



ADVANCING ORAL HEALTH IN KANSAS: THE IMPACT OF APPLIED PRACTICAL EXPERIENCE AT THE BUREAU OF ORAL HEALTH

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Kansas Department of Health and Environment (KDHE)
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About Me

- Originally from Maharashtra, India
- Received my Bachelor's of Dental Surgery (BDS) from Maharashtra University of Health Sciences (MUHS) in 2019
- Completed Dental Clinical Internship of 1 year in 2020
- Began Master's in Public Health (MPH) at Kansas State University in the Fall of 2021
- Began planning my MPH project in the Fall of 2022
- APE: January 17, 2023- April 17, 2023



Photo by Snehal Gawhale taken in Dhule, Maharashtra on November 20, 2018

Overview

- Oral Health
- Oral Health Equity
- The Bureau of Oral Health
- School Screening Program
- APE Projects and Experience
- MPH Competencies



(Pornchanan, 2009) [The 5th Asian Conference on Oral Health Promotion for School Children to be held in Phuket - Phuket News and Scoop \(phuketindex.com\)](#)

Oral Health

- What is Oral health?
- Psychosocial aspects
- Poor Oral Health can reduce the quality of life

Good oral health

is essential in our daily lives, from



eating



breathing



speaking

It contributes to our
overall health and well-being
and gives us confidence
in interacting with others

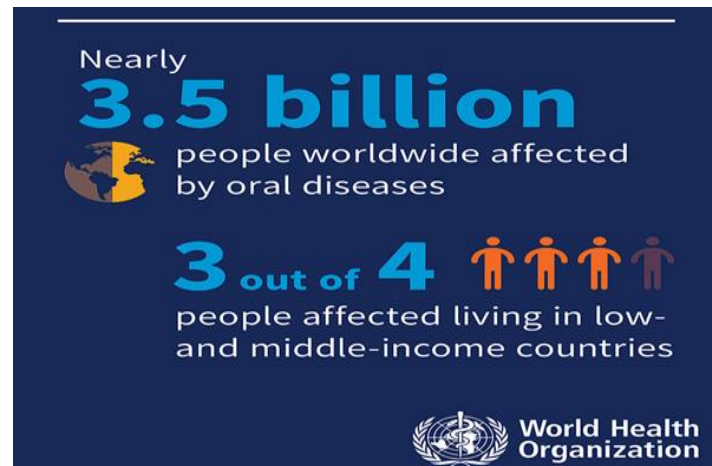


World Health
Organization

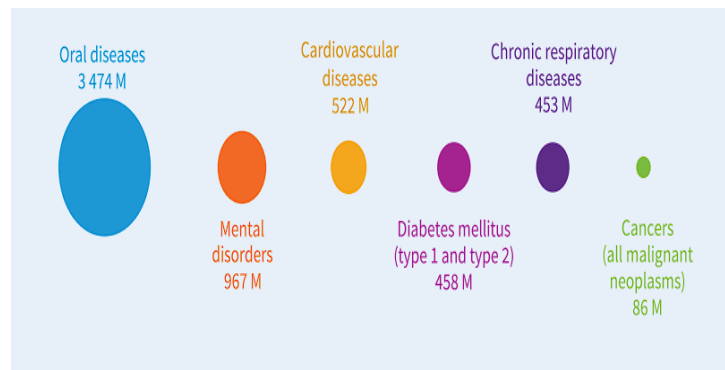
(World Health Organization: WHO, 2019) https://www.who.int/health-topics/oral-health/#tab=tab_1

Oral Health

- Oral Health is crucial throughout life
- Oral diseases affect 3.5 billion people worldwide
- Global burden of oral health conditions
- Highest number of cases globally



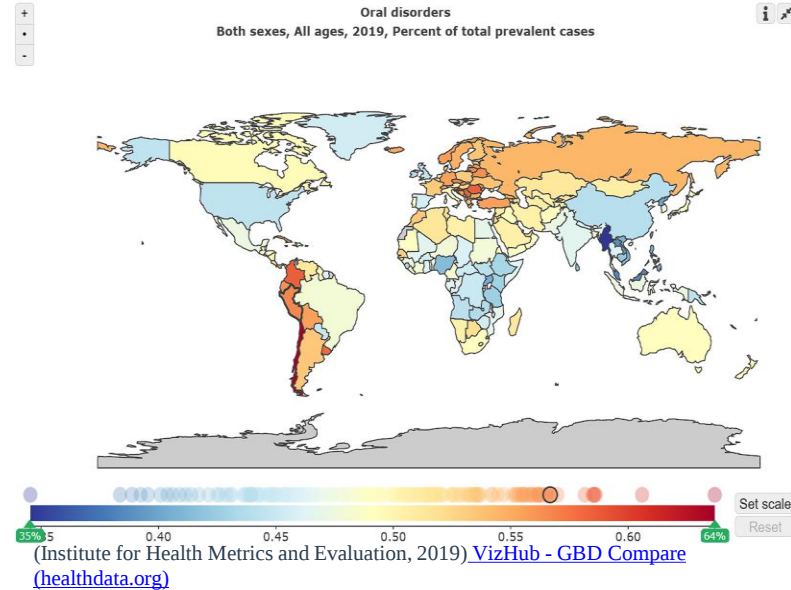
(Three Quarters of Those Affected by Oral Diseases Live in Middle Income Countries, n.d.) [Three quarters of those affected by oral diseases live in middle income countries \(who.int\)](#)



(Global Oral Health Status Report: Towards Universal Health Coverage for Oral Health by 2030, n.d.)

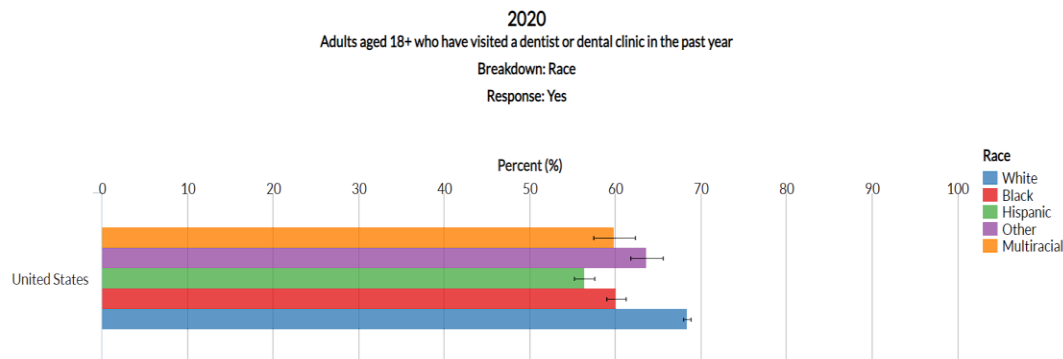
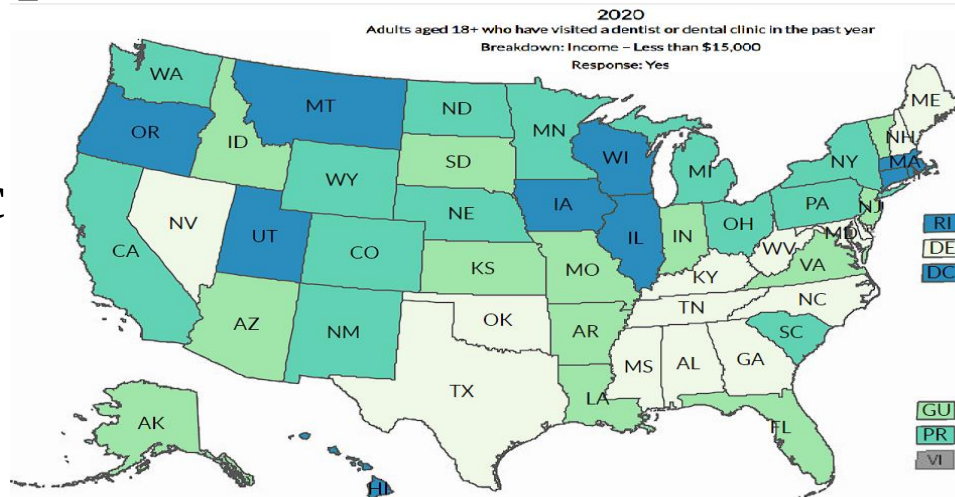
Oral Health Equity

- Oral Health outcomes are not distributed equally
- United States compared to other countries
- In the United States, a greater risk of poor oral health is experienced by:
 - Low-income
 - Racial/Ethnic minority
 - Uninsured
 - Immigrants
 - Rural populations with limited access to quality oral healthcare



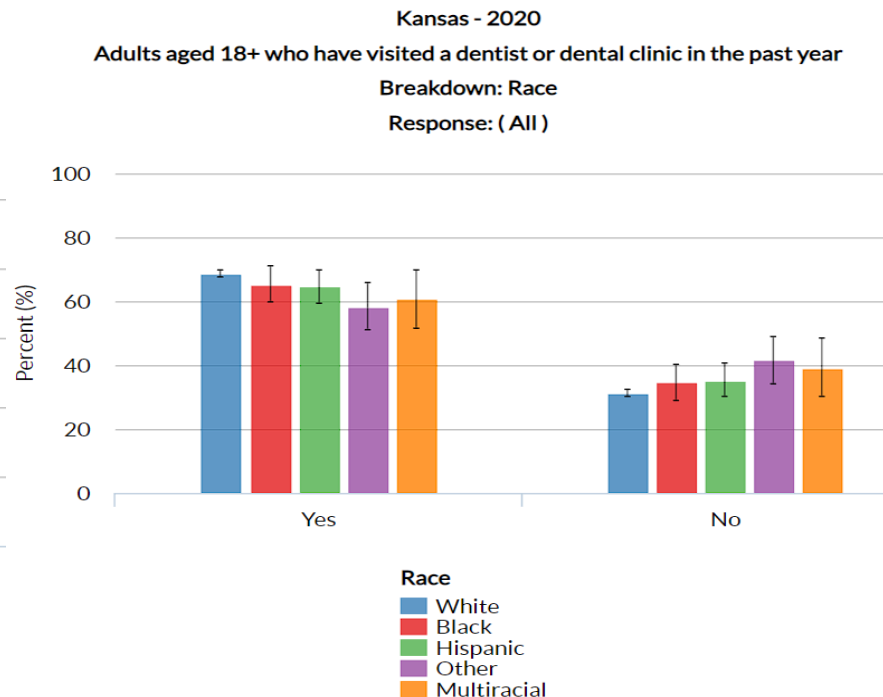
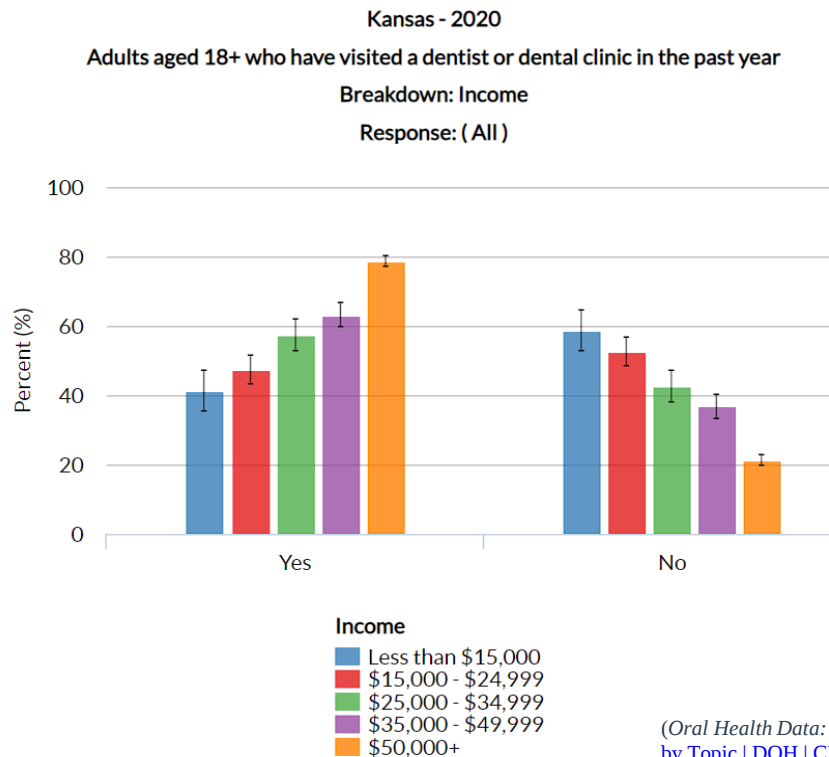
Oral Health Disparities in the United States

- Low-income
- Racial/ethnic minority
- Uninsured
- Immigrant
- Rural populations with limited access to quality oral healthcare



Oral Health Disparities in Kansas

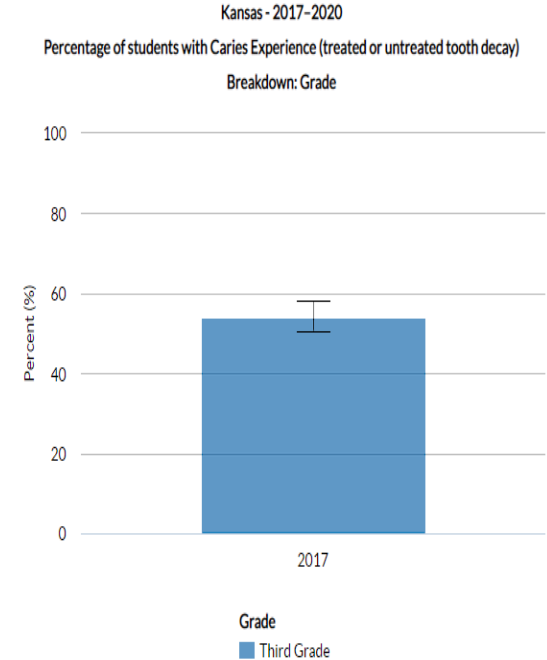
- There are significant Socioeconomic disparities in Kansas



(Oral Health Data: Explore by Topic | DOH | CDC, n.d.) [Oral Health Data: Explore by Topic | DOH | CDC](#)

Oral Health Disparities in Kansas (Children)

- Children in Kansas' lower-income schools have a significantly higher prevalence of tooth decay and untreated decay compared to higher-income schools
- 18% of Kansas' kindergarten children have untreated tooth decay, higher than the national average of 15%
- 55% of Kansas' third-grade children have at least one tooth with decay experience



(Oral Health Data: Explore by Location | DOH | CDC, n.d.) [Oral Health Data](#) | [Division of Oral Health](#) | [CDC](#)

The Bureau of Oral Health

- Located within the KDHE headquarters in Topeka, Kansas
- State-level Public Health Division
- Increase awareness and improve the oral health of all Kansans through:
 - Development of an Evidence-based Oral Health Policy
 - Oral Health Data Collection and Dissemination
 - Programming Dedicated to Dental Disease Prevention
 - Statewide Oral Health Education
- Programs and Initiatives



Division of
Public Health



(Oral Health | KDHE, KS, n.d.) [Oral Health | KDHE, KS](#)

School Screening Program

- **Better Oral Health for All Kansas Children**
- Dental screenings at local communities
- Results are sent home
- Children are referred to dental professionals
- Aggregated data is sent to the BOH
- Over 100,000 children from pre-K to Grade 12 are being screened annually



(School Screening Program |
KDHE, KS, n.d.) [School
Screening Program | KDHE, KS](#)

Importance of Screenings in Schools

- Dental Screenings:
 - Identify potential issues before symptomatic disease onset
 - Prevent pain and tooth loss
 - Prevent the need for more invasive and costly procedures
 - Identify children with dental anxiety
 - Educate children and families on good oral hygiene habits
- Dental screenings can provide an important first step



(School Screening Program |
KDHE, KS, n.d.) [School
Screening Program | KDHE, KS](#)

The seal of Kansas State University is partially visible on the left side of the slide. It features a circular design with the words "KANSAS STATE UNIVERSITY" and the year "1863" around the perimeter.

Learning Objectives

- Gain comprehensive knowledge and understanding of the epidemiology of Oral Health, current research, and disease surveillance
- Develop effective communication skills that can translate complex ideas and data into clear, concise language to help inform program decisions
- Present and report outcomes using various formats such as technical reports, presentations, or publications

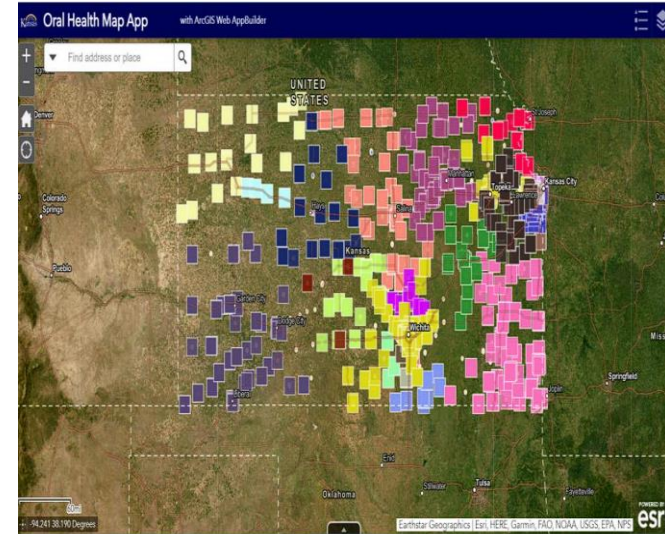


APE Projects based on School Screening Program

- Comprehensive Layered Map of Schools and Dental Screeners
- White Paper
- Article for Oral Health Newsletter
- Trifold for the Kansas Mission of Mercy Event (KMOM)

1. Layered Map

- The Map consists of Public and Private K-12 schools and Dental Screeners throughout Kansas
- Displays the distribution of oral health screening services in the schools
- Identify areas where access may be limited
- Provides information regarding the availability of oral health screening services in schools of the state



(ArcGIS Web Application, n.d.) [Oral Health Map \(arcgis.com\)](https://arcgis.com)

Methods

- Accessed the KSOH Portal and downloaded the data
- Created a project in Google Cloud
- Performed geocoding in R Studio
- Created a map in the ArcGIS application
- Made the map available to the Public



Welcome to Kansas Oral Health (KSOH)

```
1 library(readex)
2 library(readxl)
3 library(ggmap)
4 library(openxlsx)
5 register_google("AIzaSyBQzAczjPITeP-DguTt02ZDmJ0wSe-20E")
6 data <- readxl::read_excel("*****", sheet = "Sheet1")
7 geocoded <- geocode(data$`Address of school`)
8 geocoded_data <- cbind(data, lon = geocoded$lon, lat = geocoded$lat)
9 write.xlsx(geocoded_data, file = "*****", rowNames = FALSE)
```

<https://kchap2.kdhe.state.ks.us/Public/KSOH/default.aspx>

Features of the Map

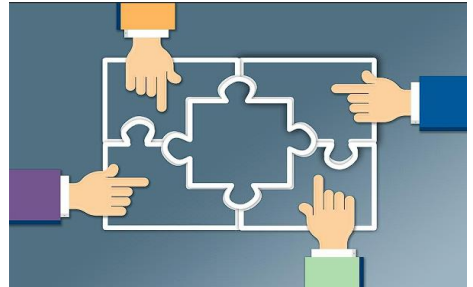
- Oral Health Map App displays the state of Kansas
- The color blocks and dots represent different types of screeners and schools respectively
- Each colored block can be clicked on to reveal additional information
- <https://kdhe.maps.arcgis.com/apps/webappviewer/index.html?id=5baa3a53501e458b9e4af589598c8a56>

Uses of Map

- Resource for school administrators
- Data visualization tool
- Planning tool for public health professionals
- Public information tool
- Evaluation tool
- Collaboration tool
- Resource for parents and caregivers
- Tool for identifying disparities
- Resource for dental professionals



(Services, 2017)



(Martin, 2017)



(Resources for Parents
and Caregivers - King
County, 2021)

2. White Paper

- Proposes statutory changes to increase the number of trained school-based healthcare staff who can perform dental screenings
- Increase access to dental screening services in schools
- This modification aims to bring the Act in line with other health-related screenings
- The overall goal is to promote better oral health outcomes for students by increasing access to dental screening services

Smiling Brighter: Enhancing School Dental Health Programs for Kansas Children through Expanded Dental Screenings

WHITE PAPER



Bureau of Oral Health

Kansas Department of Health and Environment

Kansas State Statute

- Kansas State Statute 72-6251
- Current provisions of K.S.A. 72-6252
- No funding is available to reimburse Dentists or Dental Hygienists for screening service
- Screening is conducted on a volunteer basis leading to inconsistencies in availability and quality of care

72-6251

Chapter 72 - SCHOOLS

Article 62 - STUDENT HEALTH

Sections 51 - 53

THE KANSAS STATUTE FOR ANNUAL FREE DENTAL INSPECTION (K.S.A.72-6251) was initially established in 1915, revised in 1923 and recoded in 2017. This statute states:

“Annual free dental inspection; exceptions. The boards of education of cities of the first and second class and school boards of school districts are hereby required to provide for free dental inspection annually for all children, except those who hold a certificate from a legally qualified dentist showing that this examination has been made within three months last past, attending such schools.”

History: L.1915, ch. 308, § 2; L. 1919, ch. 263 § 1 June 17; R.S. 1923, 17-5201. Recoded 2017.

Source or Prior Law: 72-5201.

BOH Recommendation

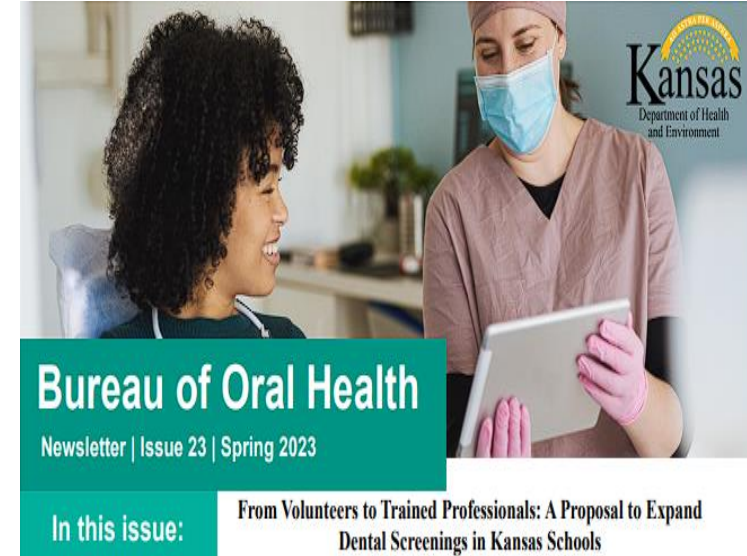
- BOH is proposing statutory changes to increase the number of trained school-based healthcare staff who can perform dental screenings to ensure that every child in Kansas schools has access to this crucial service
- To achieve this objective, the Board of Education will be permitted to assign trained school healthcare personnel, such as school nurses, to carry out the screening
- BOH staff can assist schools with setting up screenings and recruiting screeners

Impact of Change

- Feasibility Assessment
- Financial Implications
- Stakeholder Impact
- Potential Issues & Strategies

3. Article for the Oral Health Newsletter

- The newsletter article focuses on the proposed statutory changes
- Serves the purpose of informing and educating the readers about the proposed changes and the importance of oral health
- BOH aims to raise awareness about the need for increased access to dental screenings in schools
- Essential part of the BOH's public health promotion initiatives
- <https://www.kdhe.ks.gov/DocumentCenter/View/5174/Current-Oral-Health-Newsletter-PDF>



(To Protect and Improve the Health and Environment of All Kansans, n.d.)

4. Trifold

Better Oral Health for All Kansas Children

Screening Program

The Bureau of Oral Health has implemented a statewide oral health screening program to satisfy The Kansas State Statute for Annual Dental Inspection (K.S.A. 72-6251)

Dentists and dental hygienists in Kansas are providing dental screenings in their own local communities with school nurses sending the results home to parents and guardians. Over a hundred thousand children from pre-K to Grade 12, are being screened annually across Kansas. School nurses send the aggregated data to the Bureau of Oral Health and it is included in our annual reports.



2023

Kansas School Oral Health Screening Initiative

Kansas Department of
Health and
Environment

School nurses express much appreciation and are thrilled the children are being screened; parents are informed of obvious dental concerns, and children are referred to dental professionals for obvious care needed.

**Get
Involved!**

kboh@ks.gov



Sample Contract

In order to achieve the mutual goal of completing oral health school screenings, both parties agree to the following:

- 1. The purpose of this contract is to increase the number of school age children who have received an oral health screening during this school year.
- 2. The goal of the Contract is to be attained within the constraints of available resources including funds available through the Centers for Disease Control and Prevention Cooperative Agreement.
- 3. Total reimbursement under this contract will not exceed \$4500 (\$300 per school screened).
- 4. This Contract will become effective after the signatures are affixed by the representatives of both parties.
- 5. The duration of this contract is for a period beginning Jan 1, 2022 and ending May 30th, 2022.
- 6. The Contract, including attachments, may be amended as necessary. Such amendments shall be in writing and duly executed by both parties.
- 7. Binding Appendices. The provisions found in Appendix A, (Contractual Provisions Attachment [Form DA-146a, Rev. 07-19]), Appendix B, (Whistleblower and Non-Debarment Certification), Appendix C, (Agreement to Comply with the Policy Against Sexual Harassment, Discrimination, and Retaliation) which are attached hereto, are hereby incorporated in this Agreement and made a part thereof.
- 8. This Agreement is contingent upon the availability of state or federal funds and may be terminated by thirty (30) day advance written notice by KDHE.

KDHE Agrees:

- 1.To provide (insert name of screener here) with \$300 per school screened. Funds will be released after completion of each school screened on an on-going basis until the end of this contract period.
- 2.To provide (insert name of screener here) with necessary supplies to complete oral screenings (gloves, tongue blades, masks, hand sanitizer, and toothpicks).

Screener Agrees:

- 1.To provide verification of basic screening survey calibration online training prior to completion of initial school screening.
- 2.To complete oral screenings at sites assigned by KDHE.
- 3.To provide oral screenings to children in schools according to basic screening survey protocol.
- 4.To attend or be available (via phone or email) for meetings upon the request of KDHE should the need arise. Communications either by email or phone should be responded to within 2 business days.
- 5.If screener is unable to continue providing screenings during the grant period for any reason, she must notify KDHE as soon as this is evident.

MPH Foundational Competencies

2. Select quantitative and qualitative data collection methods appropriate for a given public health context

3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate

11. Select methods to evaluate public health programs

13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes

15. Evaluate policies for their impact on public health and health equity

MPH Foundational Competencies Attainment

2	Select quantitative and qualitative data collection methods appropriate for a given public health context	In the creation of a map, for identifying the location and distribution of public and private K-12 schools and dental screeners, it was necessary to select relevant data sources for analysis and mapping.
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- To identify the location and distribution of public and private K-12 schools and dental screeners, it was necessary to select relevant data sources for analysis and mapping.
- The data used for the map was obtained from the Kansas Oral Health Portal (KSOH).

MPH Foundational Competencies Attainment

3	Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming, and software, as appropriate	Mapping schools and oral health screening services in Kansas using GIS and mapping techniques involves the use of computer-based programming and software.
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- The utilization of GIS and mapping techniques was essential in creating a MAP that identified the location and distribution of schools and dental screeners in Kansas
- The process involved using the R Studio Software and ArcGIS software to analyze both quantitative and qualitative data related to oral health access in the state

MPH Foundational Competencies Attainment

11	Select methods to evaluate public health programs	By including relevant information about BOH and the sample contract, the trifold helped in communicating the goals and objectives of the public health program. The trifold was useful in tracking attendance at the event and gathering feedback from participants, which was useful to evaluate the success of the program.
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- The use of a Trifold Brochure for the KMOM Event to promote and evaluate a public health program was an effective approach.
- The brochure provided relevant information about the program, including details about the BOH and the sample contract, which helped in communicating the goals and objectives of the BOH to potential participants
- Served as a useful tool for tracking attendance at the event and gathering feedback from participants

MPH Foundational Competencies Attainment

13	Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes	By proposing specific strategies to address the issue of limited access to dental screening services, the white paper serves as a tool for building coalitions and partnerships with policymakers, school administrators, dentists, public health personnel, and community members to achieve better oral health outcomes for Kansas students.
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- The White paper proposed strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes related to oral health
- The paper highlighted the importance of engaging policymakers, school administrators, dentists, public health personnel, and community members to achieve better oral health outcomes

MPH Foundational Competencies Attainment

15	Evaluate policies for their impact on public health and health equity	By highlighting the limited availability and resources of dental screening services in schools, the white paper identifies a policy gap that needs to be addressed to improve oral health outcomes for students. The proposed amendment is evaluated as a strategy to increase access to oral healthcare services for students, which can ultimately lead to better oral health outcomes and reduced health disparities.
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- The paper highlights the lack of availability and resources for such services, which can have a negative impact on the oral health outcomes of students, particularly those from marginalized communities
- By evaluating the current policies, the white paper identifies a policy gap that needs to be addressed to improve oral health outcomes for students

Acknowledgment

Supervisory Committee

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MPH Program

Dr. Ellyn Mulcahy (Program Director)

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Director of the BOH

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Family and Friends



Thank You
Questions?

References

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