

Oregon Health & Science University
School of Medicine

Scholarly Projects Final Report

Title *(Must match poster title; include key words in the title to improve electronic search capabilities.)*

An Evaluation of Physicians' Role in Reducing Resource Burden for Atraumatic Dental Pain in the OHSU
Emergency Department

Student Investigator's Name

Brandon Bartlett

Date of Submission *(mm/dd/yyyy)*

03/16/2023

Graduation Year

2023

Project Course *(Indicate whether the project was conducted in the Scholarly Projects Curriculum;
Physician Scientist Experience; Combined Degree Program [MD/MPH, MD/PhD]; or other course.)*

Scholarly Projects Curriculum

Co-Investigators *(Names, departments; institution if not OHSU)*

N/A

Mentor's Name

David Jones, MD, MBS, MCR

Mentor's Department

Department of Emergency Medicine

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Concentration Lead's Name

Lisa Silbert, MD

Project/Research Question

The purpose of this study is to determine the percentage of patients who are uninsured or have public health insurance (OHP, Medicare, and/or Medicaid) seen in the OHSU ED for atraumatic dental pain that receive information about free/low cost community dental care resources in their after visit summaries upon discharge. We hypothesize that less than 50% of these patients receive information about free/low cost community dental resources in their after visit summaries. Our objective is to determine a baseline understanding of how many of these patients are given dental resources upon discharge that can be used in a future project to provide education to OHSU ED physicians about free/low cost community dental resources.

Type of Project *(Best description of your project; e.g., research study, quality improvement project, engineering project, etc.)*

Research study and quality improvement project

Key words *(4-10 words describing key aspects of your project)*

Emergency medicine, atraumatic dental pain, underinsured

Meeting Presentations

If your project was presented at a meeting besides the OHSU Capstone, please provide the meeting(s) name, location, date, and presentation format below (poster vs. podium presentation or other).

None

Publications *(Abstract, article, other)*

If your project was published, please provide reference(s) below in JAMA style.

None

Submission to Archive

Final reports will be archived in a central library to benefit other students and colleagues. Describe any restrictions below (e.g., hold until publication of article on a specific date).

None

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Next Steps

What are possible next steps that would build upon the results of this project? Could any data or tools resulting from the project have the potential to be used to answer new research questions by future medical students?

This study provides data that can be used in future projects aimed at improving provider communication of low-cost/free community dental resources and whether or not any changes made reduce future atraumatic dental pain ED visits.

Please follow the link below and complete the archival process for your Project in addition to submitting your final report.

https://ohsu.ca1.qualtrics.com/jfe/form/SV_3Is2z8V0goKiHZP

Student's Signature/Date *(Electronic signatures on this form are acceptable.)*

This report describes work that I conducted in the Scholarly Projects Curriculum or alternative academic program at the OHSU School of Medicine. By typing my signature below, I attest to its authenticity and originality and agree to submit it to the Archive.

X

Student's full name

Mentor's Approval *(Signature/date)*

X

Mentor Name

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Report: Information in the report should be consistent with the poster, but could include additional material. Insert text in the following sections targeting 1500-3000 words overall; include key figures and tables. Use Calibri 11-point font, single spaced and 1-inch margin; follow JAMA style conventions as detailed in the full instructions.

Introduction (≥250 words)

It has been repeatedly shown that ED dental pain visits comprise a significant amount of total ED visits annually and have a costly impact on the healthcare system as a whole (1,2,3,4). Treating dental pain in the ED is often limited to pain control and infection treatment, which are usually sequelae related to a more fundamental dental problem not well addressed in the ED setting (1,2,5). Because of this, repeat visits for recurrent dental problems are common and place a large burden on ED resources better used for treating emergent and life-threatening problems (3,4). This becomes a significant public health issue due to the inability of EDs to treat the underlying problem and the disproportionate impact on uninsured and publicly insured patients (1,2,4). This can be extremely stressful for patients who feel that the system is failing them, and it essentially is. It is essential that we identify gaps in our healthcare system that contribute to this problem and starting at the foundation is important in doing this. By identifying a knowledge gap in physicians' community resource understanding, we can establish an educational solution to improve community resource utilization. There is a body of research addressing the problems with atraumatic dental pain visits and their impact on the ED system (1,2,3,4). However, to our knowledge, there don't appear to be any studies examining the rate that community resources were provided to patients following ED visits for atraumatic dental pain. This study aims to investigate this question and may provide a foundation for correction of the deficit.

Methods (≥250 words)

This was a retrospective study reviewing adult patient charts (aged 19-89 years) in EPIC based on OHSU ED visits related to atraumatic dental pain during the years 2019 and 2020. Patients were identified using OCTRI cohort discovery, which is an NIH-funded resource that provides patient populations using chosen inclusion and exclusion criteria. The inclusion criteria included adult patients diagnosed in the OHSU ED with atraumatic dental pain from 2019 to 2020. Patients were identified by the following ICD-10 diagnostic codes: K00-K07 and K12.2. The exclusion criteria included patients who had been seen following dental surgery as well as those who had been diagnosed with the following ICD-10 diagnostic codes: K08.1/2, K03.1, K08.11, K08.41, and K08.53. Following the identification of patients meeting the ICD-10 diagnostic criteria, insurance status was determined and a review of the after-visit summary (AVS) was completed to determine whether or not they were given any type of written information regarding low-cost/free community dental resources. The OHSU ED providers have access to a pre-existing EPIC dot phrase that contains an extensive list detailing low-cost/free community dental resources in the greater Portland area. The list contains information for the Russel Street Clinic, Multnomah County Health Department, OHSU school of dentistry clinic, mobile dental vans, and multiple other community resources. This list, as well as any mention of one or more community resources in the AVS was considered a "yes" in determining whether patients received written information. Analysis of the data included separating patients by the year they were seen (2019 vs. 2020), type of insurance, and determining the percentage of patients who received written resources in their AVS vs. those who did not. Additional analysis was done to determine the total percentage of all patients, regardless of insurance status, who received written resources in their AVS in the years 2019 and 2020.

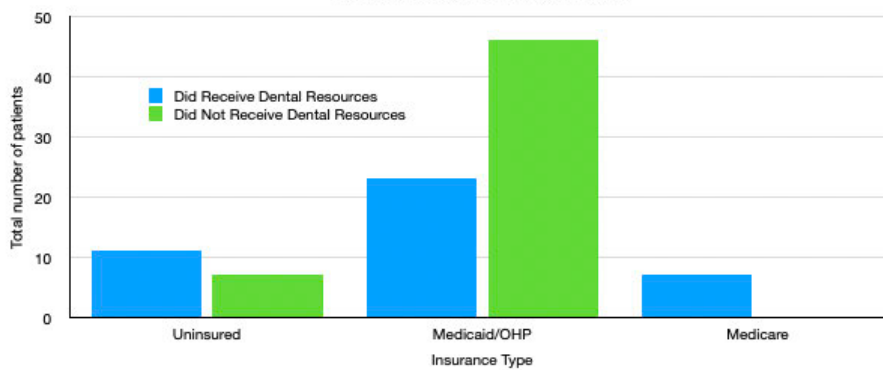
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Results (≥500 words)

A total of 177 patients met all of the inclusion and exclusion criteria and thus were included in the final data analysis.

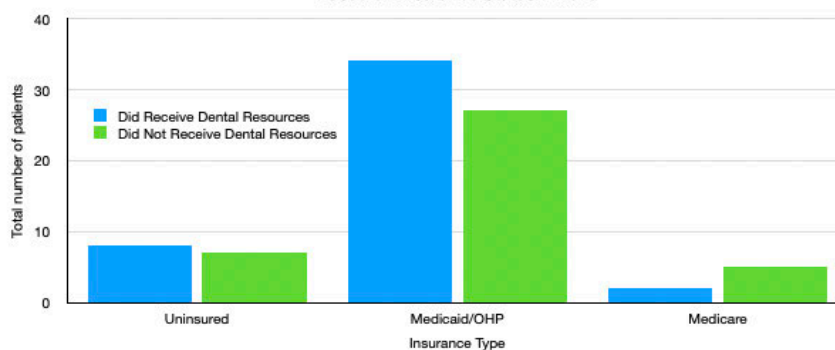
In the year 2019, there were a total number of 94 patients seen in the OHSU ED included in this study. Of those 94 patients, a total of 7 patients had Medicare insurance and all of them received AVS written resources. There were 69 patients with Medicaid insurance and of those 23 received AVS written resources (46 patients did not). There were 18 patients who did not have any documented insurance on file and 11 of those received AVS written resources (7 patients did not). In total, in the year 2019, 44% (41/94) of patients received AVS written resources while the remaining 56% (53/94) did not.

Figure 1. Total Number of Patients Who Did and Did Not Receive Dental Resources in Their AVS Based on Insurance Status in 2019



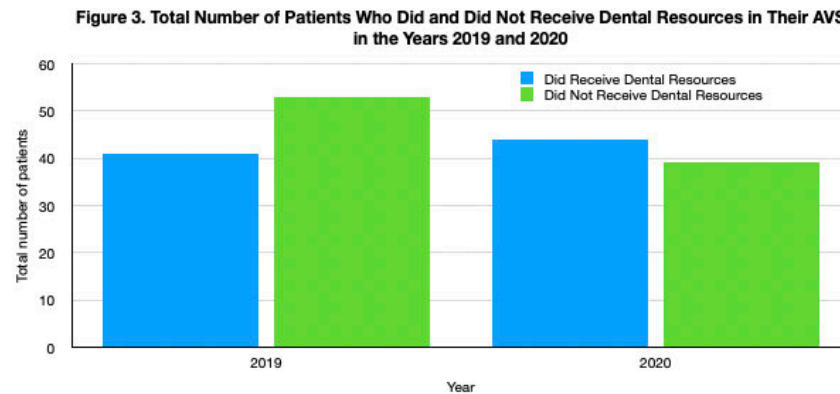
In the year 2020, there were a total number of 83 patients seen in the OHSU ED included in this study. Grouped by insurance status, 7 of those patients had Medicare insurance, 61 had Medicaid insurance, and 15 had no documented insurance on file. In the Medicare group, 2 out of the 7 patients received AVS written resources. In the Medicaid group, 34 out of the 61 patients received AVS written resources. In the no-insurance group, 8 out of the 15 patients received AVS written resources. In the year 2020, regardless of insurance status, 53% (44/83) of patients received AVS written resources whereas 47% (39/83) of patients did not.

Figure 2. Total Number of Patients Who Did and Did Not Receive Dental Resources in Their AVS Based on Insurance Status in 2020



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When looking at all 177 patients during the 2019 and 2020 years, regardless of insurance status, more than half (92/177) did not receive written information regarding low-cost/free community dental resources in their after-visit summaries.



Discussion (≥500 words)

In the current healthcare setting, the goal should be to ensure that patients are seeking care in the appropriate setting not only to ensure the best care possible but also to reduce unnecessary recurrent visits and resource burden. In Oregon, it has been reported that approximately 2% of all ED visits are related to atraumatic dental complaints (12th most common discharge diagnosis) with a majority being those who had either public insurance or no insurance (1). Of these visits, it has also been reported that more than one-fourth of patients had a repeat visit for similar complaints within one year of the initial visit (1). Currently, in the OHSU ED, providers have access to an EPIC dot phrase containing a comprehensive list of low-cost/free community dental resources that can be given to patients in their AVS at the end of the visit. The goal of this study was to identify one potential area for improvement (i.e. patients not receiving written information about low-cost/free community dental resources) that might possibly be contributing to high rates of visits in the OHSU ED for atraumatic dental pain in underinsured populations.

We found that in the year 2019, only 41 of the 94 (44%) patients received information regarding low-cost/free community dental resources in their AVS. The following year, we found that 44 out of the 83 patients (53%) received information regarding low-cost/free community dental resources. In total, including both the years 2019 and 2020, more than half of the patients in this study (92/177) did not receive written resources in their AVS at the end of their visit. These results show that over half of the time, there is some barrier that is preventing the dissemination of resources and information that could potentially be used by patients to access more appropriate care and possibly reduce future visits for similar dental complaints. However, it is not yet clear what barriers those may be. It is possible that both high levels of workload in the OHSU ED, as well as time constraints, could be contributing. Another possibility is a lack of knowledge of available community dental resources and/or a lack of knowledge about the available EPIC dot phrase which may also be a contributing factor in patients not receiving written resources in their AVS. Whether it be one of the above barriers or other unknown barriers (or a combination of multiple), this study provides a baseline for future projects aimed at improving provider-patient communication of low-cost/free community dental resources to disenfranchised patients. As it

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stands, it is not known whether the rate of visits is even affected by receiving written AVS resources, so future projects should aim to address this question. The goal of future projects could be to implement an educational resource for providers about the available community resources as well as the pre-made EPIC dot phrase and whether or not that reduces future atraumatic dental pain visits.

Due to the fact that this study only looked at patients being seen in the OHSU ED, these results are limited in regard to patients being seen outside of OHSU in the greater Portland area. Another limitation of this study is the use of ICD-10 diagnostic inclusion criteria. While we attempted to include a broad range of commonly used diagnoses in our inclusion criteria, it is possible that some providers used an ICD-10 diagnostic code that was not included in our criteria for a patient that would have otherwise been included in this study.

Conclusions (2-3 summary sentences)

Over half of the patients in this study (52%) did not receive written resources in their AVS regarding low-cost/free community dental resources, which may play a role in repeat visits and the resource burden placed on the OHSU ED. These results identify a possible area for improvement in patient-provider communication that could potentially lower future atraumatic dental pain visits in the OHSU ED and provide a more appropriate avenue for disenfranchised patients to seek dental care in the community.

References (JAMA style format)

1. Sun B, & Chi DL. (2014). Emergency department visits for non-traumatic dental problems in Oregon State. Report to the Oregon Oral Health Funders Collaborative.
2. Sun B, Chi DL, Schwarz E, Milgrom P, Yagapen A, Malveau S, Chen Z, Chan B, Danner S, Owen E, Morton V, & Lowe RA. (2015). Emergency department visits for nontraumatic dental problems: a mixed-methods study. *American Journal of Public Health*, 105(5), 947–955. <https://doi.org/10.2105/AJPH.2014.302398>
3. Singhal S, Quiñonez C, Manson H. Visits for Nontraumatic Dental Conditions in Ontario's Health Care System. *JDR Clin Trans Res*. 2019 Jan;4(1):86-95. doi: 10.1177/2380084418801273. Epub 2018 Sep 20. PMID: 30931760.
4. Singhal S, McLaren L, Quinonez C. Trends in emergency department visits for nontraumatic dental conditions in Ontario from 2006 to 2014. *Can J Public Health*. 2017 May;108(3):e246-e250. doi: 10.17269/CJPH.108.5950. Epub 2017 Dec
5. Roberts RM, Hersh AL, Shapiro DJ, Fleming-Dutra KE, Hicks LA. Antibiotic Prescriptions Associated With Dental-Related Emergency Department Visits. *Ann Emerg Med*. 2019 Jul;74(1):45-49. doi: 10.1016/j.annemergmed.2018.09.019. Epub 2018 Nov 2. PMID: 30392733; PMCID: PMC6943909.