



Bringing Oral Health Home

*An Implementation Evaluation of Heartland Alliance Health's
Shelter-Based Oral Health Outreach Program*

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Report Information

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Acknowledgments

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Extended Uses

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Glossary

Implementation Framework – The evaluation of the Oral Health Service was modeled using the World Health Organization (WHO) guide on Implementation Research in Health¹. The goal of implementation research is to understand how an intervention or service was put into practice, and its potential to grow capacity and maintain sustainability.

Outreach sites/partners – In response to the COVID-19 crisis, Heartland Alliance Health (HAH) aligned with multiple residential sites serving people experiencing homelessness and people with substance use disorders to expand access to oral health services for their residents through site-based outreach. In this report, these locations are referred to as “outreach sites” and “outreach partners”.

Medicaid Reimbursement Rates: In the US, states reimburse providers at varying rates to cover the cost of health services for individuals with Medicaid health insurance. Medicaid Reimbursement Rates are the standard levels at which a state provides these re-payments.

Integration of care: To address multiple dimensions of health in a coordinated way, health care providers may create a system of services and referrals called the integration of care. This process connects people to additional services in a streamlined manner. For example, at a primary care check-up, an individual may be provided information regarding services for their oral health and/or mental health in addition to their primary care support.

Social Determinants of Health (SDOH): According to the WHO, social determinants of health (SDOH) are “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life.”² These factors are non-medical, yet they influence health-related decisions and outcomes. Examples of these forces are government policy and systems, built environment and neighborhood conditions, culture, societal attitudes, and access to education, employment, and healthcare.

Executive summary

Background

In response to the COVID-19 crisis, Heartland Alliance Health (HAH) aligned with multiple residential sites serving people experiencing homelessness and people with substance use disorders to expand access to oral health services for their residents through site-based outreach. These sites (referred to in this report as “outreach partners”) include:

- **Haymarket Center**, “the largest not-for-profit community-based adult detoxification, residential, and outpatient substance use treatment facility in Chicago”³ (120 N. Sangamon St.), and
- **Matthew House** is “a nonprofit community-based organization...that provide[s] food, daytime shelter, permanent supportive housing, and supportive services to men, women, families, and children who are experiencing or at risk of becoming homeless”⁴ (3728 S. Indiana Ave.).

Participants served by the outreach partners are at higher risk of oral health complications, such as cavities, tooth pain, tooth loss, and oral cancers. People of color, people experiencing homelessness, and people with substance use disorders experience oral health complications at disproportionate rates.

Oral Health Service

The HAH Shelter-Based Oral Health pilot program aims to improve the oral health of individuals experiencing homelessness and increase access to oral health services and other services addressing social determinants of health. The pilot program aims to do this by establishing stronger partnerships with residential sites and providing on-site dental services. The long-term goals of the program are to increase knowledge for medical providers to successfully implement and deliver on-site oral health care and continue developing strategic alignment between Heartland Alliance Health and residential sites.

Study purpose

Recognizing the importance of program implementation in effective service delivery, the evaluation of the Oral Health Service followed the World Health Organization’s Implementation Framework. To understand how the service was operationalized, the outcome variables of acceptability, adoption, appropriateness, feasibility, fidelity, coverage and sustainability were assessed⁵. Research questions were developed within each of the overarching outcome variables, sourced from relevant literature and the HAH Oral Health Logic Model (Appendix A). The logic model was co-developed by the research team, HAH Oral Health staff, and outreach partner staff. Specifically, the research questions for this report focus on the implementation of the Oral Health Service based on identified short- and mid- term outcomes.

Methodology

Program data

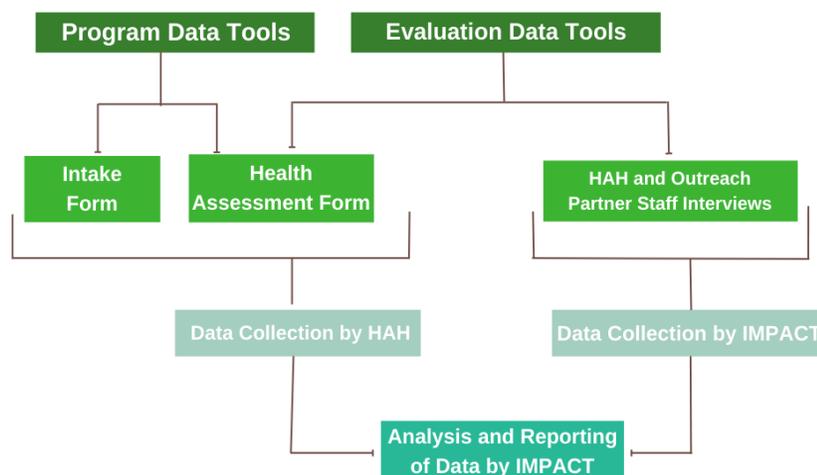
The research team analyzed de-identified participant data in order to understand the impact of the Oral Health Service. Figure 1 describes the data collection and analysis workflow. The intake form and health assessment tool captured participant demographics, dental treatment information, and self-reported responses to questions about social determinants of health (SDOH) needs (see Appendices B and C). The tools were developed in partnership with the Oral Health and research teams, using validated assessments and existing resources as a guide^{6,7,8}. SDOH questions asked participants about their insurance, current and future housing status, transportation, mental health, substance use, and access to care. The research team analyzed participant characteristics and the relationship between SDOH factors and oral health services.

Interviews

In order to understand the implementation and impact of the Oral Health Service from the perspective of stakeholders, the research team conducted semi-structured interviews. Interviews were also used to contextualize quantitative participant data. Five total interviews were completed, three with HAH staff (including one dentist), and two with outreach partners. Interview questions asked staff for their perspective on the services implemented, how services affected participant outcomes, and how they impacted the HAH-Shelter partnerships. Staff were also asked to share their ideas for increasing program capacity, improving participant access/engagement, addressing SDOH needs, as well as their general recommendations.

After interviews were completed, the research team used framework analysis to summarize and interpret data and identify themes across staff responses. After coding and discussion of initial interview data, a working analytical framework was developed by the research team and applied to all transcripts. A framework matrix was then developed, followed by the creation of thematic memos where themes were explored and discussed. The themes that emerged in these memos informed the qualitative findings of this report.

Figure 1: HAH Shelter-Based Oral Health Service Data Collection and Analysis

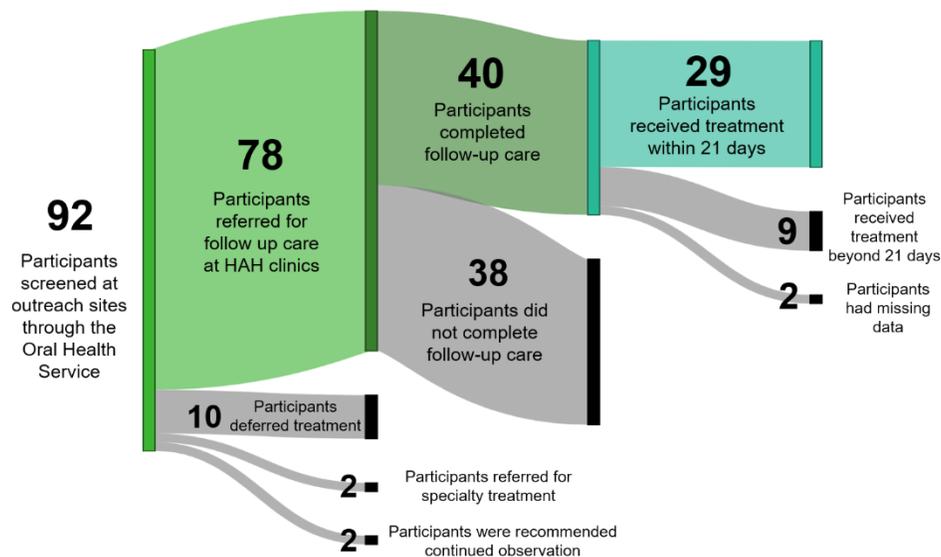


Key findings

Adoption

1. **Onsite outreach services and an integrated system of care have allowed the Oral Health Service to increase its capacity to provide dental services to individuals experiencing homelessness.** Figure 2 depicts the treatment outcomes of the Oral Health Service during the study period. Between May 2021 and December 2021, the Oral Health Service provided on-site screenings to 92 participants at Haymarket Center (89%) and Matthew House (11%). A total of 40 treatments were completed.

Figure 2: May-December 2021 HAH Oral Health Treatment Outcomes



From the staff perspective, the ability to bring portable dental health equipment onsite at outreach shelters has increased the capacity to provide services to individuals experiencing homelessness. Integration of oral health and primary care services at shelter sites increased capacity by creating a “**system of care**” for participants. Collaboration between primary care and dental care at shelter sites allowed for increased communication about participant needs and coordination of urgent care treatment.

- a. **Increased staff and staff availability, time at outreach sites, and resources to support participants are needed to continue to increase the capacity of the Oral Health Service.** Staff described the need for increased availability and time to provide services because of the high demand. In addition to increasing the number and availability of providers, proposed ways to enhance the capacity of the Oral Health Service included creating additional dedicated spaces at outreach sites and having the resources to provide financial assistance to participants.
- b. **Most participants were experiencing tooth pain at the time of treatment, and the most common procedure for participants with pain were tooth extractions.** Eighty-four percent of participants who completed the health assessment were experiencing tooth pain at the time they received services, most of whom were in pain for 2 weeks – 3 months.

Fidelity

2. **The target average of 21 days between when participants were screened for services at outreach sites and were seen at HAH clinics was met.** The average length of time was 16.74 days.
3. **Of the 92 participants screened for services, 85% were referred for follow-up care at HAH clinics (n=78).**
4. **The target goal of 80% of referred participants following up for care at HAH clinics was not met.** About half of the participants completed follow-up appointments at HAH clinics (49%, n=38), two participants were awaiting treatment (14%, n=2), and 45% did not complete follow-up appointments (n=35).
5. **Consistent participant engagement in outreach services, communication from HAH staff, and quick appointment turnaround were facilitators to timely follow-up care.** The ability to refer participants to a HAH clinic that fits their needs increased engagement in follow-up care. Participants referred to the Uptown and James West clinics were more likely to complete follow-up treatment within 21 days than participants referred to the Englewood clinic. In addition, HAH staff repeatedly communicated with participants to promote follow-up care. Finally, the data suggest that scheduling appointments with a shorter turnaround period may increase rates of follow-up care.
6. **Staffing limitations and scheduling challenges were barriers to providing timely follow-up care to participants.** Due to limited staffing, providers are only able to see participants one to two days a week at clinics. Clinic staff described this limitation as a challenge to completing follow-up care. Additional challenges to follow-up care for this population were around other priorities and financial barriers.

Acceptability

7. **The Oral Health Service brought services to participants and allowed them to take care of their health in a way that they may not have been able to do before.** Of the participants who completed the health assessment, only 22% had seen a dental provider within the previous year (n=15). This is almost three times lower than the national average for adults at 63%⁹. In addition, all but one participant described dental services as being very important (81%, n=55) or somewhat important (18%, n=12) to them.
8. **Bringing oral health services directly to outreach sites has built respect and trust between HAH and participants, increasing engagement in dental activities.** Staff shared that connecting participants through the HAH system of care and the increased consistency of services made it easier to get participants seen for oral health needs.
9. **Concerns around trust, cost, insurance, and other challenges of homelessness were barriers to engagement in dental activities for participants. Scheduling appointments for participants was sometimes a challenge for outreach staff.** Additionally, staff described a lack of healthcare literacy, lack of an address, and other conditions related to social determinants of health that posed challenges for engagement in care and building consistency.
10. **In order to increase engagement in services, staff suggested increasing the consistency of contact points at outreach sites and hiring additional staff to provide systems navigation and oral health education for participants.**

11. **Providing dental screening services at outreach sites where participants already receive other care increased access to oral health services by reducing transportation.** Participants were asked to select from a list of reasons why they were unable to access dental services. Many participants indicated that they did not know where to go (29%, n=9) or they had no transportation (29%, n=9). By providing dental screening services at outreach sites, the Oral Health Service may have reduced these barriers and improved participant access. The service also improved access by directly setting participants up with follow-up appointments at HAH clinics.
12. **The reduction of travel for participants and knowledge of where to obtain oral health care increased access to these services.** The act of providing services on-site helped develop a relationship between HAH and participants, which increased participant willingness to access services.
13. **Lack of medical and dental insurance, lack of prior engagement in care, concerns about the cost of services, and anxiety about visiting the dentist were found to be barriers to accessing regular dental care.** Results from chi-square tests of independence found that participants with medical and/or dental insurance were more likely to report access to regular dental services than participants without insurance. Those who reported experiencing anxiety about going to the dentist were less likely to report regular access to dental services. Analysis of program data found that participants between 18-40 years old were less likely to report regular access to dental services compared to those 41 years and older.

Coverage

14. **The HAH benefits team supports referrals for participant needs that come up during conversations with providers as well as reported on the health assessment form. The team makes referrals for housing, insurance, social security assistance, transportation, and mental health services.**
15. **Limited time prevents formalized screenings of social determinants of health and relies on conversations between providers and participants to determine referral needs.** The Oral Health Service currently uses a health assessment form to collect information about SDOH, but strategies about how to act on this data are still being developed.

Sustainability

16. **Through collaboration and clear communication, relationships between outreach sites and HAH were strengthened by the Oral Health program.** One example of strengthened relationships has been working together to minimize the number of no-shows for appointments with Haymarket staff. At Matthew House, strengthened relationships came from examples where outreach staff felt the commitment of HAH staff to the participants and their needs.
17. **A shared understanding of and commitment to participants as well the mutual credibility the service provides has helped to strengthen the relationships between outreach sites and HAH.**

18. **Challenges related to limited availability and capacity of the service as well inconsistencies of care provided by HAH harmed the relationships between outreach sites and HAH.** Increased staffing and consistency of the Oral Health Service will improve relationships with partner staff. At Matthew House, a historic lack of consistent commitment to outreach services was a barrier to trust. As the Oral Health Service has been implemented, relationships with outreach partner staff and HAH have improved.
19. **Staff suggested that providers take a trauma-informed approach to care and ask participants about their frequency of medical care, the services they may be interested in, and the challenges they may face in maintaining care in order to better support their overall health.**

Recommendations

1. Funders should increase support for Oral Health Services for people experiencing homelessness.
2. HAH should strive to increase consistency in the delivery of its outreach services.
3. HAH should aim to simplify the scheduling process.
4. HAH should consider involving additional types of staff to increase engagement and the breadth of services available.
5. HAH should explore ways to improve its processes for screening for and addressing social determinants of health.
6. HAH should consider ways to conduct oral health outreach to younger people experiencing homelessness.
7. HAH and researchers should explore ways to reduce dental anxiety.

Introduction and Background

In response to the COVID-19 crisis, Heartland Alliance Health (HAH) aligned with multiple residential sites serving people experiencing homelessness and people with substance use disorders in order to expand access to oral health services for their residents through site-based outreach. These sites (referred to in this report as “outreach partners”) include:

- **Haymarket Center**, “the largest not-for-profit community-based adult detoxification, residential, and outpatient substance use treatment facility in Chicago”¹⁰ (120 N. Sangamon St.), and
- **Matthew House** is “a nonprofit community-based organization...that provide[s] food, daytime shelter, permanent supportive housing, and supportive services to men, women, families, and children who are experiencing or at risk of becoming homeless”¹¹ (3728 S. Indiana Ave.).

Pandemic-related changes in clinical practices resulted in reduced numbers of individuals at HAH’s clinics, necessitating a way to provide care to patients using innovative methods. The majority of participants served by these outreach partners are considered high risk for severe COVID-19 symptoms and are reluctant to seek and utilize dental services due to heightened concern of contracting the virus.

In addition, participants served by outreach partners are at higher risk of oral health complications. Alcohol, tobacco, and drug use are major risk factors for oral cancer and other oral diseases.^{12,13} Tooth loss and oral pain are commonly found among people experiencing homelessness, especially older people.¹⁴ Transience, low or no incomes, lack of health insurance coverage, and lack of oral health providers in low-income communities also raise barriers to consistent oral health access.^{15,16} While low-income people are eligible for dental coverage under Medicaid, not all low-income people are on Medicaid, and a limited number of dental providers accept Medicaid.¹⁷ Low Medicaid reimbursement rates are one reason for the low prevalence of Medicaid-covered dentists; despite recent increases to Medicaid dental reimbursement rates in Illinois,¹⁸ Illinois continues to have some of the lowest rates in the country.¹⁹ Patterns of poverty and disparities in other social determinants that affect oral health (such as access to adequate nutrition or transportation to get to dental appointments) are highly divided along racial/ethnic lines,²⁰ meaning that disparities in oral health access and outcomes have racial equity implications—especially in a highly segregated city like Chicago. Indeed, compared to white people, people of color are more likely to have untreated cavities, severe gum disease, and lower survival rates from oral cancer.²¹ These critical oral health needs for people experiencing homelessness, people with substance use disorder, and people of color—populations with substantial overlap in Chicago—point to an urgent need for innovative ways for bringing oral health services to underserved communities.

The HAH Shelter-Based Oral Health pilot program aims to improve the oral health of individuals experiencing homelessness and increase access to oral health services and other services addressing social determinants of health. The pilot program aims to do this by establishing stronger partnerships with residential sites and providing on-site dental services. The long-term goals of the program are to increase knowledge for medical providers to successfully implement

and deliver on-site oral health care and continue developing strategic alignment between Heartland Alliance Health and residential sites (see Appendix A for logic model).

Beginning in October 2020, the dental outreach team, with the help of outreach partner staff, scheduled screening appointments and completed assessments during emergency dental exams to address emergent dental needs at housing/outreach sites (Appendix D). Information from the exams and assessments was shared asynchronously with HAH clinic providers onsite. Data was also collected using portable dental equipment (handheld X-ray unit, portable chair, and intraoral cameras) and examinations were completed on-site by providers at the main HAH clinic and individuals providing services at outreach sites.

Research Questions and Study Purpose

Recognizing the importance of program implementation in effective service delivery, the evaluation of the Oral Health service followed the World Health Organization’s Implementation Framework. To understand how the service was operationalized, the outcome variables of acceptability, adoption, appropriateness, feasibility, fidelity, coverage and sustainability were assessed²². Research questions were developed within each of the overarching outcome variables, sourced from relevant literature and the HAH Oral Health Logic Model (Appendix A). The logic model was co-developed by the research team, HAH Oral Health staff, and outreach partner staff. Specifically, the research questions for this report focus on the implementation of the Oral Health Service based on identified short- and mid- term outcomes. In order to specifically measure implementation, the scope of our study for this period focused on the following outcomes:

Table 1: Oral Health Service Outcomes and Evaluation Questions

Type	Outcome	Evaluation Questions
SHORT	1a. Increased capacity to provide oral health services to individuals experiencing homelessness	- In what ways did the Oral Health program increase its capacity to provide oral health services to individuals experiencing homelessness? - How can the Oral Health program continue to increase its capacity to provide oral health services to individuals experiencing homelessness?
	1b. Providing relief to immediate sources of pain related to oral health for participants	-What kind of procedures were performed by the oral health team to help participants with pain?
	1c. Timely follow-up care at established HAH clinics	-What was the average length of time between when participants were screened for services and followed up at HAH clinics? -How many participants <i>were referred</i> for follow-up care at established HAH clinics? -How many participants <i>followed up</i> at established HAH clinics? -What were facilitators for timely follow-up care? -What were barriers to timely follow-up care?
	1d. Increased engagement (measured as utilization of dental services) in dental activities for participants including general oral health	-In what ways did the oral health program increase engagement in dental activities for participants? -What were the factors that helped increase engagement in dental activities for participants? -How can the Oral Health program continue to increase engagement in dental services for participants?

MID	2a. Increased access to Oral Health services for individuals experiencing homelessness	<ul style="list-style-type: none"> -In what ways did the Oral Health program increase access to oral health services for individuals experiencing homelessness? -What were the facilitators to accessing oral health services for individuals experiencing homelessness? -What were barriers to accessing oral health services for individuals experiencing homelessness?
	2b. Strong partnership with shelter sites	<ul style="list-style-type: none"> -What are some ways in which partnerships with shelter sites were strengthened or weakened through the Oral Health program? -What were the facilitators to strengthening relationships with shelter sites? -What factors inhibited the ability to strengthen relationships with shelter sites?
	2c. Increased access to other services offered by HAH (to address social determinants of health of participants)	<ul style="list-style-type: none"> -What other services offered by HAH were offered to participants? -How many participants <i>were referred</i> for follow-up care at established HAH clinics? -How many participants <i>followed up</i> at established HAH clinics? -What is the existing infrastructure for Oral Health outreach that provides referrals to other social services? -What were facilitators to accessing other services offered by HAH to participants? -What were barriers to accessing other services by HAH participants? -What indicators determine whether an individual has social determinant needs? How are referrals determined? -From an oral health standpoint, what are questions providers should ask in order to evaluate social needs?

Methods

Quantitative Methods

Program Data

The research team was provided de-identified participant data by HAH staff in order to understand the impact of the Oral Health Service. The intake and health assessment forms captured participant demographics, dental treatment information, and self-reported responses to questions about social determinants of health (SDOH) needs (see Appendices B and C). The forms were developed in partnership with the Oral Health and research teams. SDOH questions asked participants about their insurance, current and future housing status, transportation, mental health, substance use, and access to care.

HAH staff generated unique participant IDs that allowed the research team to connect data from the intake form to the health assessment while protecting participant identity. The research team analyzed participant characteristics and the relationship between SDOH factors and oral health services. The relationship between access to care and SDOH variables were assessed using a chi-square test of independence. A chi-square test of independence was also used to determine factors related to timely follow-up care for participants. A two-sample t-test was conducted in order to determine if there was a significant difference in the average number of days between referral and scheduled appointment dates between participants who completed follow-up within the target goal of 21 days and participants who did not complete follow-up treatment within this time frame.

Qualitative Methods

Interviews

In order to understand the implementation and impact of the Oral Health Service from the perspective of stakeholders, the research team conducted semi-structured interviews. Interviews were also used to contextualize quantitative participant data. Five total interviews were completed, three with HAH staff (including one dentist), and two with outreach partners. Interview questions asked staff for their perspective on the services implemented, how services affected participant outcomes, and how they impacted the HAH-Shelter partnerships. Staff were also asked to share their ideas for increasing program capacity, improving participant access/engagement, addressing SDOH needs, as well as their general recommendations.

After interviews were completed, the research team used framework analysis to summarize and interpret data and pull-out themes across staff responses²³. The coding of transcripts followed a broadly deductive approach, with root codes primarily generated using the implementation science framework²⁴. Two researchers independently coded each interview and reviewed codes for consistency. Secondary codes generally distinguished if staff had positive/neutral/adverse experiences or viewed a factor as having a positive/neutral/negative impact. After coding and discussion of initial interview data, a working analytical framework was developed by the research team and applied to all transcripts. A framework matrix was then developed, consisting of one row per participant and two columns per code, one for a summary of the data and one for direct quotes. Interpretation of the framework matrix resulted in the creation of thematic memos

where themes were explored and discussed. The themes that emerged in these memos informed the qualitative findings of this report.

Limitations

This evaluation is limited by several factors related to data quality and collection. Challenges posed by the COVID-19 pandemic prevented the implementation of participant satisfaction surveys and interviews to be completed as planned, therefore missing valuable participant voice. As such, the assessments of the program's successes and challenges outlined in this report are only from the HAH staff and outreach partner perspective. Due to the transient nature of the population and the delivery of the service, no pre/post assessment was completed, thereby eliminating the ability to assess participant-level change over time. Therefore, the results of the analysis presented below only demonstrate a significant association between variables within the participant sample. Additionally, limited data were collected regarding whether referrals to other HA services were made, causing the research team to be unable to report on this data point. Moreover, only 74% (n=68) of participants completed the health assessment due to staff/timing limitations or participant decision to decline. Program implementation at the second outreach site, Matthew House, was slower than expected due to staffing challenges and COVID-19. Therefore, only 10 participants were served at Matthew House during the period of evaluation, none of whom completed the health assessment. Due to these factors, the variation between participants across outreach sites is not possible to evaluate.

Findings

Participant Demographics and Self-Reported Health

Most participants who completed the health assessment identified as male (71%, n=48), and all participants identified as cisgender (100%, n=68). More than half of the participants were between 41-64 years old (56%, n=38), and 38% were between 25-40 (n=26). Most participants identified as Black (47%, n=32) or White (37%, n=25). Twelve percent of participants identified as Hispanic/Latino (n=8). Smaller numbers of participants identified as Asian, Pacific Islander, or another racial/ethnic identity that was not described.

Over half of the participants (54%, n=37) reported experiencing a mental health condition such as anxiety or depression, and 41% reported taking medication for a mental health condition (n=28). Most participants reported smoking often (52%, n=35) or smoking occasionally (34%, n=23). A majority of participants reported that they were not currently using alcohol or drugs (91%, n=62) and that they were not interested in treatment for mental health or substance abuse at HAH (68%, n=46). This is likely related to the role that Haymarket Center has in providing substance treatment for participants. Many participants were interested in receiving continued dental care at HAH (84%, n=57).

Healthcare Access

Most participants reported that they had medical insurance through Medicaid or Medicare (78%, n=53). However, less than half (48%) reported that they had a medical provider (n=31). Additionally, only 58% of participants reported dental insurance through Medicaid or Medicare (n=40). Over half of the participants reported that they had no regular access to dental services (51%, n=35). When asked about their last visit, 43% reported that they had not been to a dentist in over 3 years (n=29), and only 22% had been seen in the last year (n=15). For a majority of participants, tooth pain was the reason for their last dental visit (61%, n=41).

Adoption

- a. In what ways did the Oral Health program increase its capacity to provide oral health services to individuals experiencing homelessness?

Onsite outreach services and an integrated system of care have allowed the Oral Health Service to increase its capacity to provide dental services to individuals experiencing homelessness. Between May 2021 and December 2021, the Oral Health Service provided on-site screenings to 92 participants at Haymarket Center (89%) and Matthew House (11%) (see Figure 2). A total of 40 treatments were completed, 38 of which occurred at follow-up appointments. The majority of completed treatments were tooth extractions (68%), followed by fillings/restorative procedures (15%), further exams/x-rays (10%), and other dental services (8%). While data limitations prevented the research team from being able to quantitatively illustrate an increase in capacity (see “limitations” section), staff provided insight into how the service has grown to deliver enhanced dental care to individuals experiencing homelessness.

From the staff perspective, the ability to bring portable dental health equipment onsite at outreach sites increased the capacity to provide services to individuals experiencing homelessness. One outreach staff described the relevance of bringing dental services to their substance-use treatment site population in particular. She noted that before they were able to access onsite dental services, they were utilizing walk-in services at the HAH Clinic in Uptown, which is located about 7 miles away from the outreach site. A HAH staff member shared that bringing dental health services to this site has supported participants in the substance-use treatment program because it allows them to remain on-site for their dental screening. Throughout the implementation of the service, outreach partners shared that the dental team has also **“enhanced their capacity to do more procedure-based [services]”** during outreach visits (OP1). Additionally, the dental team hired an additional dental provider in order to increase the ability to provide services to participants and complete timely follow-up care.

Integration of oral health and primary care services at outreach sites increased capacity by creating a **“system of care”** for participants (OP1). Staff described this integration as two-fold, increasing the capacity to provide dental services while also building relationships between participants and HAH. Collaboration between primary care and dental care at outreach sites has allowed for communication about participant needs and coordination of urgent care treatment. As one outreach partner described it, when **“people are coming in for a physical, they can identify a bunch of needs and those referral processes can start to take off just from that visit”** (OP1).

- b. How can the Oral Health program continue to increase its capacity to provide oral health services to individuals experiencing homelessness?

Increased staff and availability, time at outreach sites, and resources to support participants are needed to continue to increase the capacity of the Oral Health Service.

Staff described the need for increased availability and time to provide services because of the high demand. **“It just comes down to really being more available and having more staff for not only the turn-around on referrals, but also just engaging with the organizations too”** (D1). Others noted that increasing the number of providers would allow them to **“see more patients at our clinics”** (HAH2) and that having dental staff **“being more available could be really helpful”** (OP1). A HAH staff member said that if funding were not limited, they would want **“someone on-site every day of the week and a dedicated dental suite built out for them to be able to complete everything in the same visit,”** (HAH1).

In addition to increasing the number and availability of providers, proposed ways to enhance the capacity of the Oral Health service included creating more dedicated space at outreach sites and having the resources to provide financial assistance to participants. **“I wish we had the resources because we [are] working with a lot of patients who have no money or little income”** (HAH2). One staff described the cost of certain procedures as hurtful to patients and said that it causes participants to decide between paying for a procedure or losing the tooth entirely. Reducing the cost of these procedures may alleviate some of the financial burdens for individuals needing treatment.

- c. What kind of procedures were performed by the oral health team to help participants with pain?

Most participants were experiencing tooth pain at the time of treatment, and the most common procedure for participants with pain were tooth extractions. Of the total served, only 68 participants (74%) completed the Health Assessment due to time limitations and participant decision to decline. Of those that completed the assessment, 84% were experiencing tooth pain at the time they received services (n=57). Many participants had been in pain for two weeks (38%, n=26) or 2-3 months (24%, n=16). Some participants had experienced tooth pain for 3-6 months (16%, n=11), or greater than 6 months (13%, n=9). The majority of procedures completed for participants with tooth pain were tooth extractions (72%, n=23), followed by filling/restorative procedures (16%, n=5), further exams/X-rays (6%, n=5), or other dental services (6%, n=2).

Fidelity

- d. What was the average length of time between when participants were screened for services and were followed up at HAH clinics? Was the target average of 21 days between referral and intake met?

The target average of 21 days between referral and intake was met. The average length of time between when participants were screened for services at outreach sites and were seen at HAH clinics was 16.74 days.

- e. How many participants were referred for follow-up care at established HAH clinics?

Of the 92 participants screened for services, 85% were referred for follow-up care at HAH clinics (n=78). Participants were referred to the James West (42%, n=33), Englewood (40%, n=31), and Uptown (18%, n=14) HAH clinics.

- f. How many participants followed up at established HAH clinics? Was the target goal of 80% of referrals following up for care at HAH met?

The target goal of 80% of referred participants following up for care at HAH clinics was not met. About half of the participants completed follow-up appointments at HAH clinics (49%, n=38), two participants were awaiting treatment (14%, n=2), and 45% did not complete follow-up appointments (n=35).

- g. What were the facilitators for timely follow-up care?

Consistent participant engagement in outreach services, communication from HAH staff, and quick appointment turnaround were facilitators to timely follow-up care. From the perspective of staff, communication with participants and consistent involvement in services improve the likelihood of follow-up care. For example, a dental provider noted, **“if we have somebody who's staying engaged at Haymarket and they're here for a long period of time and going through the program, we tend to have more success with those individuals”** (D1). A chi-square test of independence found significant association between referred clinic location and completion of treatment within 21 days [$\chi^2 (2, N = 78) = 7.3, p < .05$, Table 2].

Participants referred to the Uptown and James West clinics were more likely to complete follow-up treatment within 21 days than participants referred to the Englewood clinic. One factor that may contribute to the higher follow-up completion at James West, is the fact that Haymarket is co-located with the James West clinic. Staff also described that participant engagement in the HAH system of care promoted engagement in follow-up care. **“So, the dental services are here, and because they are here and they've seen the doctor here, they're more apt to go over there for follow-up with continuation of their services as a result”** (OP2). The ability to refer participants to a HAH clinic that fits their needs was viewed as increasing engagement in follow-up care.

HAH staff repeatedly communicated with participants to promote follow-up care. When participants provide addresses, the HAH clinics send reminders and copies of referrals to promote contact and follow-up. An outreach partner described an example of these efforts when a participant who needed dental care did not follow up at his scheduled appointment. **“He [the provider] called and followed up to say hey, if you see this guy and make sure he goes to the dentist ‘cause that guy has some type of infection,”** (OP2). Knowing that the outreach partners would be more likely to see the participant, the provider wanted to make sure that the outreach partner **“knew that this person should seek medical attention,”** and got the urgent care he needed (OP2).

While the level of participant engagement in services and level of communication by HAH staff was not collected quantitatively and could not be compared across participants, other variables from program data were assessed. Participants who completed follow-up care in the target range of 21 days from screening had, on average, significantly fewer days between screening and scheduled appointment dates when compared to participants who did not complete care within 21 days [$t(74) = -3.8, p < .01$]. Participants who completed treatment within 21 days had a mean of 12.1 days between their referral and scheduled appointment dates. Participants who did not complete follow-up within this time frame (including those who completed care in >21 days and those who did not complete follow-up care) had a mean of 19.0 days. **Therefore, scheduling appointments with a shorter turnaround period may increase rates of follow-up care in the participant population.**

Table 2: Chi-Square test of Independence Results.

	<i>Tx within 21 days</i>		χ^2 <i>p-value</i>
	Yes	No	
Gender			0.79384
Male	18	23	
Female	6	9	
Race			0.98917
Black	11	15	
White	8	11	
Age Group			0.69672
18-40	11	13	
41 and older	13	19	

Clinic Location			0.02581*
Uptown	6	8	
James West	17	16	
Englewood	6	25	
Dental Insurance			0.71361
Yes	12	15	
No	6	11	
Difficult to find transportation			0.77253
Yes/Sometimes	13	18	
No	11	13	
Place to stay			0.98211
Yes	14	19	
No	8	11	
Mental Health (MH) Condition			0.56113
Yes	13	18	
No	11	11	
Medication for (MH) Condition			0.57700
Yes	8	13	
No	16	19	
Anxiety about going to the dentist			0.67961
Yes/Sometimes	7	11	
No	17	21	
Regular Access to Dental Services			0.58915
Yes	13	15	
No	11	17	

Note: Variables were only included if they met the sample size requirements of the chi-square test. Due to the smaller numbers of participants who identified as Hispanic/Latino (n=8), Asian (n=1), or another race not described (n=2), the criteria for a chi-square test were not met. Therefore, only participants who identified as Black or White were assessed for variable independence.

h. What were barriers to timely follow-up care?

Staffing limitations and scheduling challenges were barriers to providing timely follow-up care to participants. The service model involves dental outreach at sites and subsequent referral to HAH clinics for follow-up care but relies on availability at those health centers. Due to limited staffing, a provider is sometimes only able to see participants one to two days a week at these clinics. Clinic staff described this limitation as a challenge to completing follow-up care. **“The one day a week is really limiting. Sometimes I'm having to book people two, three weeks out, and if they're having an acute need, they don't wanna hear that they can't be seen for three weeks”** (HAH1). Another staff echoed the same concern. **“I wish we had something a little bit sooner than like two to three weeks 'cause that's how we kind of like lose the patient”** (HAH2). However, some participants had appointments scheduled with a quick turnaround, and care was still lost.

For example, one guy had a very, very large abscess on a tooth, where it was like draining like just touching it and like pooling in his mouth ... I was like you really

need to go like as soon as possible... [He was] scheduled the next day and he didn't show up, and so we've kind of lost care (D1).

Additional challenges to follow-up care for this population included competing priorities and financial barriers. **"It's hard to get a person that's like living on the streets to come for routine care,"** one HAH staff mentioned, **"That's the last thing they're worried about is getting teeth cleaned, but unfortunately that's the challenge to get them to come back - routine stuff,"** (HAH2). The cost of services poses a barrier as well. One HAH staff said that regarding the dental services, **"if they have to pay something out of pocket or something, they insurance can't cover for, that's the only challenge"** (HAH2).

Acceptability

- i. In what ways did the Oral Health program increase engagement in dental activities for participants?

The Oral Health Service has brought services to participants and allowed them to take care of their health in a way that they may not have been able to do before. Of the participants who completed the health assessment, only 22% had seen a dental provider within the previous year (n=15, Figure 1). This is almost three times lower than the national average for adults at 63%²⁵. Furthermore, 43% of participants reported that they hadn't seen a dental provider in over three years (n=29).

When was the last time you saw a dentist?

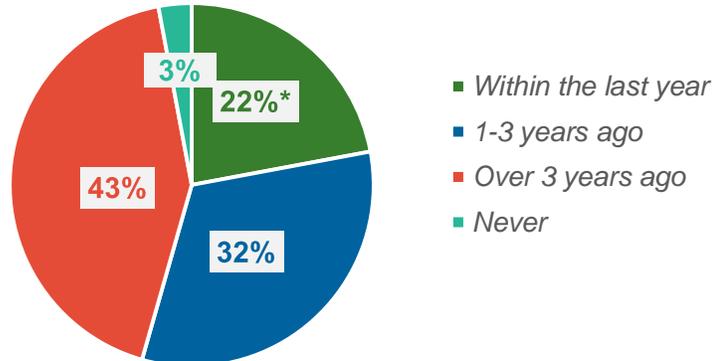


Figure 3: Participant self-reported last dental visit from Health Assessment Form (n=68).

Staff supported these findings, sharing that members of the participant population face challenges in prioritizing primary health, let alone dental health. They also described that the ability to provide services to participants at outreach sites has increased engagement for this population.

Now you're bringing [dental services] to people who possibly never have access to that. Right? 'cause they never prioritized that. They go to the emergency room to sleep. They go to the doctors just to kinda get something that comforts them or whatever. They're not going to the dentist unless they have pain (OP2).

Additionally, having conversations about dental health education helped increase participants' awareness about their dental health. For HAH staff, this includes **"helping patients who don't**

even know how to brush their teeth,” (HAH2) and seeing participants who **“haven’t taken care of health or teeth in, we don’t know how long,”** (HAH1). Outreach staff described the same relevance for dental services at their sites.

We have a lot of folks who come in having neglected their oral health for years, having had extractions, broken teeth, all sorts of things, and so folks would come in here really looking to sort of improve upon their life (OP1).

Data from the health assessments indicated the importance of these services to participants. All but one participant described dental services as being very important (81%, n=55) or somewhat important (18%, n=12) to them. The act of bringing services to outreach sites may have facilitated participant engagement in dental services by removing a barrier to care. Moreover, 84% of participants indicated that they would like to continue to receive dental services at HAH (n=58), with only 3 participants saying they would not (4%) and the rest reporting that they were unsure.

- j. What were the factors that helped increase engagement in dental activities for participants?

Bringing oral health services directly to outreach sites built respect and trust between HAH staff and participants, increasing their engagement in dental activities. The development of relationships between HAH staff and participants has increased engagement in services and strengthened the program. **“Reaching out to these participants to where they’re at”** (D1) has been an important aspect of building trust and respect. The benefits of this relationship go beyond increased engagement, as one outreach staff noted:

To be able to go to a dentist that is preventative in nature but yet will still address some of the pain issues because they have a relationship with you, I think it's an added value. I think that it allows that individual to know that you see them in a way that they had not been seen before (OP2).

Additionally, staff shared that connecting participants through the HAH system of care and the increased consistency of services have made it easier to get participants seen for oral health needs.

- k. What were the barriers to engagement in dental activities for participants?

Concerns about trust at the early stages of the program, cost, insurance, and other challenges of homelessness were barriers to engagement in dental activities for participants. Scheduling appointments for participants was sometimes a challenge for outreach staff. According to staff, engagement in care for participants may have been limited by the early stages of provider-participant relationships and a lack of trust. Outreach staff shared that building trust and relationships with this community takes time, and the population at the site may have varying opinions of HAH. Particularly at one location, HAH had opened a nearby clinic and limited its outreach to the site. It has taken a return to providing services and time to repair the relationship between the community, providers, and HAH.

Additionally, staff described a lack of healthcare literacy, lack of an address, and other conditions related to social determinants of health that posed challenges for engagement in care and building consistency.

I have a lot of people who will cancel appointments because they don't have like [a] bus fare to get to us ... I would say pretty much everybody I see is either homeless, underemployed, or have mental health issues ... or unfortunately some issues with addiction (HAH1).

Another staff noted that some participants have been facing homelessness for a significant time or are youth who **“may not have had parents that took them to the dentist, so it has never been a priority”** (OP2). These concurrent challenges make it difficult for participants to prioritize regular dental care.

[Participants] come to us, unfortunately, when they're in pain. So, it's our charge to get them to make them aware if you came back like six months ago for this cavity that we were trying to fix, we could have restored this cavity for you ... it's just like hard 'cause they got other stuff on their mind (HAH2).

One outreach staff described additional barriers stemming from the fact that lately, because of the pandemic, health conversations are scary and uncertain. **“We're not having health conversations in reference to 'how you doing?' right? How did you get here, right? What's going on?”** (OP2). The uncertainty of health paired with the uncertainty of housing may cause additional stressors in the lives of individuals experiencing homelessness that interfere with their ability to maintain their oral health. Many participants of the Oral Health Service reported experiencing or sometimes experiencing anxiety about going to the dentist (37%, n=25).

Another barrier in engaging participants in care was the process of setting up appointments, particularly for urgent care needs. Outreach staff described the challenge of having too many steps to bringing a participant in front of the dental team, saying, **“It's a lot of appointments leading up to actually addressing an issue,”** (OP1). The same outreach partner described an example of struggling to get a participant seen for an urgent care need.

It happened on a Tuesday. They were able to get on the provider schedule for like, you know, sort of the initial review of the issue on a Wednesday... From that point, we weren't able to schedule the appointment for another 10 days because that's the next time that they would be on-site, and they were already fully booked on that day as well. So now we were pushing it back even further. What we ended up doing to resolve the situation is just sending them to Stroger [Hospital] and hoping that they got connected somehow into that sort of team or those dental services (OP1).

Another outreach partner described the phone system as a major barrier, and that when needing to make an appointment, they would rather wait until HAH is at the site because **“it just takes too much time to get on their phone system”** (OP2).

- I. How can the OH program continue to increase engagement in dental services for participants?

In order to increase engagement in services, staff suggested increased consistency of contact points at outreach sites and additional dental staff to provide systems navigation and oral health education for participants. One HAH staff described the importance of reliability and outreach in helping “**make them [participants] aware that we’re here for them and then what days and what services they can access**” (HAH2). This idea was echoed by an outreach staff who described a “**system of survival**” that individuals experiencing homelessness utilize to take care of their needs at different agencies throughout the week and month (OP1).

I think sometimes the idea is like consistency and a little bit of like predictability. So, if shelter-based services are going to continue to happen, they've got to be consistent. They've got to be there the same Tuesday, you know if it's the first Tuesday of the month they've got to do it for a few years to make sure that folks know. (OP1)

Additionally, the availability of a systems navigator to “**help people understand the processes, what to expect, what this looks like,**” would be useful for “**making sure that people are also sort of like consistently engaged and retained in accessing care**” (OP1). Other staff described the importance of consistency in building trust and increasing engagement in care.

Another proposed way to increase engagement was bringing in another staff member during off weeks to provide educational conversations that are more “**proactive than reactive,**” (OP2) about the importance of oral health, risk factors, and how to take care of your oral health as a person experiencing homelessness.

If a dental hygienist came and kind of just did demonstrations and talked about what dental care is ...then schedule the appointments, right? Then they'll, you know, kind of build some momentum with that (OP2).

Recognizing that some participants may have never had those conversations, education efforts could help increase engagement in services by demonstrating the importance of oral health.

Coverage

- m. In what ways did the oral health program increase access to oral health services for individuals experiencing homelessness?

Providing dental screening services at outreach sites where participants already receive other care has increased access to oral health services by reducing the need for transportation. While data limitations prevented the research team from quantitatively assessing an increase in access to care, over half of participants reported that before their screening at the outreach site, they had no regular access to dental services (51%, n=35). Participants were asked to select from a list of reasons why they were unable to access dental services. Many participants indicated that they did not know where to go (29%, n=9) or they had no transportation (29%, n=9). By providing dental screening services at outreach sites, the Oral Health Service may have reduced these barriers and improved participant access.

Staff perspectives supported program data and demonstrated the impact of bringing the service to outreach sites. **“What I have liked is the fact that we are reaching out to these participants to where they’re at, reducing travel for the individuals and increasing access to care”** (D1). The dentist also described how in the past, a dental assistant was needed, and it was a more time-consuming process. The service model has been a way to **“get in contact with people, diagnose conditions in a less intensive-like way with personnel by just using a provider that can provide those services”** (D1), thereby increasing access. A HAH staff member described how the service increased access to care, **“(by) a hundred percent, at least”** (HAH1). The service has also improved access by directly setting participants up with follow-up appointments at HAH clinics.

- n. What were the facilitators to accessing oral health services for individuals experiencing homelessness?

The reduction of travel for participants and knowledge of where to obtain oral health care increased access to these services. The dental provider described that reducing travel for participants has been a major facilitator to accessing care. A HAH staff supported this, saying, **“before (the Oral Health Service) it was just, it was hard because they’d have to get a ride from the facility,”** (HAH1). As previously reported, one of the most substantial reasons for a lack of access to care was no transportation (29%, n=9).

The act of providing services on-site also helped develop a relationship between HAH and participants, which increased participant willingness to access services. One outreach staff described feeling fortunate for being able to have the Oral Health Service at their site, sharing, **“it’s the value that people would get in knowing that they can get access to that level of care, either medical care and/or dental care”** (OP2). The availability of dental screening services at outreach sites reduces the need for participants to find services and travel to them.

- o. What were barriers to accessing oral health services for individuals experiencing homelessness?

Lack of medical and dental insurance, lack of prior engagement in care, concerns about the cost of services, and anxiety about visiting the dentist were found to be barriers to accessing regular dental care. Affordability was listed by 48% of participants as a reason for not being able to access regular dental care (n=15). Staff echoed this concern as they described the challenging decisions participants must make concerning their oral health and other financial responsibilities. Other barriers described by staff were concerns about insurance as well as a lack of trust in medical providers. Results from chi-square tests of independence found that participants with medical and/or dental insurance were more likely to report access to regular dental services than participants without insurance (medical: $\chi^2(1, N = 61) = 8.0, p < .01$; dental: $\chi^2(1, N = 68) = 3.2, p < .05$, Table 3). Those who reported experiencing anxiety about going to the dentist (37%, n=25) were less likely to report regular access to dental services ($\chi^2(1, N = 68) = 4.3, p < .05$) than those who did not. Therefore, increasing insurance rates and promoting positive trusting relationships may be important in increasing access to and engagement in care for this population.

A lack of healthcare literacy, lack of an address, and other health challenges (likely related to the trauma of homelessness) were described as barriers to accessing care by staff.

I have a lot of people who will cancel appointments because they don't have like bus fare to get to us ... I mean, like, I would say pretty much everybody I see is either homeless, underemployed or have mental health issues, ... or unfortunately some issues with addiction (HAH1).

As lack of transportation was a major reason for lack of regular access to dental care (29%, n=9), it is not surprising that needing transportation to receive follow-up care at HAH clinics remains a barrier for participants, even though reduced transit cards are provided to those who may need it. Furthermore, concurrent barriers faced by individuals experiencing homelessness make it difficult to prioritize regular dental care. A HAH staff described how the challenges that participants face cause them to be less likely to access and engage in routine care because they have other concerns on their minds. A chi-square test of independence found that participants who reported that they did not currently have a place to stay were less likely to report regular access to dental services than those who did ($\chi^2 (1, N = 64) = 4.8, p < .05$). An outreach staff noted that younger participants **“may not have had parents that took them to the dentist, so it has never been a priority”** (OP2). Analysis of program data found that participants who were between 18-40 years old were less likely to report regular access to dental services compared to those 41 years and older ($\chi^2 (1, N = 68) = 8.9, p < .01$). The challenge of setting up appointments for an urgent care need posed a barrier to accessing services for both outreach sites. An outreach staff described waiting to schedule appointments until HAH staff were at the site because of the difficulty and time burden that the phone system posed. Staff from another outreach site described the challenge of getting a participant with a broken tooth in for care. The complicated process of getting the participant seen by a provider and the limited availability of the dental team led the outreach staff to send the participant to another location to attempt to receive treatment.

Table 3: Chi-Square test of Independence Results.

Variables were only included if they met the sample size requirements of the chi-square test.

	Regular access to care		χ^2 p-value
	Yes	No	
Gender			0.70699
Male	24	24	
Female	9	11	
Race			0.12867
Black	18	14	
White	9	16	
Age Group			0.00288*
18-40	8	21	
41 and older	25	14	
Medical Insurance			0.00475*
Yes	30	21	
No	1	9	

Dental Insurance			0.02590*
Yes	22	13	
No	8	11	
Difficult to find transportation			0.27445
Yes/Sometimes	16	21	
No	17	13	
Place to stay			0.02788*
Yes	23	17	
No	7	17	
Place to stay in two months			0.17392
Yes	26	21	
No	4	8	
Mental Health (MH) Condition			0.74348
Yes	15	16	
No	11	14	
Medication for MH Condition			0.43361
Yes	12	16	
No	21	19	
Anxiety about going to the dentist			0.03757*
Yes/Sometimes	8	17	
No	25	18	

Note: Variables were only included if they met the sample size requirements of the chi-square test. Due to the smaller numbers of participants who identified as Hispanic/Latino (n=8), Asian (n=1), or another race not described (n=2), the criteria for a chi-square test were not met. Therefore, only participants who identified as Black or White were assessed for variable independence.

- p. What other services offered by HAH were offered to participants?
- q. What is the existing infrastructure for Oral Health outreach that provides referrals to other social services?
- r. What indicators determine whether an individual has social determinant needs? How are referrals determined?

The HAH benefits team supports referrals for participant needs that come up during conversations with providers as well as reported on the health assessment form. The team makes referrals for housing, insurance, social security assistance, transportation, and mental health services. The existing referral infrastructure for Oral Health uses a referral/benefits team to support participant needs. **"If I refer to benefits, they end up taking care of like, trying to find, like link them [participants] into housing, link them into some insurance or like social security or things like that"** (HAH1). Providers may ask participants if they would be interested in other services based on conversation or through participant responses to the health assessment. Other times, participants also ask directly for support during conversations with providers. **"If they're feeling like they need like some treatment with therapy, or if they want something one on one with their counselor, they just have to make us aware that they need an appointment,"** (HAH2). Transportation cards for bus fares

are also provided for participants if needed. **“Most of the time we have some bus fare cards on-site that we can help with,”** (HAH1).

- s. From an oral health standpoint, what are questions providers should ask in order to evaluate social needs?

Staff suggested that providers take a trauma-informed approach to care and ask participants about their frequency of medical care, the services they may be interested in, and the challenges they may face in maintaining care in order to better support their overall health. An outreach partner described the importance of the types of questions and the ways participants are asked about their needs. They suggested that by shifting the approach, conversations with participants can be used to inform relevant and adequate care.

We often ask the question, what's wrong with you? But the question is not about what's wrong. It's what happened, right? What happened that had you be here? What happened to be homeless and never looked at your teeth? What was there?

And inside that conversation, right, we begin to then discover what other things we may need to put in place so that kind of situation won't happen again. (OP2)

HAH staff also highlighted the context of homelessness in participants' lives, suggesting that providers talk to participants about their definition of primary care, the last time they had seen a provider (if ever), and what other aspects of care would they want support in. Another clinic staff described some questions that they thought may be important when evaluating the participant's ability to return for and receive care.

If there's multiple visits needed, finding out, you know, do you have a reliable way to get back to, to the clinic? If they don't, finding out, you know, knowing if they have insurance or not, you know, are you gonna be able to pay for these antibiotics or, you know, ibuprofen for pain? (HAH1).

Overall, the staff emphasized a need for respectful conversations that recognize the challenges of homelessness and center the experience of the participant.

- t. What were the facilitators to accessing other services offered by HAH to participants?

Staff found the benefits coordinators to support participant referrals to other services. While data limitations prevent an understanding of participant perspectives on accessing other services, staff shared their perspective on key supports. For example, the benefits team supports participant needs when they are receiving services at HAH clinics. This team was described as helpful in providing support to participants. **“Our benefits team is amazing and they're very good at connecting the participants to whatever they can,”** (HAH1). Staff at the outreach site shared that having people to help participants get access to benefits **“makes it easier for them to get other additional medical services and dental services”** (OP2).

- u. What were barriers to accessing other services by HAH participants?

Limited time prevents formalized screenings of social determinants of health and relies on conversations between providers and participants to determine referral needs. Much of the current process for screening for social determinants of health needs happens during informal conversations between provider and participant. However, limitations to formal screening for SDOH pose challenges to ensuring adequate referrals are made. **“As a provider, I barely have enough time to deal with whatever medical they're coming in with. I don't have the time to do other screenings”** (HAH1). The Oral Health Service currently uses a health assessment form to collect information about SDOH, but strategies about how to act on this data are still being developed. **“The roadblock is that we haven't figured out how to introduce people to [other] services, but I think that's been a question in our organization as a whole is like, how do we do that?”** (D1). The dental provider described the need to create channels of communication between Heartland Alliance departments in order to support the well-being of participants.

Sustainability

- v. What are some ways in which partnerships with shelter sites were strengthened through the Oral Health program?

Through collaboration and clear communication, relationships between outreach sites and HAH have been strengthened by the Oral Health program. Partnering and working through challenges with outreach staff improved existing relationships with HAH. One example of strengthened relationships has been working together to minimize the number of no-shows for appointments with Haymarket staff. This collaboration has been a success as they were able **“to identify a solution to be able to sort of make sure that we're communicating and reminding people”** (OP1). The dental provider described an example of how working through the service model workflow with staff to describe why participants may need to complete complicated procedures at an off-site clinic was beneficial to the relationship (Appendix D).

At Matthew House, strengthened relationships came from examples where outreach staff felt the commitment of HAH staff to the participants and their needs. One example was when the dental provider communicated with outreach partners to alert them of a participant who needed medical attention and did not follow up at the HAH clinic for their appointment. As the outreach partners described, **“we only started this a couple of months ago even, and so just that level of like really following through has us create a level of trust that you know, OK, this person really cares,”** (OP2). Continued partnerships with outreach sites will provide additional opportunities to grow these relationships even more.

- w. What were the facilitators to strengthening relationships with shelter sites?

A shared understanding of and commitment to participants as well the mutual credibility the service provides has helped to strengthen the relationships between outreach sites and HAH. At Haymarket, the collaboration between staff has been a facilitator to improved relationships between the site and HAH. Outreach staff describe a shared **“understanding of our participant population,”** as refreshing and a positive contributor to the relationship (OP1). A health liaison also contributes to this relationship by increasing communication between HAH

and outreach sites to better support participants. Both outreach partners and the dental provider acknowledged the long-time desire for dental services and that the provision of these services has improved the pre-existing relationship between HAH and Haymarket.

At Matthew House, the early relationship has grown with the implementation of dental services. Factors that have supported the relationship include the engagement and attention to detail of HAH staff, the dedication to participants, and the level of trust that has been already established in a short window of time. The outreach partners described the benefits of the relationship to the credibility of Matthew House:

It is really good for who Matthew House is in the community, right? As this access point to that level of care? So that helps give us more, a little bit more credibility within this homeless community, is that I can go to Matthew House can get this particular service rendered (OP2).

The dental provider supported this statement, describing the promising relationship that they feel will have even more success as they continue to work together. **“I think it’s twofold. I think it helps us with engaging individuals, but I think it helps with their [Matthew House] programs and the services they can offer as well” (D1).**

- x. What factors inhibited the ability to strengthen relationships with shelter sites?

Challenges related to limited availability and capacity of the service as well inconsistencies of care provided by HAH harmed the relationships between outreach sites and HAH. From the perspective of the dental provider, staffing shortages have affected the relationships with outreach sites and caused them to be slow-moving. **“I just think, you know, it’s just come down to really being more available and having more staff for not only the turn around on referrals, but also just engaging with the organizations too” (D1).** Scheduling on the side of outreach staff has been both challenging and confusing. The Heartland Alliance phone system was described as a major barrier, and there was also confusion about why multiple screenings are needed for a participant to see a provider. The dental provider described an initial challenge with communication about the capacity of the service at an outreach site, but through an explanation of the workflow, they were able to come to a shared understanding.

At Matthew House, a historic lack of consistent commitment to outreach services was a barrier to trust. Though previously providing outreach at Matthew House, HAH had stopped providing services on-site at the end of 2017 because they opened their own clinic nearby in Englewood. Outreach staff described that while one of the positive aspects of the COVID-19 pandemic was that HAH brought services back to the outreach site, at first providers did not trust HAH. As they explain, Matthew House staff did not trust HAH, **“[Because] y’all abandoned us, and the clients didn’t trust them [HAH] 'cause they weren’t showing up here anymore” (OP2).** Since the pandemic has led to the return of outreach services, partner staff described how trust is being rebuilt between the Matthew House community and HAH. The Oral Health Services aims to further develop and sustain this relationship by serving participants with follow-up oral health care at the nearby HAH clinic.

Recommendations

The findings from this study prompt several recommendations to improve the provision of oral health care to people experiencing homelessness and people with substance use disorder.

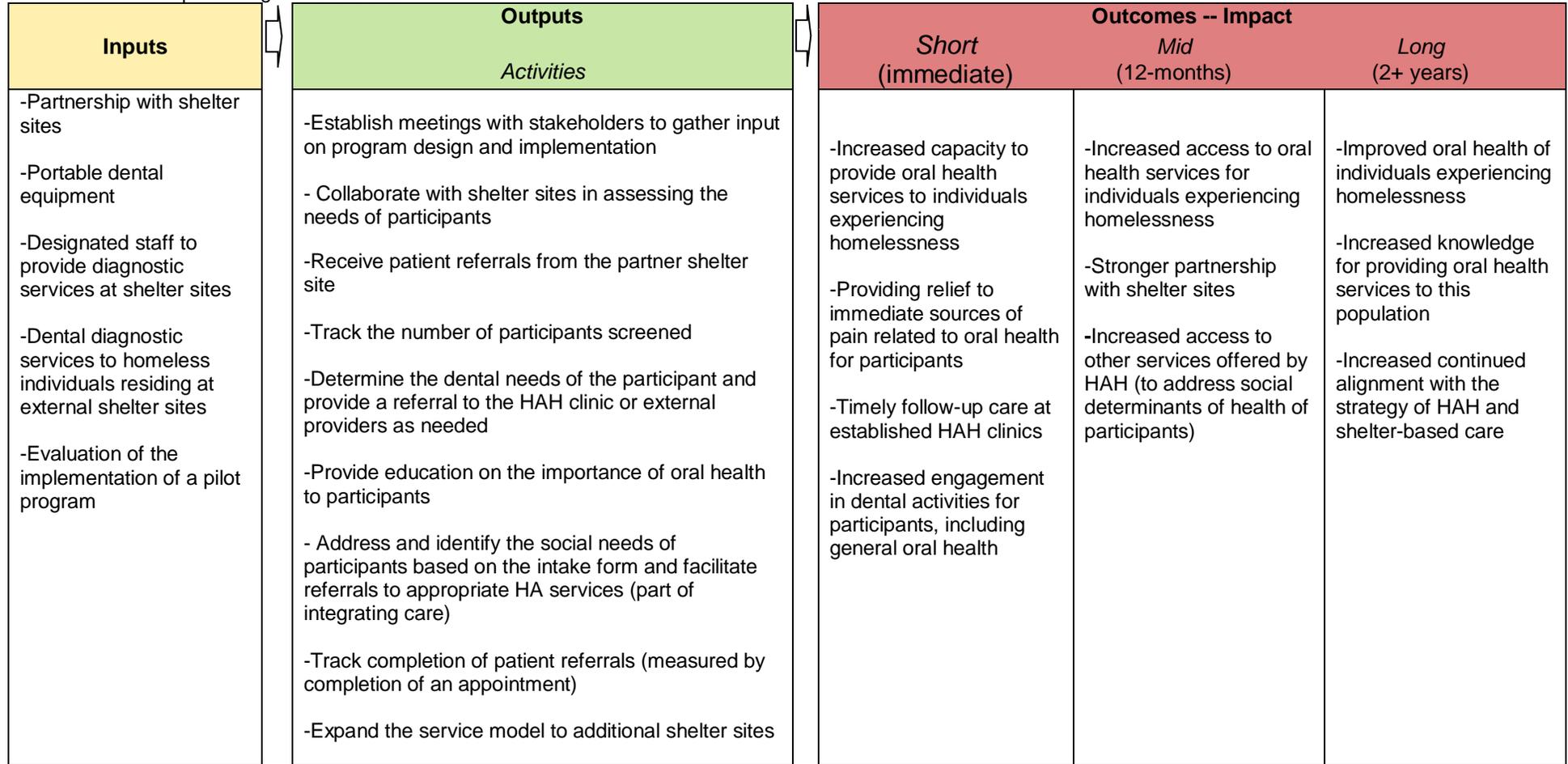
These include:

1. **Funders should increase support for oral health services for people experiencing homelessness.** Staffing limitations came up, time and again, as a barrier to seeing patients expeditiously—which, in turn, raised the risk that the patient would not be seen at all. The State of Illinois could alleviate some of these limitations by increasing Medicaid reimbursement rates for dental services to levels competitive with other states and explore federal options for add-on payments for providers. Philanthropic funders should address gaps in Medicaid funding and oral health service availability by assisting with costs related to hiring, administrative needs, funding for services for people not eligible for Medicaid but who cannot afford private insurance, and testing innovative service delivery methods.
2. **HAH should strive to increase consistency in the delivery of its outreach services.** As outreach partner staff noted, people experiencing homelessness are more likely to engage in services when they are delivered consistently over time. Committing to showing up at sites on the same day per month, for example, can increase predictability for potential participants, ultimately improving trust in HAH. Increased funding for these services (Recommendation 1) would allow HAH to increase consistency.
3. **HAH should aim to simplify the scheduling process.** HAH should reduce the number of steps it takes for outreach partner staff to schedule appointments. Improvements could include simplifying the phone system.
4. **HAH should consider involving additional types of dental staff to increase engagement and the breadth of services available.** Recommendations from interviews include a dental health educator or hygienist to provide general oral health education on weeks when the dentist is not there, and a care coordinator to help participants navigate various systems.
5. **HAH should explore ways to improve its processes for screening for and addressing social determinants of health.** Currently, SDOH needs come up through informal conversations between participants and oral health staff. A more formal, rigorous SDOH assessment could reduce missed opportunities to identify and act upon other participant needs. In addition to screening, HAH should work as an organization to set up referral procedures to act on all identified SDOH needs. Key SDOH needs that this study identified as associated with lack of access to oral health care are lack of housing, medical insurance, and dental insurance; HAH should consider prioritizing action in these areas. The authors acknowledge that staff and time limitations are barriers to this recommendation and that it would be difficult to address fully in the absence of funding enhancements.
6. **HAH should consider ways to conduct oral health outreach to younger people experiencing homelessness.** This study identified people ages 18 – 40 as particularly struggling with a lack of access to regular dental care.
7. **HAH and researchers should explore ways to reduce dental anxiety.** Anxiety about going to the dentist was found to be a barrier to regular dental health care. A fruitful area

for future research and program innovation could be to pilot ways to reduce dental anxiety among people experiencing homelessness.

Appendix A: HAH Oral Health MRHT Pilot Logic Model

Situation: In response to the COVID-19 crisis, Heartland Alliance Health (HAH) has aligned with multiple group-living shelter sites to provide integrative and accessible urgent dental care for residents experiencing homelessness.



Assumptions

- Participants are receptive to receiving oral care at shelter facilities
- Participants receiving initial services will be more likely to improve future oral health behavior
- Participants are receptive to following up with care for dental needs at HAH health center sites.
- Participants are able to maintain visits for utilization of care, i.e. they remain within a geographic area for a longer period of time.
- Participants are able to travel to our HAH Health centers for follow-up care.

External Factors

- COVID-19 pandemic, risk-management
- Shelter's capacity to facilitate partnership
- Difficulty with reliable transportation to HAH health center sites
- Difficulty with reliable communication and ability to follow up with individuals (phone contact available other contact methods), highly transient population
- Comorbid conditions of individuals (substance use and other chronic health conditions)

Appendix B: Health Assessment Form

Please answer to the best of your ability.

1.) What gender do you identify as?

- Male Female Neither Decline to answer

2.) Do you consider yourself transgender?

- Yes No Decline to answer

3.) What is your age group?

- 18-24 years old 25-40 years old 41-64 years old 65 years or older

4.) Which best describes you? (select all that apply)

- African American White Asian Native American
 Hispanic/Latino Other

5.) Do you have medical insurance?

- Yes No Don't know

6.) If YES, what type of insurance do you have?

- Medicaid Medicare Private (employer offered) Private (self)
 Don't know

7.) If YES, do you currently have a medical provider?

- Yes No Don't Know

8.) Do you find it difficult to find transportation to healthcare appointments?

- Yes No Sometimes Decline to answer

9.) Do you currently have a place to stay?

- Yes No Decline to answer

10.) In the next two months will you have a place to stay?

- Yes No Decline to answer

11.) Are you interested in receiving help in applying for public housing assistance?

- Yes No I don't know

12.) Do you experience any mental health conditions such as anxiety or depression?

- Yes No I don't know Decline to answer

13.) Do you currently use drugs or alcohol?

- Yes No Decline to answer

14.) Do you take medication for mental health conditions?

- Yes No I don't know Decline to answer

- 15.) Do you wish to be referred to services for mental health or substance use treatment at HAH?
 Yes No I don't know
- 16.) Within the past 12 months, did you worry that your food would run out before you got money to buy more?
 Often Sometimes Never I don't know
- 17.) Within the past 12 months, did the food you bought just not last, and you didn't have money to get more?
 Often Sometimes Never I don't know
- 18.) Do you wish to be referred to food banks and related services at HAH?
 Yes No I don't know
- 19.) Do you have dental insurance?
 Yes No Don't know
- 20.) If YES, what type of dental insurance do you have?
 Medicaid Medicare Private (employer offered) Private (self)
 Don't know
- 21.) When was the last time you saw a dentist?
 Within the last year 1-3 years ago Over 3 years ago Never
- 22.) What was the purpose of the visit?
 Regular checkup Tooth pain/Emergency dental visit Don't know
 Other reason
- 23.) How important is it for you to visit a dentist regularly?
 Very important Somewhat important Neither
 Somewhat Unimportant Not important
- 24.) Before today's visit, have you been able to access dental services regularly (at least 1-2 times a year)?
 Yes No

If no, please indicate reasons why (check all that apply):

- Dentist doesn't take my insurance Don't know where to go Can't afford it
 Clinic hours not suitable Distance not suitable No Transportation
 Other: _____

- 25.) Do you avoid going to the dentist?
 Yes No Sometimes
- 26.) Do you experience anxiety about going to the dentist?

Yes No Sometimes

27.) Do you currently experience tooth pain?

Yes No I don't know

28.) If yes, how long have you experienced the tooth pain?

Past two weeks For 1 month For 2-3 months 4-6 months

29.) Do you have fillings from previous dental work?

Yes No Don't know

30.) Have you ever had any adult teeth removed?

Yes No Don't know

31.) If yes, how many adult teeth have you had removed in your lifetime?

0 1-3 3-6 More than 6 Don't Know

32.) What is your smoking status?

Don't smoke Never smoke Smoke occasionally Smoke often

33.) Do you wish to receive continued dental care at HAH?

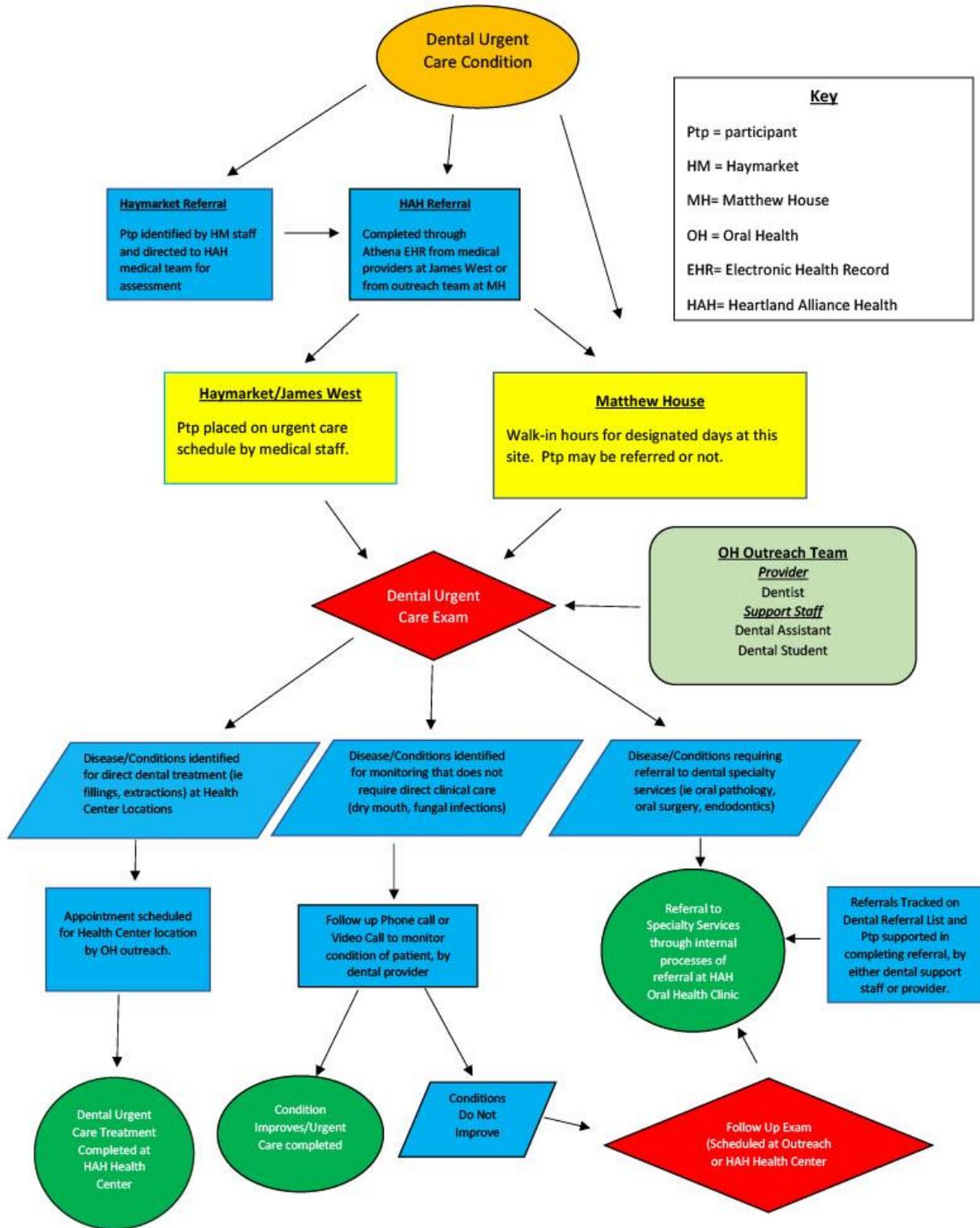
Yes No I don't know

Appendix C: Intake form

Q1. Outreach site	Haymarket	Matthew House			
Q2. Survey ID					
Q3. Initial Exam Date					
Q4. Tx Recommended	Periodontal Therapy	Dentures	Filling/Restorative	Extraction	Root Canal
	Further Exam (x-rays, exam)	Crowns	Other		
Q5. Tx #1 Comments					
Q6. Tx #2 Recommended	extraction				
Q7. Tx #2 Comments					
Q8. Pt decision for referral (defer, health center, specialty referral)	Health Center	Specialty Referral	Defer Treatment-Participant	Defer Treatment-Dental provider requires medical clearance	
Q9. Date of Referral					
Q10. Scheduled Appointment Date					
Q11. Date patient was seen					
Q.12 Clinic Location of Treatment (if completed at HAH Health Center)	James West	Englewood	Uptown		
Q13. Appointment outcome	completed	no-show	loss to care	rescheduled	
Q14. Treatment Action Completed	Periodontal Therapy	Dentures	Filling/Restorative	Extraction	Root Canal
Further Exam (X-rays, exam)	Crowns	Consult Only	Deferred Treatment-Patient	Deferred Treatment-Provider Medical Clearance	Other
Q15. Number of Days between Referral and Treatment Completed at HAH Health Center					
Q16. Treatment Completed within 21 days of Referral at HAH Health Center	yes	no			
Q17. Referral to Other HAH Programs	yes	no			
Notes					

Appendix D: HAH Oral Health Service Participant Outreach Flow Chart

HAH Participant Outreach Flow Chart



Endnotes

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