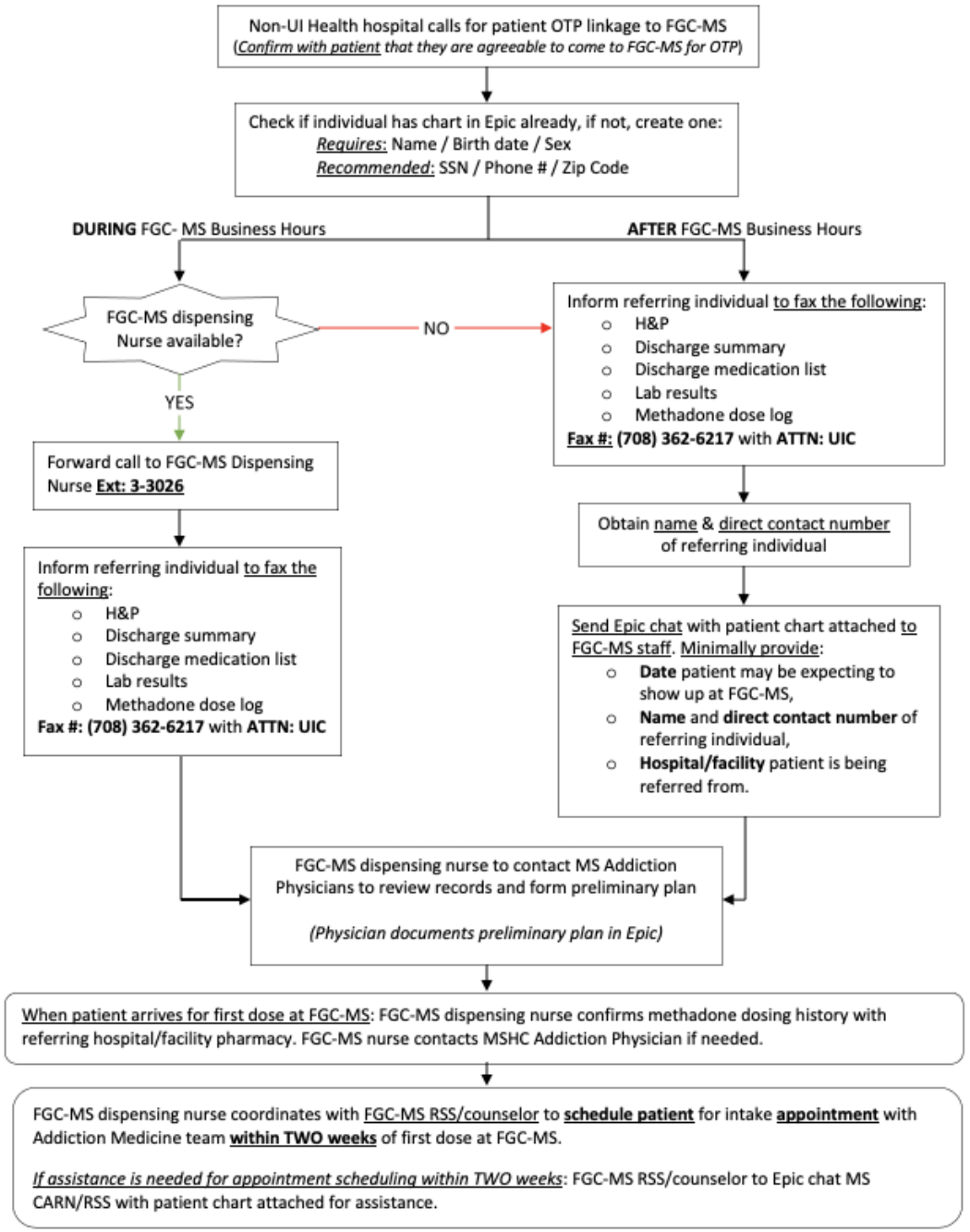
↓

Follow-up with physician scheduled within days of discharge

↓

Patient follows daily dosing workflow as outlined for established patients

FGC-MS Workflow for Admission from Non-UI Health Hospital



Sustainability Model

No change in MSHC or FGC staffing

Under the current SUPR/Medicaid system, FGC and MSHC are each able to bill their provided services

The partnership is sustainable and improves patient access/care.

Reimbursement rates for FY 2023 are as follows: Service	Minimum Unit of Service	Code	Rate
Admission and Discharge Assessment	Quarter Hour	AAS	$105.56 – Per Hour $26.39 – Per Quarter
Level 1 (Individual)	Quarter Hour	OP	$100.36 – Per Hour $25.09 – Per Quarter
Level 1 (Group)	Quarter Hour	OP	$38.04 – Per Hour $ 9.51 – Per Quarter
Level 2 (Individual)	Quarter Hour	OR	$100.36 – Per Hour $25.09 – Per Quarter
Level 2 (Group)	Quarter Hour	OR	$38.04 – Per Hour $ 9.51 – Per Quarter
Case Management	Quarter Hour	CM	$77.72 – Per Hour $19.43 – Per Quarter
Psychiatric Evaluation	Per Encounter/Per Day		$131.34 – Per
Medication Assisted Recovery (Methadone for Opioid Use Disorder)	Weekly	OP	$113.06 – Weekly
Early Intervention (Individual)	Quarter Hour	EI	$100.36 – Per Hour $25.09 – Per Quarter Hour
Early Intervention (Group)	Quarter Hour	EI	$38.04 – Per Hour $ 9.51 – Per Quarter Hour
Community Intervention	Quarter Hour	CIH	$97.48 – Per Hour $24.37 – Per Quarter Hour

2023 Medical Rate MSHC	2023 Behavioral Rate MSHC
$176.85	$65.96

Data Collection

January 11, 2021 –
February 10, 2023

- Begins after completing the intake process
- Prior to dosing
- Patient self-reported questionnaires
- EMR chart review (EPIC)
- SAMMS – substance abuse & medication management system chart review

Data Variables

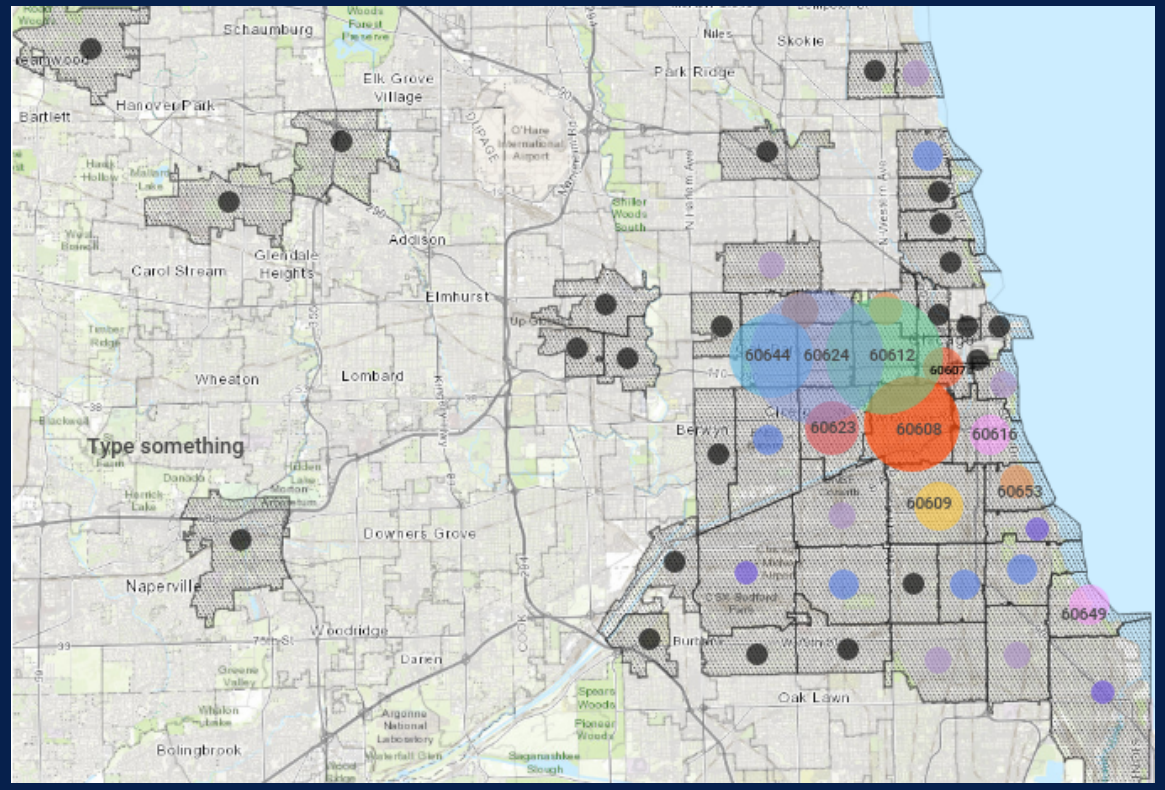
- Age
- Race
- Ethnicity
- Gender
- Patient origin
- Previous MOUD treatment
- Previous overdoses
- Justice Involvement
- Incarceration history
- Social Determinants of Health
- Comorbidities
- Health Screenings and Immunizations
- Referral to Behavioral Health
- % with a completed PCP appt. within 4 weeks of induction into the program
- Patient Engagement

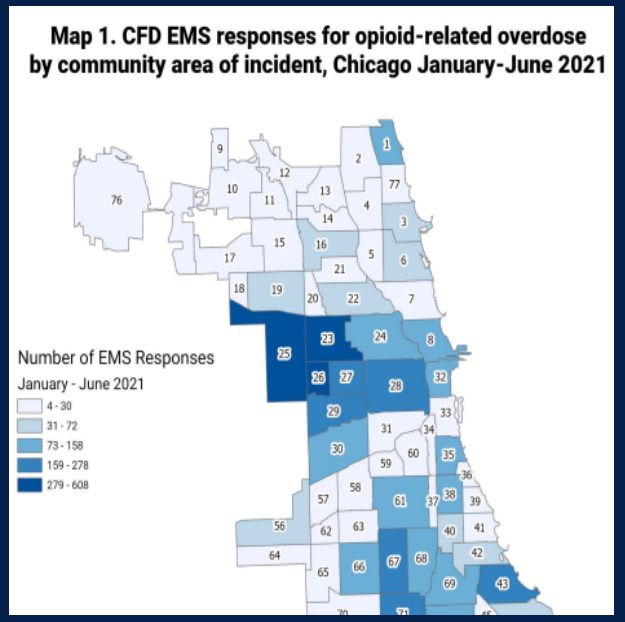
Results: Patient Volume

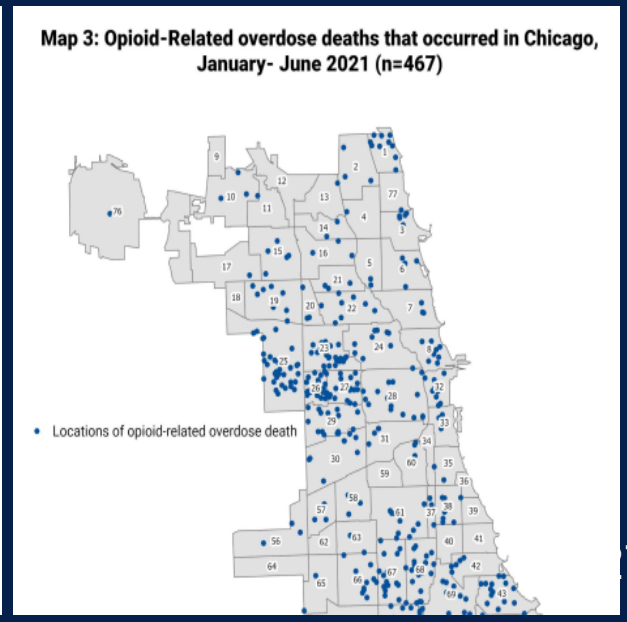
- The number of active patients is fluid, as new patients join the program, patients are lost to follow-up, and patients who were lost to follow-up are often re-instated.
- 260 individuals were patients in the methadone program between January 2021 to February 10, 2023.
- 92 patients were fully active within the MSHC-FGC program as of February 10, 2023.

Results: Catchment Area

The methadone program patient population resides in 55 zip codes across Chicago and nine (60046, 60402, 60471, 60648, 60505, 60534, 60804, 60087, 61354) which fall outside of Chicago.

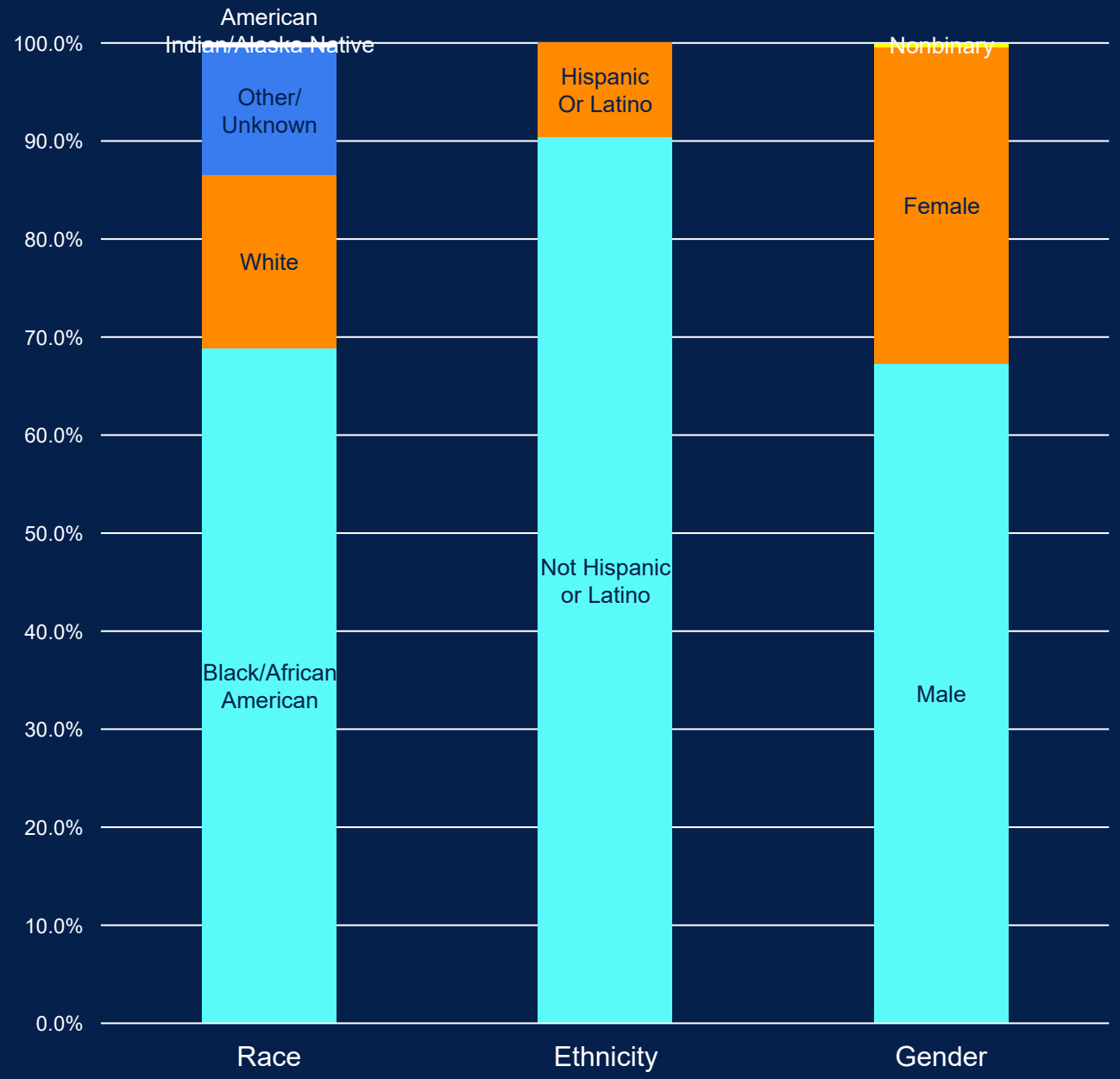






Results: Demographics

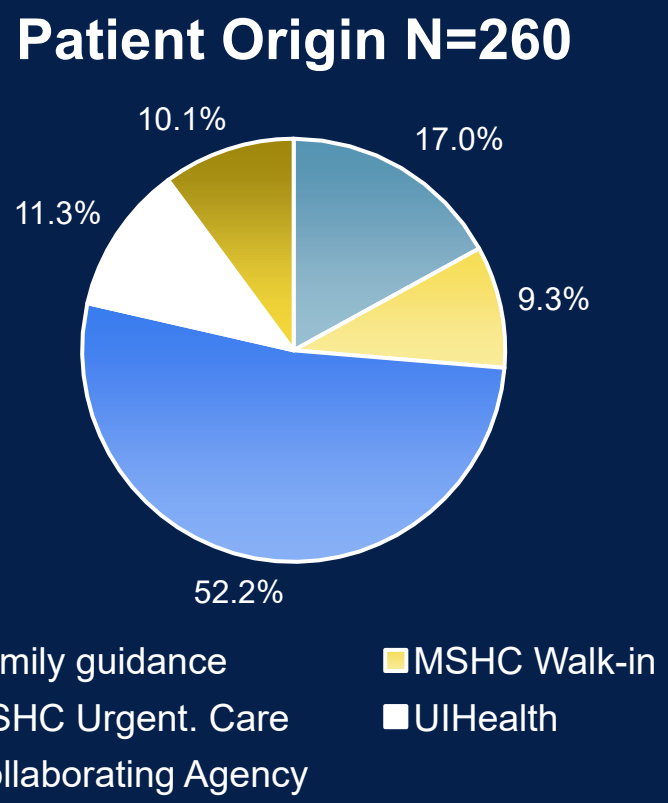
- Population is majority African-American/Black Males
- Average age: 52.7 years old
- Range of ages: 24 to 80 years old



Reflective of patients as of February 10, 2023

Results: Referral and OUD History

- Of all active patients, approximately 11% were from UI Health ED/Inpatient, 25% were from FGC or a collaborating agency, and over 60% were walk-in, urgent care, or referrals from the MSHC community
- A large proportion of patients (73.1%) received previous MOUD treatment and over 56% had been on Methadone in the past.
- Over 55% of the population has had one or more opioid overdoses.

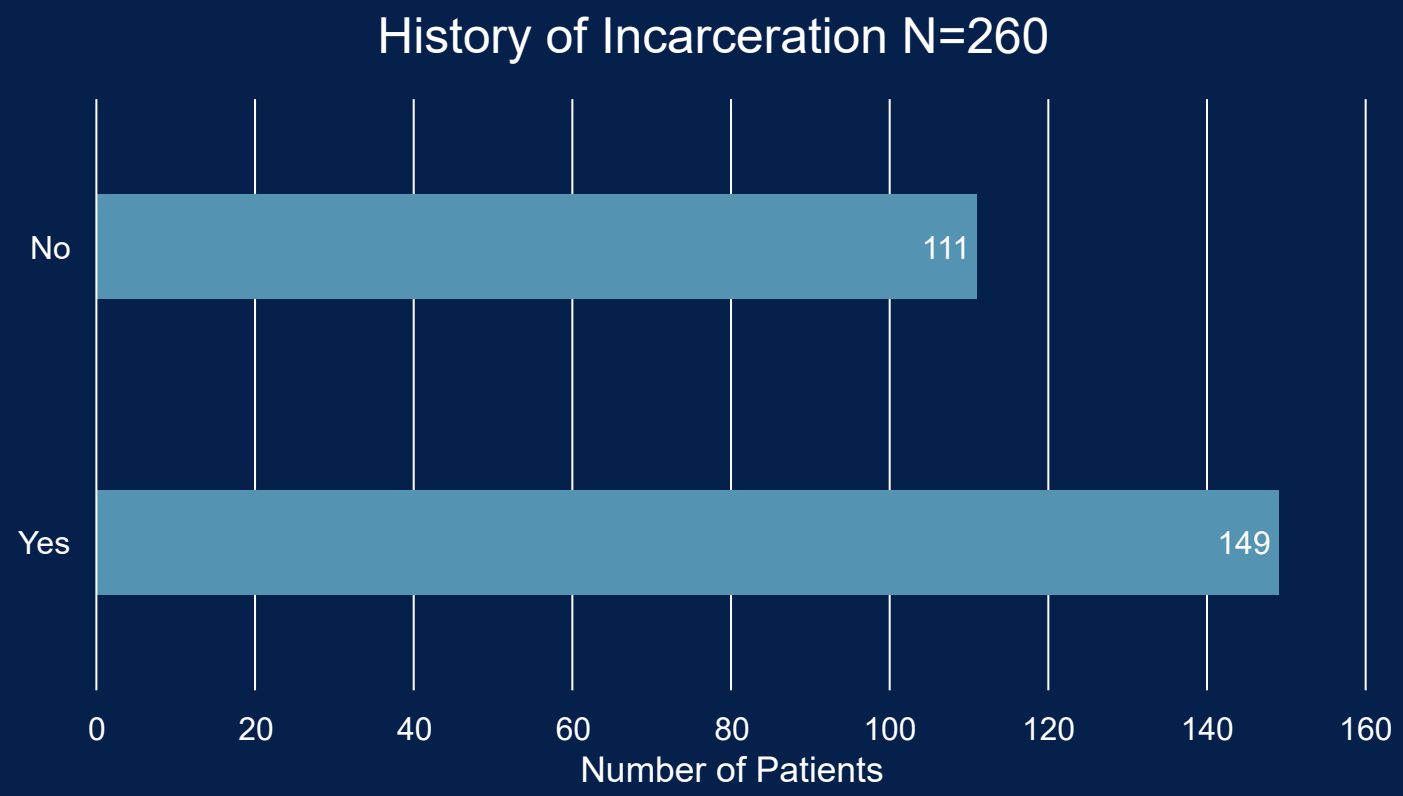


Received Previous MOUD Treatment	190 (73.1%)
Suboxone	62
Methadone	148
Rehab	6
Residential	14
Withdrawal Management/Detox	26
Previous Overdoses	146 (56.1%)

Reflective of active patients as of February 10, 2023

Results: Justice Involvement

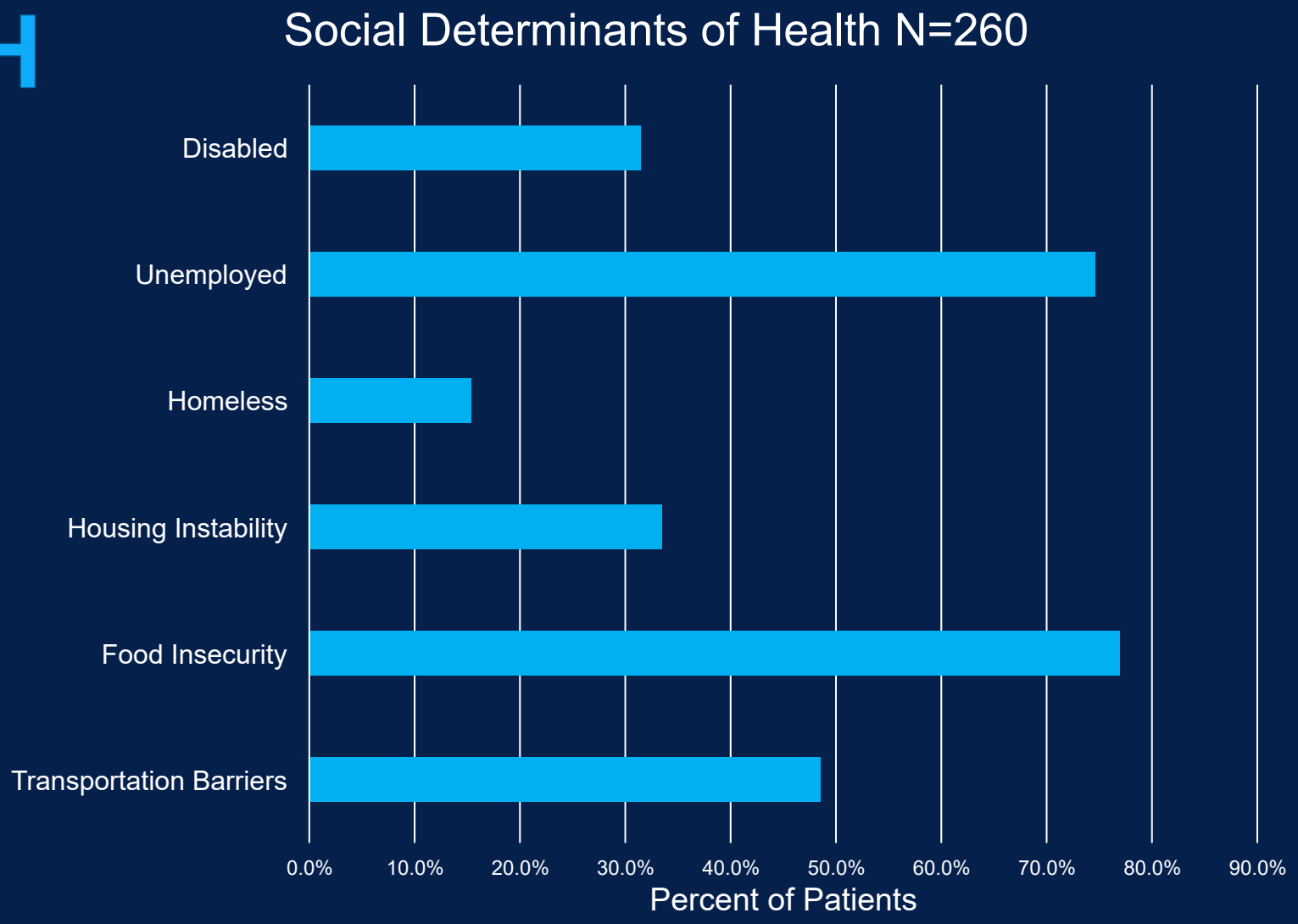
- Almost the entire population has some sort of justice involvement, either arrests, charges, parole and/or probation.
- Nearly 60% of the population has been incarcerated (n=260).
- Charges vary from drug trafficking, drug possession, theft, robbery, and shoplifting.



Reflective of active patients as of February 10, 2023

Results: SDOH

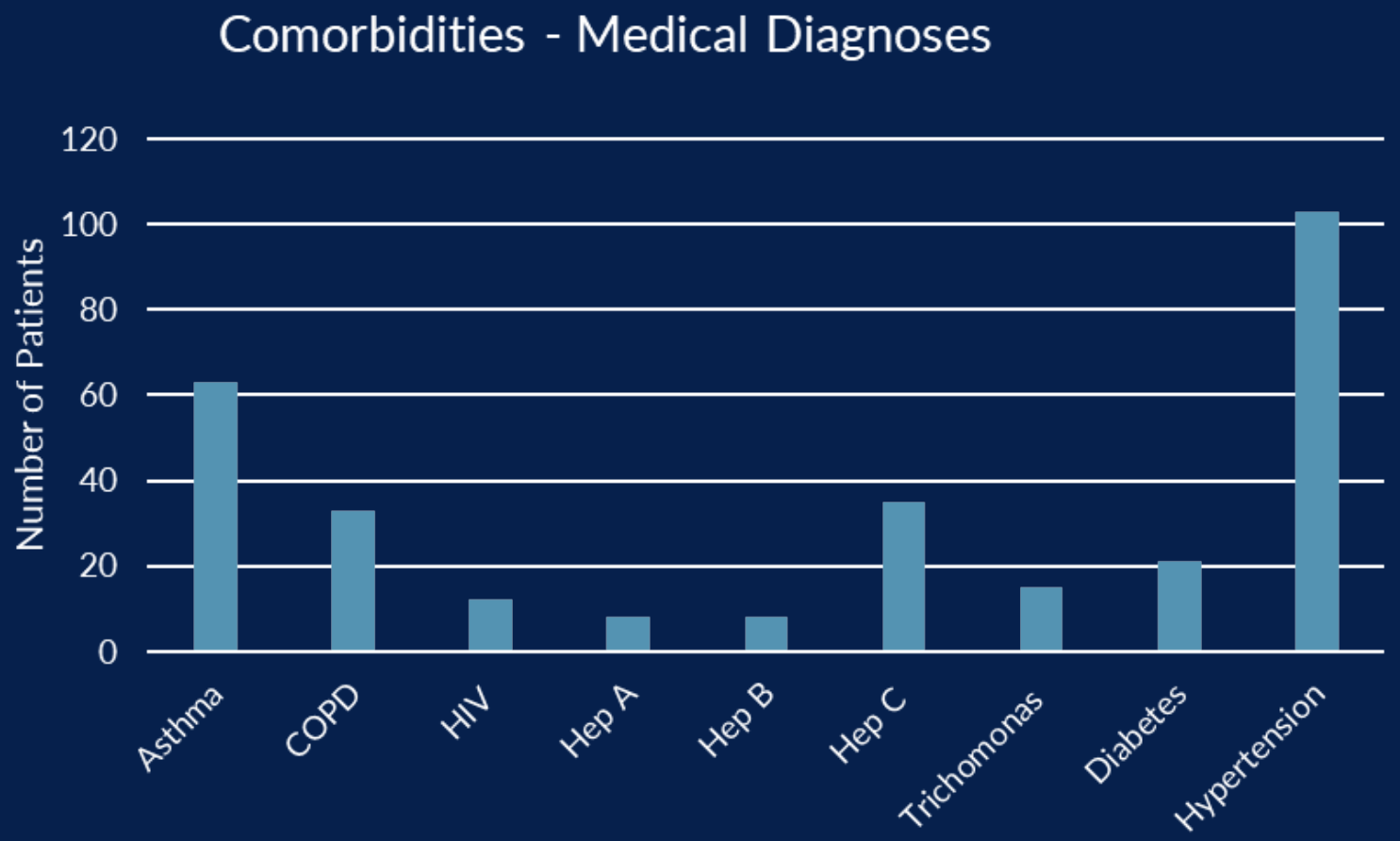
- The population faces high rates of adverse social determinants of health markers:
  - Over 70% are unemployed
  - Over 70% have food insecurity
  - Nearly 50% experience housing insecurity
  - Nearly 50% experience transportation barriers



Reflective of active patients as of February 10, 2023

Results: Comorbidities

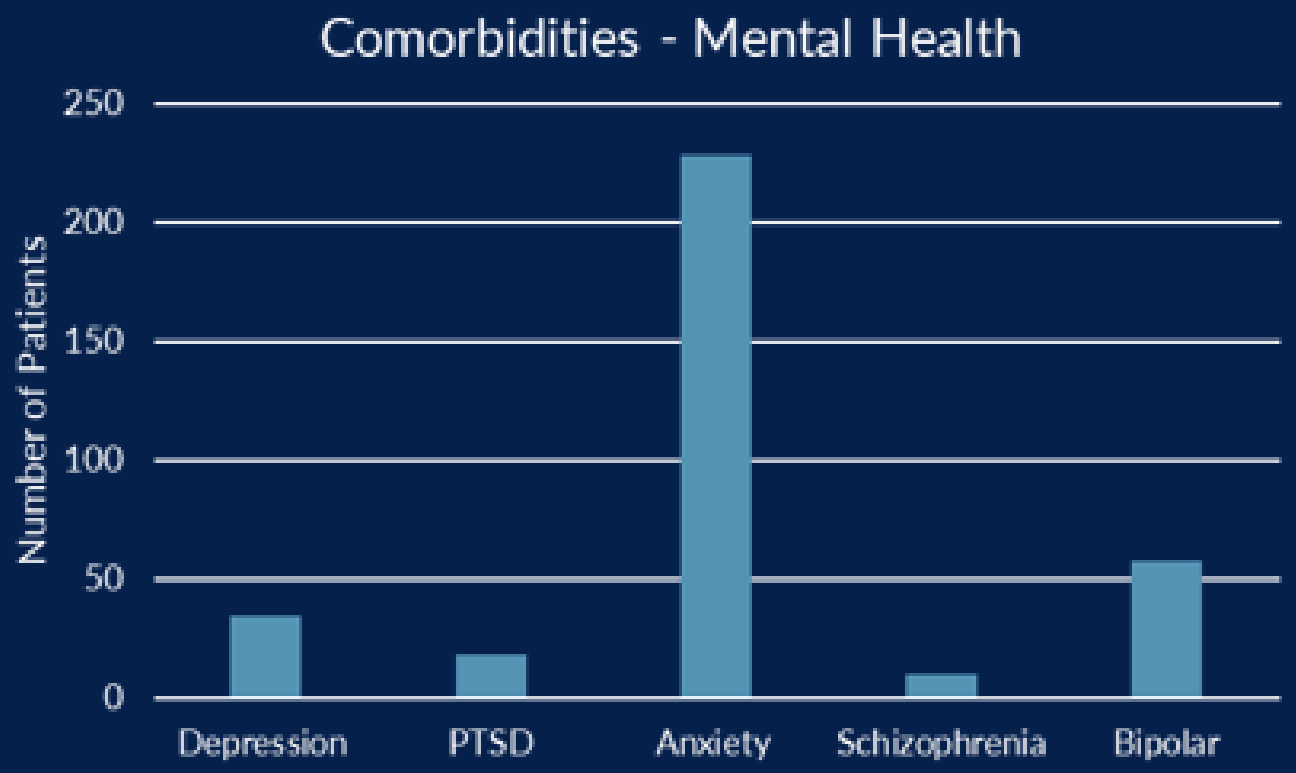
- Most patients have one or more comorbidities, with hypertension, asthma, and Hepatitis C as the most common
- More than 40% have three or more chronic health conditions.



Reflective of active patients as of February 10, 2023

Results: Comorbidities

- Almost all patients have a co-occurring behavioral health diagnosis such as Bipolar, PTSD, Depression, Anxiety, and Schizophrenia
- Anxiety is the most prevalent Co-Occurring Diagnosis



Reflective of active patients as of February 10, 2023

Results: Preventive Health

- 100% of patients are scheduled for an appointment with a PCP
- Nearly 50% of patients are seen by a primary care provider within 4 weeks of admission to the program
- The majority are screened for diabetes, hyperlipidemia, and pertinent infectious diseases including STIs

Health Screenings N=260		
	Number of patients screened	% patients screened
Hemoglobin A1C (n=121)	95	78.51%
Lipid Panel (n=219)	146	66.7%
Gonorrhea (n=260)	159	61.2%
Chlamydia (n=260)	159	61.2%
HIV (n=260)	207	79.6%
Hep C (n=259)	195	75.3%
Chest CT (n=28)	5	17.9%
Pap Smear (n=75)	15	20.0%
HPV (n=71)	13	18.3%
Syphilis (n=260)	193	74.23%
Prostate Specific Ag (n = 76)	32	42.33%

Reflective of patients as of February 10th, 2023

Results: Immunizations

- Many clients may have had some preventive vaccinations prior to enrolling in the program which may not be reflected in the Electronic Medical Record (ie. TDAP – every 10 years).

- This program began in 2021 when COVID vaccinations first became available and 40% of patients received at least 1 dose of the primary COVID immunization series through MSHC

Immunizations N=260		
	Number of Patients Immunized	Percent of Patients Immunized
Hep B (n=260)	33	12.7%
TDAP (n=260)	111	42.7%
1 dose Covid-19 Vaccine given at MSHC (n=260)	104	40.0%
2 doses Covid-19 Vaccine given at MSHC (n=260)	53	20.4%
Zoster (Shingrix) (n=170)	30	17.6%

Reflective of patients as of February 10, 2023

Results: Engagement with Behavioral Health and Primary Care

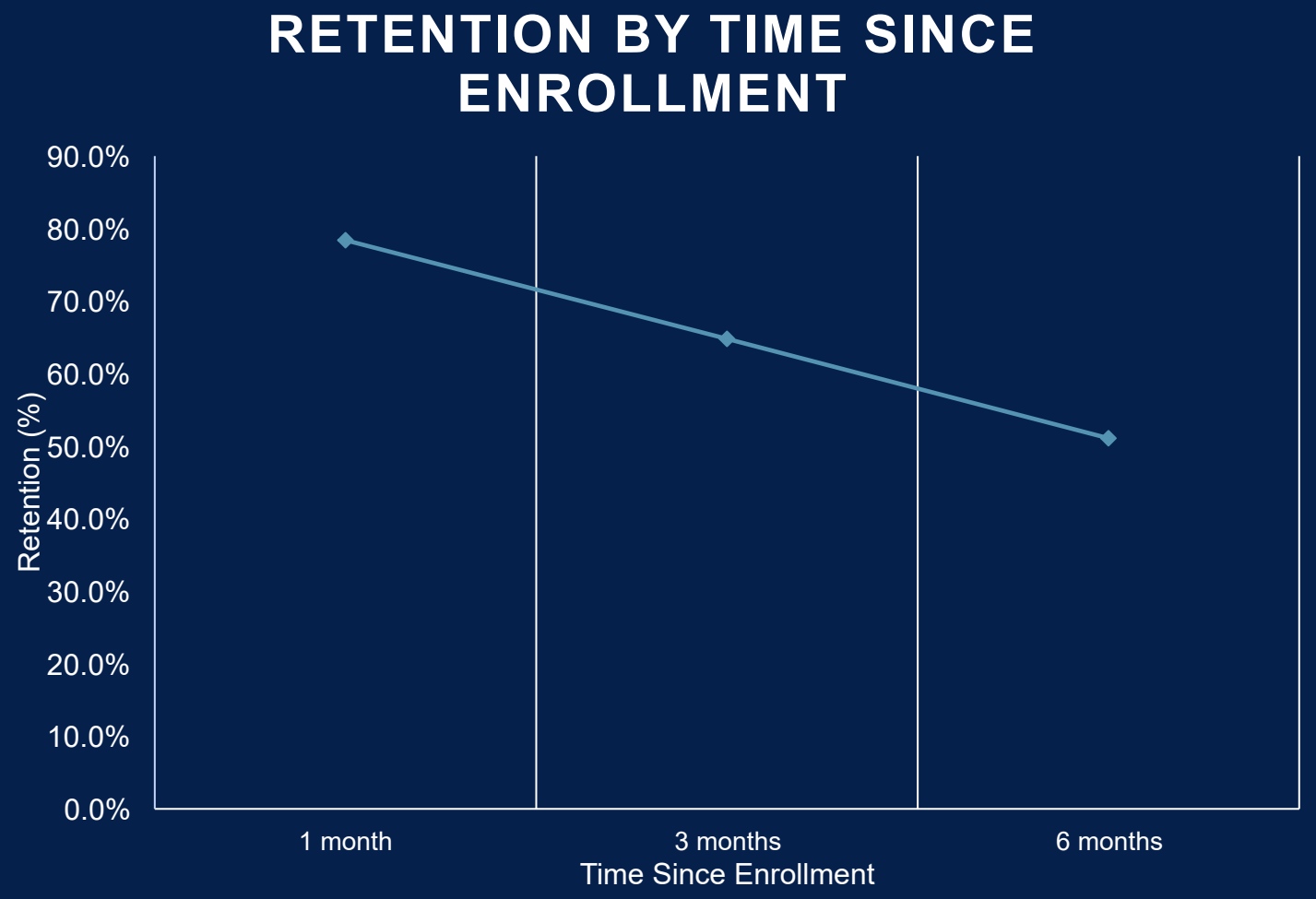
- Almost all clients are referred to Behavioral Health
- Over 30% have documented sessions in addition to the required substance use treatment counseling by FGC.
- Almost 50% of patients complete a primary care visit within four weeks of starting.
- Utilizing an integrated model of care delivery reduces barriers to receiving mental health care as hot-handoffs can occur at any point

Engagement with Behavioral Health		
N=260	Number of patients	Percent of Patients
Engaged in Behavioral Health	82	31.5%
Average number of sessions 2.3		
Range of sessions 1-7		
Engagement with Primary Care		
Primary care visit complete within 4 weeks of starting methadone	125	48.1%

Reflective of active patients as of February 10, 2023

Results: Engagement

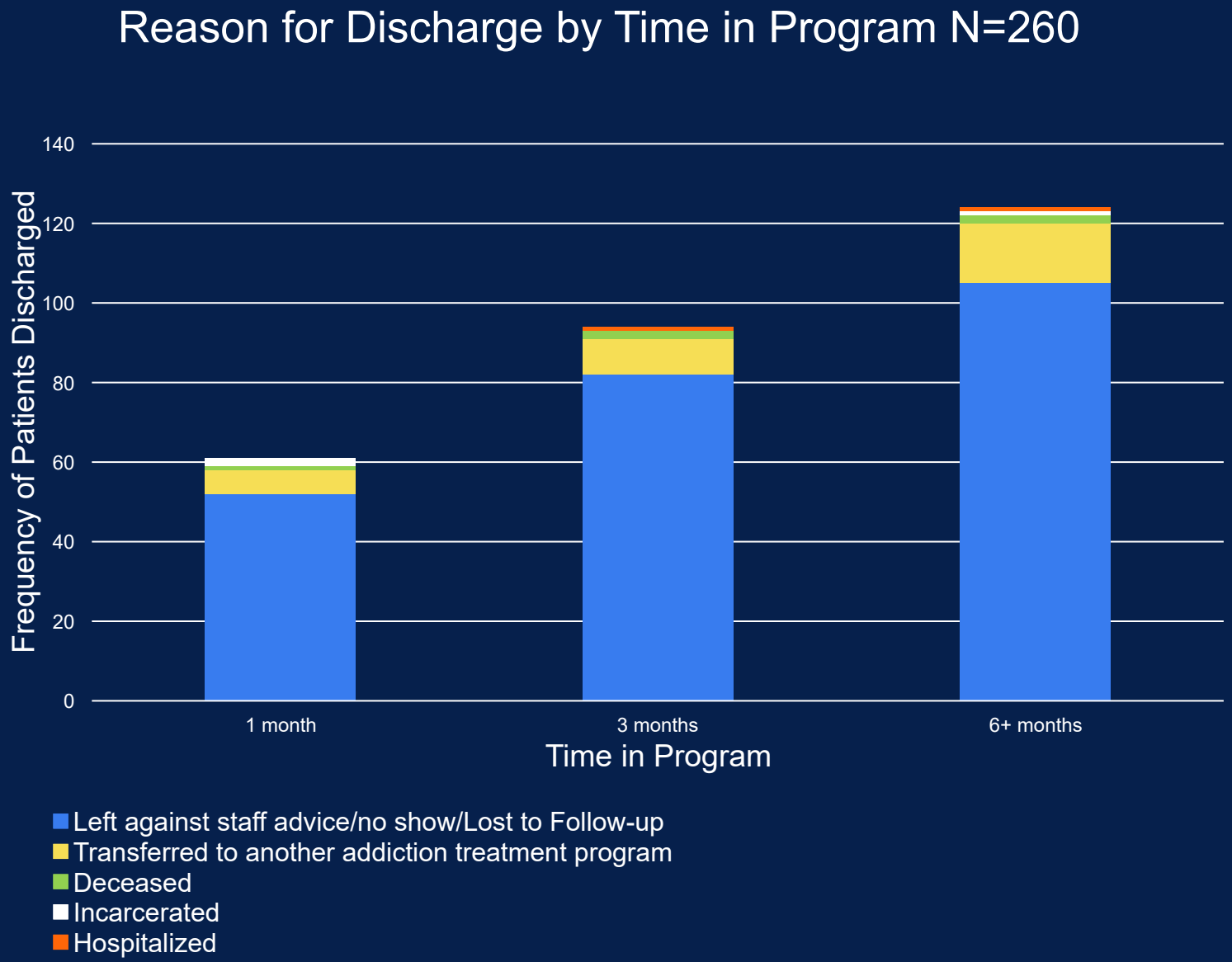
- 78% of eligible patients completed at least one month (n=241).
- 65% of eligible patients completed at least 3 months (n=233).
- 51% of eligible patients completed at least 6 months (n=215).



Reflective of active patients as of February 10, 2023

Results: Engagement

- Of those patients that were discharged, the majority was a result of being lost to follow-up.
- 12% were transferred to another MOUD program/FGC
- Patients may be duplicative due to readmissions, not unique patients



Reflective of active patients as of February 10, 2023

Sustainability Model Complex Patients: Medical and SDOH

67 y/o AA Male with PMHx of OUD, newly diagnosed rectal adenocarcinoma, unstable housing, requiring oncologic care including surgical and radiation treatment. Local OTP would not allow patient to receive prescribed short acting opioids from palliative for cancer pain and remain in their program. Patient was transferred to MSHC/FGC program, received curative oncological treatment, appropriate pain management, and continued methadone/OUD services.

Sustainability Model Complex Patients: Justice Involvement and SDOH

55 y/o AA Male patient with 20-year history of OUD, referral from Cook County Jail, the patient began MOUD treatment while incarcerated and transferred all care to MSHC at discharge.

He was maintained on a stable dose with no missed doses, completed follow-up and regular visits with primary care.

Patient was provided linkages to housing with actualized referral and is in stable housing.
Patient provided linkages to employment with actualized referral and is working full time.

Currently abstinent from opioids, completed all aspects of parole and remains in program on a therapeutic dose.

Complex Patients: Prenatal Care and SDOH

32 y/o White Female with an 8-year history of opioid use who presented as a walk-in following connection from a community partner (Night Ministry) for OUD treatment. Determined to be 16 weeks pregnant and unsheltered homeless.

Discussed options with patient and she was admitted to the Family Medicine/OB service for an observed methadone induction, discharged to a family recovery home.

Patient participated in prenatal care, had an uncomplicated delivery, mild NAS, and discharged to family recovery home with infant in her custody.

She remains illicit drug free, stable on current methadone dose, has full parental rights, and returns for regular post-partum care, preventive care, and infant returns for well-child visits.

Next Steps

- These results pertain to the first 24 months of program implementation and provide insight that can guide further development.
- Further analyze additional patient data not included in this report pertaining to methadone program and integrated OUD care impact on health outcomes.
- Continue evaluation of pre/post chronic disease management, screening, and preventive services to improve patients' whole health.
- Further evaluate the benefits and impact of co-located, co-managed partnerships for integrated continuity of patient care and access to care in disadvantaged populations with limited resources.
- Quality improvement initiatives with both the FGC and Mile Square team to improve retention in treatment and re-engagement.

Final Takeaways

- This collaborative model is a sustainable and effective method to incorporate methadone treatment into the primary care setting
- This co-location model allows for the care of medically complex patients that require a multi-specialty approach

References

Williams, A. R., Nunes, E. V., Bisaga, A., Pincus, H. A., Johnson, K. A., Campbell, A. N., ... & Olfson, M. (2018). Developing an opioid use disorder treatment cascade: a review of quality measures. *Journal of substance abuse treatment*, *91*, 57-68.

Substance Abuse and Mental Health Services Administration (2019). Use of medication-assisted treatment for opioid use disorder in criminal justice settings [HHS Publication No. PEP19-MATUSECJS].

Substance Abuse and Mental Health Services Administration (2020). Medications for opioid use disorder. Treatment improvement protocol (TIP) series 63. Publication No. PEP20-02-01-006.

Kreek, M. J., Borg, L., Ducat, E., & Ray, B. (2010). Pharmacotherapy in the Treatment of Addiction: Methadone. *Journal of addictive diseases*, *29*(2), 200.

Mattick, R. P., Breen, C., Kimber, J., & Davoli, M. (2009). Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence. *Cochrane database of systematic reviews*, (3).

Degenhardt, L., Randall, D., Hall, W., Law, M., Butler, T., & Burns, L. (2009). Mortality among clients of a state-wide opioid pharmacotherapy program over 20 years: risk factors and lives saved. *Drug and alcohol dependence*, *105*(1-2), 9-15.

Metzger, D. S., Woody, G. E., McLellan, A. T., O'Brien, C. P., Druley, P., Navaline, H., ... & Abrutyn, E. (1993). Human immunodeficiency virus seroconversion among intravenous drug users in-and out-of-treatment: an 18-month prospective follow-up. *Journal of acquired immune deficiency syndromes*, *6*, 1049-1049.

Ball, J. C., & Ross, A. (2012). *The effectiveness of methadone maintenance treatment: patients, programs, services, and outcome*. Springer Science & Business Media.

References

Sordo, L., Barrio, G., Bravo, M. J., Indave, B. I., Degenhardt, L., Wiessing, L., ... & Pastor-Barriuso, R. (2017). Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies. *bmj*, *357*.

Lippold, K. M., Jones, C. M., Olsen, E. O. M., & Giroir, B. P. (2019). Racial/ethnic and age group differences in opioid and synthetic opioid–involved overdose deaths among adults aged≥ 18 years in metropolitan areas—United States, 2015–2017. *Morbidity and Mortality Weekly Report*, *68*(43), 967.

Substance Abuse and Mental Health Services Administration (2020). The opioid crisis and the Black/African American population: An urgent issue. Publication no. PEP20-05-02-001.

Campbell, C. I., Weisner, C., LeResche, L., Ray, G. T., Saunders, K., Sullivan, M. D., ... & Von Korff, M. (2010). Age and gender trends in long-term opioid analgesic use for noncancer pain. *American journal of public health*, *100*(12), 2541-2547.

Chicago Department of Public Health. (2021, May 14). Chicago Opioid Update. Chicago Health Alert Network. Retrieved February 22, 2023, from https://www.chicagohan.org/alert-detail?p_p_id=hanalertdetailsweb&p_p_lifecycle=2&p_p_state=normal&p_p_mode=view&p_p_resource_id=download&p_p_cacheability=cacheLevelPage&_hanalertdetailsweb_attachmentId=45689207&_hanalertdetailsweb_alertId=46666118

Illinois Department of Public Health. (2021). Opioid Data Dashboard. Retrieved February 22, 2023, from https://idph.illinois.gov/OpioidDataDashboard/

Elitzer, J., & Tatar, M. (2017). Why health plans should go to the “MAT” in the fight against opioid addiction.

Jarvis, B. P., Holtyn, A. F., Subramaniam, S., Tompkins, D. A., Oga, E. A., Bigelow, G. E., & Silverman, K. (2018). Extended-release injectable naltrexone for opioid use disorder: a systematic review. Addiction, 113(7), 1188-1209.