BACKGROUND AND AIDS
A large treatment gap exists for people with opioid use disorder (OUD) who are receiving medications for opioid use disorder (MOUD) which are the most effective evidence-based treatments. Most people with OUD want to stop/reduce their use and are interested in MOUD. Many access services in harm reduction and other community-based organizations and have difficulty starting or engaging in care at treatment centers of primary care offices. We previously implemented and tested a low-barrier buprenorphine clinic at a Seattle syringe program service (SSP), utilizing a nurse care manager model, that was feasible with positive intermediate outcomes. This study adapts that model by adding care navigators and implementing it in multiple, diverse sites across WA State.

Our primary aim tests the impact of the intervention on morbidity and mortality outcomes. Other aims test if housing status modifies the impact of the intervention and the impact of the intervention on MOUD utilization.

CLINICAL INTERVENTION AND SETTINGS
The Community Based Medication-First (CBMF) Intervention is based upon rapid, typically same-day, access to medications; convenient, non-appointment based care; no exclusions for poly-substance use; no counseling mandated (but services readily available); and ongoing, easy to access care. The model is intended for people who may have barriers to appointment-based care, including those who are unshaded. Staffing for Community Based Medication-First (CBMF) was based upon project-funded care teams comprised of a nurse care manager and care navigators, as well as a prescriber’s time to oversee clinical activities.

All clinics began with drop-in, same-day visits (no appointment required) with workflows designed to provide same-day medication starts when medically appropriate and desired by clients. CBMF staff were often co-located at SSPs to facilitate linkage.

The study’s clinical intervention support team provided initial training and ongoing, twice-monthly and ad hoc technical assistance and clinical consultation for nurse care managers and care navigators. Clinical support was provided to prescribers in monthly calls. Site administrators met with the team twice monthly to discuss administrative, clinical, and research issues.

Clinical/Research Settings: The goal of this project is to provide care where people with OUD already receive other services and often have established trusting relationships with staff and volunteers. Settings included existing SSPs and other programs providing social and health services for marginalized and unhoused people. The six sites were purposely selected to represent different types of organizations and geographic variability.

Three of the sites were in Eastern Washington (Spokane, Walla Walla, Kennewick) and three in Western Washington (Tacoma, Seattle, Centralia).

METHODS
Study participants People with opioid use disorder, per clinician judgment, who were interested in starting on an FDA approved medication for OUD were eligible for the study. The study was: between the ages of 18-70 and willing to provide access to state records data. Potential participants were approached about study involvement after their initial CBMF service encounter. The clinical intervention was implemented, and study recruitment and enrollment began August 2019. The last month of participants beginning the 6-month clinical intervention was September 2021. 12 months of follow-up data from the start of the clinical intervention were utilized.

Study Design & Analyses: A prospective cohort study was conducted to test the impacts of the intervention on MOUD and care utilization. A synthetic comparison group analysis, based upon a statistically matched from WA State agency administrative data sources, was conducted to test the impact of the intervention on mortality. Descriptive statistics are presented. Pre-post comparison of rates of care utilization based on days supply of buprenorphine or months with an event was conducted with an unadjusted model regression, change score on health status. The all-cause mortality rate difference between the intervention and comparison group was tested in a logistic regression model accounting for propensity score weighting and included history variables used in estimating the propensity score as covariates, followed by marginal effects estimation to calculate an average risk ratio. In the first stage of creating a comparison group, members of the large de-identified comparison pool with an indication of OUD were assigned the treatment group member’s start date and matched on key broad indicators of OUD history. In the second stage, propensity score matching was implemented with more fine-grained history variables to match and balance the samples.

RESULTS
Characteristics of clients served and analytic sub-groups
1,325 people received the CMBF clinic intervention service. 825 people enrolled in the study and 813 were matched to state record. CBMF service recipients were similar in age and gender as those enrolled in the study and those with complete Medicaid data (Table 1). Those with complete Medicaid eligibility were similar to all enrolled in the CBMF study except those who had higher rates for care measures. Those with complete eligibility for Medicaid had lower rates of arrest, likely due in part losing Medicaid eligibility and incarcerated. Those with complete Medicaid data had a somewhat smaller proportion who were unshadable. All clinics began with drop-in, same-day visits (no appointment required) with workflows designed to provide same-day medication starts when medically appropriate and desired by clients. CBMF staff were often co-located at SSPs to facilitate linkage.

Emergency Department and Inpatient Hospital Utilization
Both Months with ED non poisoning visit and Months with ED poisoning visit did not change significantly. Months with any OUD medication and Months with any buprenorphine supply increased significantly with an inpatient stay increased significantly.

• Days supply of buprenorphine, Months with any OUD medication, and Months with any buprenorphine days supply and increased significantly from a mean of 81.5 days and 136.5 days (p<0.05). (data not shown)

Mortality analyses
Using a different analytic approach for mortality analyses, we used a matched comparison group drawn from state records data. For the matched comparison analyses, intervention participants were included if they had an indication of a history of OUD based upon the presence of an OUD or opioid poisoning diagnosis and/or a Noted as Medicaid eligible in all 12 months before and after the start month. Experience an annual mortality rate of 6% for those with opioid use disorder.

• Among those who had any buprenorphine in the pre-period (n=243) the change in buprenorphine days supply and increased significantly from a mean of 81.5 days to 136.5 days (p<0.05). (data not shown)

Impact of CBMF on medications for OUD and health care utilization
Care utilization outcomes were analyzed restricted analyses to those with complete Medicaid eligibility in the 12 months prior to and following receiving CBMF. Table 2 compares the year before and after starting CBMF.

Impact of CBMF on medications for OUD and health care utilization

This finding indicates a statistically and clinically significant increase in medications for OUD after receiving CBMF and a significant decrease in mortality relative to the comparison group. Our goal was to provide services to housing insecure people and 40% of participants studied were housing insecure and unhoused participants also had a substantial and statistically significant increase in time on medications. We did not see a change in ED poisoning visits, but it is important to note that the rate of these recorded visits is very low and that previous research indicates that many people who have an overdose do not seek medical care. Not seeking care for an overdose was perhaps even more likely given the high rates of naloxone availability in the community (approximately 80% per local SSP surveys) and the reluctance of people to go to the ED during COVID. Conversely, there was a significant increase in inpatient hospitalizations which does not align with ED poisoning findings and may be related to care utilization for COVID.

Limitations We know that SARS-CoV-2 precautions severely limited clinical visit time which decreased study enrollment opportunities. Many sites needed to switch from drop-in to appointment based care in the initial and ongoing care, potentially decreasing ongoing service utilization and study enrollment.

In preparing for this study we estimated an annual mortality rate of 6% for those with opioid use disorder seen for care in the ED, based on a Seattle study as well as very similar findings in Massachusetts. In this study the matched comparison, which had an extensive history of medication use for OUD, had a lower mortality rate than we anticipated, and yet the intervention group still had a significantly reduced mortality rate.