

**A Review of the Impact of Comprehensive Oral Care on Treatment Outcomes in Patients
with Substance Use Disorders and Outline for Future Research in Pittsburgh**

by

Ashlea Noelle Krupa

BS in Chemical Engineering, Pennsylvania State University, 2014

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This essay is submitted

by

Ashlea Noelle Krupa

on

April 19, 2021

and approved by

Essay Advisor: David Finegold, MD, Professor, Department of Human Genetics, Director
Multidisciplinary MPH Program, Graduate School of Public Health, University of Pittsburgh

Essay Reader: Richard Rubin, DDS, MPH, Assistant Professor, Department of Dental Public
Health, School of Dental Medicine, University of Pittsburgh

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Ashlea Noelle Krupa, MPH

University of Pittsburgh, 2020

Abstract

Every year millions of Americans struggle with substance use disorders (SUD). SUDs effect these individuals' mental and physical health. Specifically, individuals with SUDs have higher incidence of oral health complications that compromise SUD treatment outcomes. Finding ways to improve treatment outcomes is imperative to help allow these individuals to return to being functioning members of their communities. Studies have shown that integration of medical services into substance abuse treatment improves patient's addiction treatment outcomes. A study at the University of Utah School of Dentistry was the first of its kind to examine how comprehensive oral care in conjunction with SUD care may affect treatment outcomes for patients with SUDs. Those who received oral health care had higher rates of treatment completion, decreased drop out rates, improved average length of stay, and were more likely to be employed, more likely to be abstinent from drugs and less likely to be homeless. Based on this study, there is value for incorporating a similar program at the University of Pittsburgh. The public health relevance of this paper is to demonstrate the value of oral health care on treatment outcomes for patients with SUDs, identify the current need to further research the connection between oral health care and SUD treatment outcomes, and outline a way to incorporate oral health care into general care services for patients with SUDs in the Pittsburgh area.

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1.0 Introduction

1.1 Substance Use Disorders

Substance use disorders (SUDs) affect people of all ages, races, and socioeconomic statuses. SUDs are described by the Substance Abuse and Mental Health Services Administration (SAMHSA) as “when the recurrent use of alcohol and/or drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home.”¹ Over 20 million Americans, 12 years or older, struggled with SUDs in 2018. This translates into an estimated 1 in 13 people needing substance use treatment. However, only roughly 4 million people reported receiving any sort of substance use treatment, which equates to less than 20% of those who need treatment, actually receiving treatment.¹

SUDs have substantial health and social consequences at the individual and societal levels. Substance abuse has direct and indirect effects on a person’s mental and physical health and well-being. The many facets to SUDs make treatment very challenging, as effective treatment needs to include many components to address the different factors influencing SUDs and their consequences. Effective treatment is key as the goal is not only to stop drug abuse, but also allow these individuals to return to functioning members of their communities. The United States spends over \$500 billion each year on substance abuse related expenditures. It has been estimated that for every dollar invested in SUD treatment programs, an average of \$5.50 is saved from reduction in drug-related crimes and the associated criminal justice costs. For example, the cost of one year of methadone maintenance treatment is less than one fifth the cost of one year of imprisonment. This estimated return on initial investment only increases when healthcare related savings are also

accounted for. Substance abuse is not just a financial burden for the United States, but a serious public health concern, as substance abuse diminishes the quality of life for anyone directly or indirectly affected.²

Recent changes to healthcare policy and law have allowed for a more public health-oriented approach to SUDs. Through the 2008 Mental Health and Parity and Addiction Equity Act and the Affordable Care Act, most health plans and organizations will be required to offer preventative interventions and treatments for SUDs. The passage of these two acts is allowing SUDs to be incorporated into more primary care clinics and allowing for integration of general healthcare with addiction treatment. This is imperative as studies have shown that primary care medical services in conjunction with SUD treatment programs improves patients' treatment outcomes.³

1.2 Substance Use Disorders and Oral Health

In addition to co-existing medical conditions that can increase challenges to and compromise treatment outcome, patients with SUDs have a higher prevalence of oral health complications, which may include dental caries, periodontal disease, bruxism, and tooth loss. These oral health problems may be a result of direct effects of substance use. Substance use can lead to such things as xerostomia (dry mouth) and drug-induced bruxism (tooth grinding). Other factors such as nutrition, oral hygiene, and use of dental services are all affected by the patients' lifestyle and lack of resources associated with their substance use.⁴ Between the limited access or usage of comprehensive dental services and increased dental consequences from substance use, an estimated 68% of patients with SUDs have major oral health problems.⁵

The World Health Organization defines Quality of Life (QoL) as an individual's "perceptions of their position in life in the context of culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns,"⁶ and oral health complications may affect an individual's QoL. To account for this, studies are now taking into consideration how oral health care is related to QoL (OHRQoL). OHRQoL examines how comfortable people are when eating, interacting with others, their self-esteem and how satisfied they are with their oral health. Examining OHRQoL allows for assessment of not just dental criteria, but also the patient's subjective emotional and social evaluation of their oral health. Research on OHRQoL finds oral conditions that affect appearance or are painful, can lead to isolation and depression from a desire to avoid social contact. This ultimately results in a poorer QoL.⁶ Understanding the relationship between oral health care, QoL, and SUD outcomes will help lead to improved treatment outcomes in patients with SUDs.

2.0 Literature Review on FLOSS Study

Beginning in 2015, the University of Utah School of Dentistry (UUSOD) studied how comprehensive oral care in conjunction with SUD care may affect treatment outcomes for patients with SUDs. The study was funded by the Health Resources and Service Administration (HRSA) through a workforce training grant entitled “Facilitating a Lifetime of Oral Health Sustainability for Substance Use Disorder Patients and Families (FLOSS).” The grant’s goals included increasing the skills and ability of dental faculty and students at UUSOD to treat patients with SUDs and providing comprehensive oral health care to patients with SUDs who were currently receiving treatment at one of two local treatment programs. The SUD treatment outcomes were evaluated for success using measurements derived from the Treatment Episode Data Set (TEDS) State Instruction Manual. The data from the study was published in the Journal of American Dental Association (July 2019) entitled “Comprehensive oral care improves treatment outcomes in male and female patients with high-severity and chronic substance use disorders.”

2.1 Methods of FLOSS Study

For the FLOSS study, two separate SUD treatment programs identified patients with SUDs who would be candidates for receiving oral health care at the UUSOD. One of the treatment programs, First Step House, allowed male patients with dental needs to self-select if they wanted to be included as part of the study, whereas the other treatment program, Odyssey House, randomly selected either male or female patients to receive dental treatment. In order to be eligible to

participate in the FLOSS program, the patient needed to complete one to two months of SUD treatment to satisfaction. In total, 158 patients from First Step House and 128 patients (70 male and 58 female) from Odyssey House received comprehensive dental treatment concurrently with SUD treatment. The dental control group included 862 patients from First Step House and 142 patients (97 male and 45 female) from Odyssey House, who received the same continuum of SUD services tailored to their specific needs as those patients in the dental treatment group. Since the patients from Odyssey House were randomly selected for dental treatment, many patients in the dental control group also had significant dental needs. These patients tended to manage their needs more through emergency care than comprehensive oral care. Patients in the dental treatment and dental control group were between the ages of 20 and 50 years old. All patients had a diagnosis of SUD for a primary drug of choice, which varied among patients. The most common primary drug of choice was either heroin or methamphetamine. Most of these patients did abuse multiple drugs and would be classified as polysubstance user.

For both treatment programs, length of stay, discharge methods (either completion or dropout), and treatment completion were factors considered for outcome measurements. Specifically, at First Step House, employment and homelessness were assessed at both intake and discharge and drug abstinence was assessed at intake, discharge, and throughout treatment. Examining employment, homelessness, and drug abstinence were key QoL markers to evaluate how comprehensive oral care can change responses to SUD treatment.

The patients in the dental treatment group were seen on average ten separate times by a student dentist at the UUSOD. On average, each patient in the dental treatment group had three or more surgical extractions, two or more periodontal procedures, five or more restorations, one crown, one endodontic procedure and 0.5 partial or full removable dentures. The average costs for

these treatments at the UUSOD would be over \$1200. The dental treatment improved oral function, appearance, and comfort for the patients.

2.2 Results of FLOSS Study

The data from this study showed for the first time that SUD treatment outcomes are improved when comprehensive oral care is included as part of SUD treatment. Significant differences in all factors being considered for outcome measurements were noted and are displayed in **Figure 1-4** below taken from the original publication.⁵

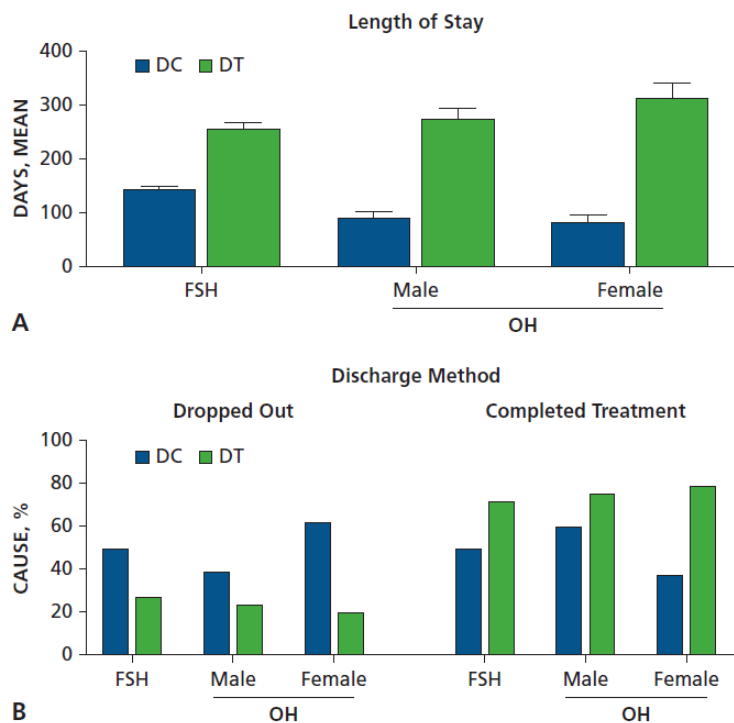


Figure 1 Data in **A** shows differences in mean length of stay for the dental treatment (DT) and dental control (DC) groups at both First Step House (FSH) and Odyssey House (OH). Data in **B** shows percentages of patients who dropped out versus completed treatment for both FSH and OH.⁵

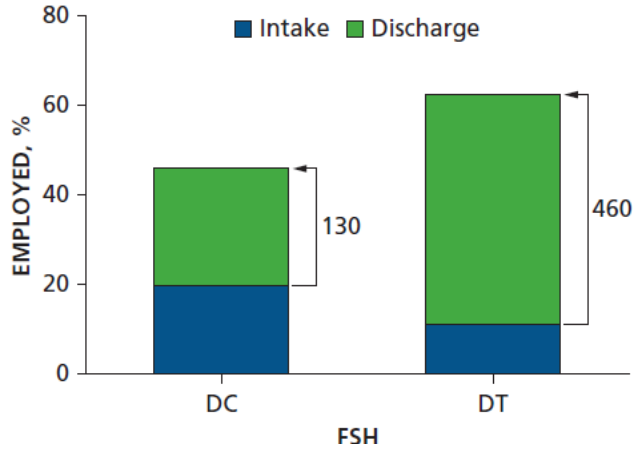


Figure 2 Data shows change in employment between intake and discharge for dental treatment (460%) and dental control (130%) expressed as a percentage for patients at First Step House.⁵

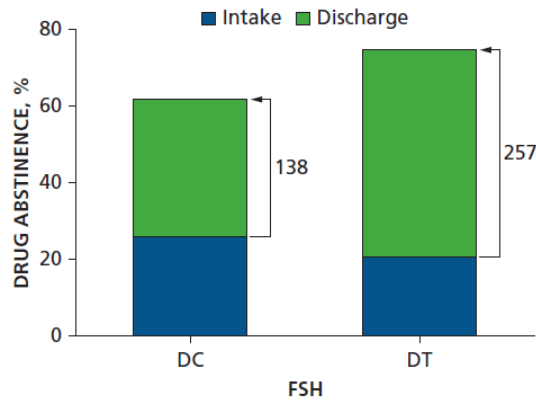


Figure 3 Data shows changes in drug abstinence between intake and discharge at First Step House between the dental treatment (257%) and dental control (138%) expressed as a percentage.⁵

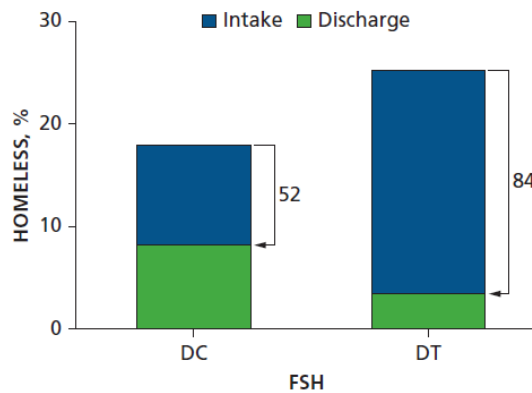


Figure 4 Data shows reduction in homelessness expressed as a percentage in dental treatment and dental control group at intake compared to discharge at the First Step House. There was a 52% decrease from the dental control group and an 84% decrease for the dental treatment group.⁵

The mean length of stay improved for those at both First Step House and Odyssey House. The percentage of those who dropped out of SUD treatment decreased at both treatment centers for those in the dental treatment group. Both treatment centers also had higher rates of treatment completion for those in the dental treatment group. For participants from the First Step House, those in the dental treatment group were 2.44 times more likely to be employed, 2.19 times more likely to be drug abstinent, and 0.27 times more likely to be homeless at the time of discharge. Multivariate analysis also concluded that age, primary drug of abuse, treatment provider, or gender (specific to the Odyssey House participants) did not significantly affect how oral health care impacted SUD treatment outcomes.

2.3 Conclusions of FLOSS Study

Prior to this study, there were no known reports examining how comprehensive oral health care influences outcomes in SUD treatment. Despite the fact that SUDs are associated with periodontal disease, caries, infection, tooth loss, and decreased history of oral health care. Around halfway through the FLOSS study, it was found by case workers that patients who were receiving dental treatment were having much better outcomes in their SUD treatment compared to those in the control group. These results were confirmed by data from the study discussed above. The positive treatment outcomes for patients at First Step House were also associated with higher employment, higher drug abstinence, and lower levels of homelessness at discharge for the dental treatment patients. These QoL measurements are important indicators for successful outcomes of SUD treatments. As mentioned, QoL measurements reflect a patient's physical and mental health and relationship with themselves and others. Most likely through dental treatment, patients had

improved physical and mental health and function which allowed for improvement in quality of relationship with themselves and others. This in turn improved employment, housing, and drug abstinence, which are all important aspects of recovery for patients with SUD. In essence, improving OHRQoL factors is crucial for positive treatment outcomes for conditions such as SUD associated with poor oral health and decreased sense of well-being.⁵

3.0 Proposal for the University of Pittsburgh

Despite knowledge that integration of medical services into substance abuse treatment improves patient's addiction treatment outcomes and health related outcomes,⁷ prior to the work done from the FLOSS Program at UUSOD there are no reports examining the integration of oral health care services into substance abuse treatment. Based on the success of the FLOSS grant, similar studies should be conducted at other dental schools. The grant's goal was not just to provide comprehensive oral health care to an underserved population, for example patients with SUDs, but also to improve the skills and ability of dental faculty and students to treat patients with SUDs.⁵ Individuals with SUD are more likely than the general population to have dental caries and periodontal disease, but are far less likely to receive dental care.⁸ Barriers to comprehensive oral care are associated with lifestyles of patients with SUDs as well as lack of resources. With the estimated 20 million individuals in the United States having SUDs¹ and therefore the growing need for substance use treatment, medical professionals, especially dental providers, need to understand how to meet the overall health needs of these patients. Grants similar to the HRSA's FLOSS grant could help dental providers and dental students improve treatment methods by working directly with patients with SUDs while also providing these patients with the oral care they need which in turn can improve their SUD treatment outcomes.

The University of Pittsburgh provides a wealth of resources for community partnerships for an interdisciplinary approach to substance abuse treatment programs. Collaboration between the School of Dental Medicine, the School of Medicine, the Graduate School of Public Health, the School of Social Work, and UPMC would provide an opportunity for members from these different disciplines to work together to help improve treatment outcomes for individuals with SUD. UPMC

currently has the Addiction Medicine Services program, which provides basic outpatient addiction program services. Explaining how oral care could benefit their patients' treatment outcomes could help justify their future involvement. As interdisciplinary learning and approaches to health care continue to be encouraged and research continues to show how interdisciplinary approaches to health care are more effective in improving overall health outcomes, partnerships between the various Schools within the University of Pittsburgh system should be encouraged. It would provide an opportunity for all students to work on interdisciplinary teams and understand how different facets of overall health and well-being affect their specific area of interest.

3.1 Barriers to Oral Health Care in the Pittsburgh Area

When discussing SUDs, particularly opioid addiction, most conversations within the University of Pittsburgh School of Dental Medicine curriculum revolved around changing the prescribing habits of dentists or being wary of drug seeking behaviors. Through this program, the issues around addiction can be viewed from a new perspective of how to help individuals in recovery or struggling with addiction as opposed to prevention. One of the largest barriers to dental care is financial. Within the Pittsburgh area, options for dental care for those struggling financially, include Federally Qualified Health Centers, Catholic Charities, and Mission of Mercy events. Federally Qualified Health Centers operate on a sliding fee scale based on percentage of income compared to the Federal Poverty Guidelines. Catholic Charities provides free dental care for working individuals over 18 with no insurance. Mission of Mercy is a two-day free dental clinic held annually where dental services are provided free of charge to under-served individuals in the Pittsburgh and surrounding area. Despite these options within the greater Pittsburgh area, many

individuals still go without dental care. Additional barriers to care besides financial include transportation, navigating a complicated system, appointment availability conflicting with treatment or employment, and concerns regarding stigma around SUDs.

3.2 Methods

By creating a partnership within the University of Pittsburgh's various schools, barriers to oral health care for patients with SUD can be better navigated to improve overall SUD treatment outcomes. The benefit for the Pitt students would be working within an interdisciplinary team. Dental students along with faculty support could demonstrate how to complete a dental screening exam for students within the Graduate School of Public Health or School of Social Work who work directly with individuals with SUDs. Students from Graduate School of Public Health and School of Social Work will learn how to complete a basic oral screening that could be beneficial for their futures, so they know when to refer people for oral care. The screening would evaluate basic dental concerns such as missing teeth, decayed teeth, periodontal status, chief complaint, pain, and self-evaluation of oral health. The screening would follow a simple process that includes questions to ask the patient, a breakdown of what to look for intraorally, and then guidelines for when to decide to recommend a patient for comprehensive oral care. At the end of the screening process, patients would also be asked a question regarding their interest in receiving dental treatment from a student at the School of Dental Medicine under observation from a licensed dentist. The dental student would be present for initial rounds of screenings until all students are calibrated to perform the screening effectively. During this time, the dental students also may be interested in learning more effective ways of communicating and interacting with patients with

SUDs from the School of Social Work or Graduate School of Public Health students. An example of a proposed screening form is located in the Appendix A. The goal would be to familiarize students from other disciplines with basic oral health concepts being evaluated and formulate a method to determine if the patient would be a good candidate for comprehensive oral care. Any patient deemed to be a good candidate for the program, would then be given a survey by the student(s) working directly with them, to learn about their SUD and gauge their perceptions around how oral health care affects their QoL. An example of this survey is included in the Appendix B section for your reference.

After the initial screening process, those who were deemed to have a need for comprehensive dental care and answered “yes” to wanting dental treatment, would be randomly sorted into either a dental treatment or a dental control group. Participants would be required to complete at least one month of the SUD treatment satisfactorily prior to beginning any dental treatment. Ideally the dental treatment and dental control group would each have at least one hundred patients. All patients would have a diagnosis of SUD for a primary drug based on the definition of SUD according to *Diagnostic and Statistical Manual of Mental Disorders*. Patients in both the dental control group and the dental treatment group would receive the same continuum of care provided by the SUD treatment program. Any patient who is assigned to the dental treatment group will also be screened for oral health care needs by a dental student under the supervision of a licensed dentist for inclusion in the study. Based on work done in the FLOSS program, it would be estimated that each patient would need to be seen for roughly ten separate appointments.⁵ Patients in the dental control and dental treatment groups would be followed for at least eighteen months after start of program. The length of the study may require further evaluation to determine if longer than eighteen months is appropriate.

The outcomes measures considered for the study would be similar to those for the FLOSS program at UUSOD. Length of stay, discharge methods, and treatment completion would be information gathered from the treatment program regarding the patients in the study. Discharge methods would be to differentiate between patients who left the treatment program against expert advice (drop out) versus those who completed treatment. If the treatment program assesses drug abstinence, this factor would also be considered as an outcome measure. The survey described above, displayed in Appendix B, would be distributed to the patients at the beginning of the study and at what is deemed the end of their SUD treatment, regardless if the end of treatment is due to drop out or completion. This survey will be meant to gauge OHRQoL outcomes. Similar to the FLOSS program, this will include questions around employment and homelessness but also questions around perception of one's oral health.

3.3 Funding

In order to provide dental treatment, funding would need to be obtained. Application for a grant from the HRSA would need to be applied for and justified. Funding for the FLOSS program was obtained from a grant from the HRSA.⁵ Therefore, it is reasonable to consider this as a first potential option for funding. Estimates for required funding per patient were calculated based on the average numbers of treatments performed on each patient within the FLOSS program dental treatment group and costs for these procedures at the University of Pittsburgh's School of Dental Medicine. On average each patient would require roughly \$2,000. Costs are estimated in **Table 1** below. If the program would want to provide treatment for 100 patients, the grant proposal would need to be for at minimum, \$200,000. This would cover the costs of the dental procedures and

materials. The proposal would be written such that the dental faculty overseeing treatment would be volunteering based.

Table 1 Estimated Cost of Dental Treatment at University of Pittsburgh School of Dental Medicine

Oral Health Procedure	Average Number of Procedure Needed Per Patient	Cost of Procedure	Total Costs
Surgical Extraction	3	\$100	\$300
Periodontal Procedure (Scaling and Root Planning)	2	\$55	\$110
Restoration	5	\$80 *Cost of one surface posterior composite restoration	\$400
Endodontic Procedure	1	\$50 *Cost for Root Canal Therapy completed by pre-doc student	\$50
PFM Crown	1	\$500	\$500
Cast Metal Removable Partial Denture	1 arch	\$600	\$600

3.4 Limitations and Future Directions

The main goal of this paper was to review the research article “Comprehensive oral care improves treatment outcomes in male and female patients with high-severity and chronic substance use disorders” published in The Journal of American Dental Association in July 2019 to explore the benefits of oral health care for those with SUD undergoing SUD treatment. From this review, I wanted to lay the foundation for the value of incorporating a similar program here at the

University of Pittsburgh. However, due to time constraints and limitations placed on the School of Dental Medicine due to COVID-19, I will not be able to implement such a program. But I want to provide a roadmap for what would be needed.

The next steps would be to first speak with the Dean of the School of Dental Medicine and the Senior Associate Dean for Clinical and Faculty Affairs. If granted their support, the next contact point would be to set up a meeting with the Chair for Restorative Dentistry and Comprehensive Care. It would be through the Chair for Restorative Dentistry and Comprehensive Care's support that a plan for when and where within the clinical areas treatment of patients with SUDs could occur. Offering ability to provide these dental services to third- and fourth-year students within Pitt's chapter of the American Association of Public Health Dentistry is most fitting, as these students have expressed an interest in public health dentistry. The Chair for Restorative Dentistry and Comprehensive Care would also serve as the best contact point to facilitate which dental faculty may be willing to volunteer their time to oversee the treatment for these patients. It is also crucial to find a contact point within the Department of Public Health at the School of Dental Medicine, who could help with the public health research aspect of the project. Concurrently with gaining support from the School of Dental Medicine, meeting with UPMC Addiction Medicine, and understanding if a partnership between the dental school and this aspect of UPMC could be the right fit for this study. If not, a different community partner such as Pittsburgh Mercy Addiction Services or other community substance use disorder treatment centers would need to be considered to see if a better fit. Once support is gained and a plan is determined within the School of Dental Medicine, setting up a meeting with Deans from the Graduate School of Public Health, the School of Social Work, and the School of Medicine to obtain support for students taking an interdisciplinary approach for this program. A proposal for a grant from HRSA

would need to be submitted to obtain funding. A suggestion would be for this idea to be continued by a future dental student either pursuing his or her MMPH or as a group undertaking for the Dental Public Health Certificate Program students.

4.0 Public Health Relevance

According to the excerpt from the Association of State and Territorial Dental Directors Guidelines State and Territorial Oral Health Programs, “Despite the fact that safe and effective means of maintaining oral health have benefited the majority of Americans, many still experience needless pain and suffering, have oral disease that impact their overall health and well-being, and have financial and social costs that diminish their quality of life and burden society.”⁹ One particular group affected most by oral health problem are those with substance use disorders. Oral health problems such as generalized dental caries, periodontal disease, and tooth loss are dental issues most prevalent to patients with SUDs and can be directly and indirectly attributed to their substance abuse. Current research done at the UUSOD through the FLOSS program has proven comprehensive oral health care has a positive effect in recovery for patients with SUDs.⁵ Despite there being many treatment programs for patients with SUDs, there are very few that incorporate oral health care programs as part of treatment.¹⁰ The public health relevance of this paper is to demonstrate the value of oral health care on treatment outcomes for patients with SUDs, identify the current need to further research the connection between oral health care and SUD treatment outcomes, and outline a way to incorporate oral health care into general care services for patients with SUDs in the Pittsburgh area.

5.0 Conclusions

The FLOSS program was able to demonstrate, for the first time, that integration of comprehensive oral health care into SUD treatment programs improves the SUD treatment outcomes.⁵ These results correlate to studies that indicate inclusion of comprehensive medical care into SUD treatment programs improves SUD treatment outcomes.⁷ OHRQoL factors are being utilized to understand how oral health impacts different patient factors including the patient's self-esteem. The OHRQoL factors directly contribute to overall QoL assessments. Therefore, best management of SUD treatment will require multidisciplinary approaches including incorporation of oral health care to achieve the best outcomes.¹⁰ Over 50% of patients with SUDs are estimated to have oral health problems. As the US surgeon general stated, oral disease can “undermine self-image and self-esteem, discourage normal social interactions and cause other health problems and lead to chronic stress and depression as well as incur great financial costs. They may also interfere with vital functions such as breathing, food selection, eating, swallowing and speaking, and with activities of daily living such as work, school, and family interactions.”⁵

After establishing the impact of oral health on treatment outcomes for patient with SUDs, the next steps include advocating for incorporating oral health care into more treatment services with patients with SUDs. With estimates stating roughly 8% of people over the age of 12 had a need for substance use treatment in 2018,¹ it is imperative that the health community continues to learn and to understand how to best meet the needs of these patients to establish the best treatment outcomes. One of the seemingly under addressed needs in this patient population is comprehensive oral health care. Creating partnerships between more dental providers and SUD treatment team members will be key to improving SUD treatment outcomes. The next steps for establishing such

a partnership here in Pittsburgh were outlined, including the universal benefits to all University of Pittsburgh Schools proposed involvement and key leadership buy-in needed to establish such a program.

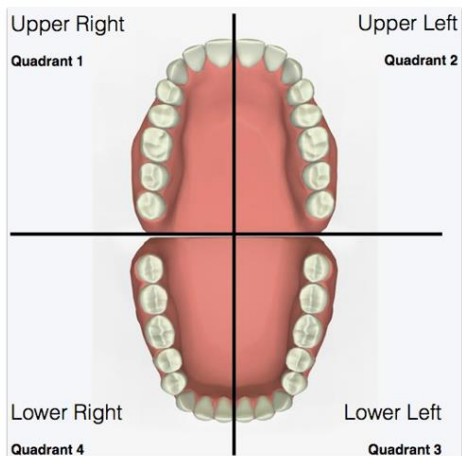
Appendix A Dental Screening Form



Ask: (Check box if patient answers yes)

- 1. Do you currently have any pain in your mouth?
- 2. Do you have any tooth pain when you eat or brush your teeth?
- 3. Are your teeth ever sensitive to hot, cold, or sweets?
- 4. Are any of your teeth loose or missing?
- 5. Have you had any teeth with tooth decay or lost a tooth from tooth decay within the past year?
- 6. Are your gums ever painful or do they ever bleed when you eat or brush your teeth?
- 7. Does your mouth ever feel dry?
- 8. How often do you brush your teeth (please circle)? **Twice a day / Daily / Less than daily / Never**
- 9. How often do you visit a dentist (please circle)? **Every 6 months / Every 6-12 months / Greater than 12 months**

Look: (Mark each quadrant in diagram accordingly to intraoral findings)



- 1. Heavy Plaque (P)
- 2. Calculus (C)
- 3. Signs of tooth decay (D)
- 4. Inflamed Gums (G)
- 5. Broken Teeth (B)
- 6. Missing Teeth (M)
- 7. Edentulous, missing all teeth (E)
- 8. Swelling/Infection/Irregular (S)

Dental Screening Form

SUD Patient Intake Form

Decide: (Check box if answer is yes)

- 1. Did the patient answer yes to 3 or more questions in the "Ask" Section?
- 2. Does the patient have more than one quadrant with broken and missing teeth?
- 3. Does the patient have more than one quadrant with heavy plaque or calculus and inflamed gums?

If you checked the box for more than two of the above questions, the patient is most likely having oral health care needs that would make him or her a good candidate to receive comprehensive oral care in conjunction with SUD treatment.

Additional Notes:

-
- Is the patient interested in participating in a study where he or she would receive no-cost dental care from a third- or fourth-year dental student at the University of Pittsburgh School of Dental Medicine under the supervision of a licensed dentist?
(check box if patient's answer is yes)

Appendix B Participant Survey

Date: _____

Please circle when this survey is being completed: **Intake** **Discharge**

1. What is your primary drug of choice for which you are receiving treatment?

- a. Heroin
- b. Methamphetamine
- c. Alcohol
- d. Marijuana
- e. Other (Please list) _____

2.Are you currently employed?

- a. Yes, full-time employment
- b. Yes, part-time employment
- c. No

3.Are you currently experiencing homelessness?

- a. Yes
- b. No

4.How would you describe the health of your teeth and mouth?

- a. Excellent
- b. Good
- c. Average
- d. Poor

5. Do you currently have any pain in your mouth?

- a. Yes
- b. No

6. Are your teeth sensitive to any of the following? (please circle all that apply):

- a. Hot
- b. Cold
- c. Sweets
- d. Eating
- e. Chewing

7.Are you satisfied with the appearance of your teeth? (please circle)

1-----2-----3-----4-----5
 Not satisfied at all very satisfied

Please explain: _____

8. Is there anything about your oral health that prevents you from enjoying a good quality of life?

a. Yes

i. If yes, please explain: _____

b. No

9. Have you ever had trouble getting dental care in the past two years?

a. Yes

b. No

10. What is your biggest challenge you face getting dental care?

a. Cost of dental care

b. Transportation to dental care

c. Scheduling/availability

d. Potential lack of continuity of care (change of providers) or finding a dentist

e. Fear/anxiety of dental treatment

f. Other _____

11. Please rate your overall last dental experience(s): (please circle)

1-----2-----3-----4-----5

Not satisfied at all

very satisfied

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