



Michigan Oral Health Project for the Aging (Michigan Senior Smile Survey Region 1a/2)

Oral Health Project Focused on the Aging

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Introduction

The number of Michigan residents aged 65 years and older continues to increase each year. In 2010, there were 1,361,530 in this age group, comprising 14% of the population. This proportion is expected to increase to 19.5% in 2030, which means an estimated number of 2,081,000 Michigan adults aged 65 or older.¹

According to the Centers for Disease Control and Prevention “... oral health means much more than healthy teeth, and is integral to the general health and well-being of all Americans. Oral health must be included in the provision of health care and design of community programs.”² Due to advancement in preventive measures over the decades, such as community water fluoridation, dental sealants, and an abundance of knowledge on how to prevent dental disease, as time goes on it cannot be assumed that the aging populations are fully edentulous or will become edentulous.

In 1945, community water fluoridation began in Grand Rapids, Michigan in time to benefit many of Michigan’s Baby Boomers (born between 1946-1964). Due to less decay, this population has more of their natural dentition than earlier generations. The number of Michigan adults in need of oral care will only increase as the number of adults over 65 years of age increases to over 2 million people by 2030.

The aging population will have an elevated risk of poor oral health over the younger generation due to additional challenges, such as physical impairments preventing proper daily homecare, dry mouth due to prescription medications, and access issues stemming from financial and transportation barriers. The 2012 Michigan Behavioral Risk Factor Survey (BRFS) reported that 27.5% of those aged 65-74 years, and 29.4% of seniors aged 75 years and older had not visited a dentist or dental clinic within the past year. In addition, it was reported that 13.3% of those aged 65 and older had all of their natural teeth extracted. While the number of residents in this age group continues to grow, it is important to assess oral health status in order to determine which areas can be improved upon.

As this population continues to benefit from their natural dentition, there may be an increased cost associated with their oral healthcare delivery. It is important for Michigan policy makers to have a clear and sound understanding as it relates to the current oral health status of those 65 years of age and older to best tailor public health programs, workforce, and available funding to the healthcare system to appropriately provide the necessary preventive and oral health care.

The purpose of this report is to discuss the findings of an oral health senior screening project in two regions in Michigan focused on adults aged 65 and older.

Background

The spoken project is an extension of a former funded project, thus they will both be discussed in this report. The *Jackson County Senior Smile Survey (JCSSS)* was a pilot project that was funded by the National Association of Chronic Disease Directors in 2011. The project focused on identifying the best techniques to gather oral screening data from those aged 65 years and older in Jackson County. Obtaining the oral health data from the seniors living in Michigan is imperative to future strategic planning for the state, however, there are numerous barriers to conducting an open mouth survey for this population. Michigan attempted a statewide senior survey in 2010 and the survey was a challenge due to several issues. First of all, it was focused on long-term care facilities which proved to be a challenge to gain access into the facilities alone. When access was gained, it was often problematic to obtain permission from the resident or patient advocate to perform an oral health screening. Once permission was granted, often due to memory loss, it was extremely difficult to obtain a sound dental history for the participants. Due to these challenges, it was determined that the state would benefit from a pilot project focused specifically on what it takes for a significant statewide survey to be successful while screening this unique population.

The *JCSSS* pilot carefully examined a variety of different types of sites, incentives, and techniques to determine the most efficient and effective way to gather the data. Over an 18-month stretch between July, 2011 and January, 2013, 13 different sites were established for screening. Within 48 hours of a completed screening a meeting would take place between the screeners and project manager to carefully examine the evaluations and details of the screening. The lessons learned would eventually be compiled to achieve future successful senior screenings.

Jackson County, in 2011, was selected as the pilot site due to its large community network of support services offered to senior citizens including Smiles on Wheels (SOW). Jackson has over 30 local Area Agencies on Aging (AAA), congregate meal sites (CMS), and assisted living facilities (ALF) in Michigan. Jackson County publishes a yearly guide called “Senior Preferences”, a quarterly newsletter, and a monthly newsletter to market opportunities for senior citizens. SOW is a non-profit 501(c)(3) organization which has a long standing history of increasing access to oral health. SOW began in 2006 and is staffed with Registered Dental Hygienists who operate their program under the Public Act 161 (PA 161) status and one Project Coordinator. This PA 161 program allows a hygienist to practice under relaxed supervision on underserved populations. SOW delivers services within long term care facilities, has obtained donated clinic space within the Jackson Health Department, has coordinated a successful school-based dental sealant and varnish program, and provides fluoride varnish to local Head-Start Programs. SOW has worked closely with the MDCH Oral Health Program since 2006 under

numerous grants. SOW is well known within Jackson County and has a working relationship with many of the AAA, CMS, and ALF locations. SOW has been very effective in coordinating oral health events.

The purpose of the *JCSSS* was to determine a sound foundation in which to launch a statewide senior survey in Michigan. Following the successful *JCSSS* pilot project, Michigan prepared to take the lessons learned and launch an open mouth senior screening to begin collecting data in two additional regions. A proposal was written again to the National Association of Chronic Disease Directors and funding was obtained to collect data in two regions in Michigan.

2013 Michigan Senior Smile Survey- Region 1a/2

The title of the project is referred to as the *Michigan Senior Smile Survey—Region 1a/2 (MSSS—R1a/2)*. The *JCSSS* and *MSSS-R1a/2* were both exclusively implemented by Smiles on Wheels. The grant supported a Basic Screening Survey (BSS), an “open mouth” survey of the elderly (persons ages 65 years or older) in local Area Agencies on Aging (AAA), congregate meal sites (CMS) and assisted living facilities (ALF) in two regions in Michigan—Detroit (Region 1a) and Hillsdale and Lenawee County (Region 2) (see Appendix A). Jackson County is also part of Region 2, however the data obtained from the *JCSSS* (N=192) had already been obtained via the *JCSSS* (discussed above) and the results were combined with Hillsdale and Lenawee Counties to complete and provide Region 2 data.

Region 1a and 2 were selected to be the first regions targeted due to the need per the results of the 2008 and 2010 Michigan Behavioral Risk Factor Survey (BRFS). The City of Detroit had the highest prevalence, 44.3%, of Michigan adults aged 65 years and older had not been to a dentist in the past year. Lenawee had the third highest prevalence with 37.8%. Hillsdale was chosen as a third and final screening location due to its need along with it being in the same Area on Aging Association (AAA) region with the Jackson County and Lenawee County.

Methods

The Association of State & Territorial Dental Directors (ASTDD) *Basic Screening Survey for Older Adults* tool kit, as well as lessons learned and documents developed from the *JCSSS*, were used for the data collection in the *MSSS-R1a/2* survey. In efforts to support state-to-state comparisons of older adults’ oral health status, Michigan utilized the screening forms that were developed by the ASTDD. In an effort to continue learning via evaluation throughout the project, the following surveys were administered:

- The *MSSS—R1a/2 Senior Smile Survey*: This survey was designed by the ASTDD, and is a series of 19 qualitative questions that asked the senior about their own oral health status, both currently and historically and is completed by the senior (see Appendix B).
- The *Sample Oral Health Screening Form #2 Recommended and Optional Indicators*: This survey was designed by the ASTDD, and served as the data collection tool for the open mouth survey and was completed by a calibrated Registered Dental Hygienist (see Appendix C).
- The *MSSS—R1/A2 Site Administrator Evaluation*: This survey was given to each specific site contact administrator; it offered feedback on how the screening flowed for their facility. This offered some internal feedback on how the screening might be more successful (see Appendix D).
- The *MSSS—R1a/2 Smiles on Wheels Survey*: This survey was completed by Smiles on Wheels, the team of hygienists and the assistant that was charged with planning and implementing the events. This is where they noted the specific logistics of the event (see Appendix E).

The screenings took place at a variety of facilities (see Table 1 and 2). Locations included congregate meal sites, faith-based organizations, senior living centers, and senior health fairs. The sites were initially contacted by SOW by telephone and/or e-mail to seek permission to set up an oral screening station and to coordinate a date. The sites were randomly selected according to availability, location, and dates. All screening sites were located within Hillsdale and Lenawee County or the City of Detroit, and they all offered the seniors a meal—thus making them all congregate meal sites. The same two registered dental hygienists and one assistant staffed all but three events. The additional three events were expected to be significant in size which required additional registered hygienists to be calibrated and utilized for the open mouth screens. SOW provided all of the equipment, except tables and chairs which were located within each facility.

The overall implementation of the both the *JCSSS and MSSS--R1a/2* projects were completed by SOW and managed by Jill Moore, RDH, BSDH, MHA, the Dental Sealant Coordinator of the MDCH Oral Health Program. All coordination was accomplished by SOW. The ASTDD tool kit was utilized closely throughout the duration of the project, and the State Office on Aging and local Areas on Aging also assisted when needed with resources and direction. The MDCH Epidemiologist, Beth Anderson, MPH, provided significant assistance with both projects (*JCSSS and MSSS—R1a/2*) in terms of data collection and analysis of results.

Each screening event was set up prior to senior arrival, and remained open until all seniors were screened, denied screening, or had left from the event. At all events, the *MSSS--R1a/2 County Senior Smile Survey* was completed before the open mouth screening. Once the written survey was completed the senior had an open mouth screening completed by a calibrated registered dental hygienist.

The surveys for the senior site coordinator and SOW were completed by the staff after the event was completed, and monthly meetings were held between the MDCH grant manager and SOW to review findings.

The surveys were administered as a paper-based tool and responses were collected on the paper surveys. Surveys were collected by the SOW assistant, and data-entry was performed using Survey Monkey to log data of all surveys by the SOW assistant. The data was then cleaned and analyzed by the MDCH epidemiologist using the statistical program SPSS.

Funding

An 18-month grant was provided by the National Association of Chronic Disease Directors for \$20,000 to support the *Michigan Oral Health Project for the Aging (MSSS--R1a/2)*. A request for funding was submitted to the Delta Dental Foundation of Michigan to expand into one additional region during this same grant period, however funding was not received.

Results

Between June, 2013 and October, 2014, 350 Michigan adults ages 65 years and older received an oral health screening in Region 1a (City of Detroit). Screenings were performed at eight different locations across the region with each event screening between 9 and 166 seniors. The types of facilities in Region 1a ranged from senior centers to health fairs and faith-based environments, Table 1.

Table 1. The 8 sites participating in the Region 1a Senior Smiles Survey by frequency of seniors screened and type of site.

Site	Number (%)	Type of Site
1	17 (4.9%)	Senior Center
2	9 (2.6%)	Senior Center
3	166 (47.4%)	Health Fair
4	67 (19.1%)	Senior Center
5	13 (3.7%)	Senior Center
6	20 (5.7%)	Faith-Based
7	35 (10.0%)	Senior Center
8	23 (6.6%)	Senior Center
Total	350 (100.0%)	

Between August, 2011 and October, 2014, 397 Michigan adults ages 65 years and older received an oral health screening in Region 2 (Hillsdale, Lenawee, and Jackson counties). Screening events were held in 21 different locations across the region and each served between 8 and 47 adults. Various sites were used in Region 2 such as malls, churches, senior centers and township halls, Table 2.

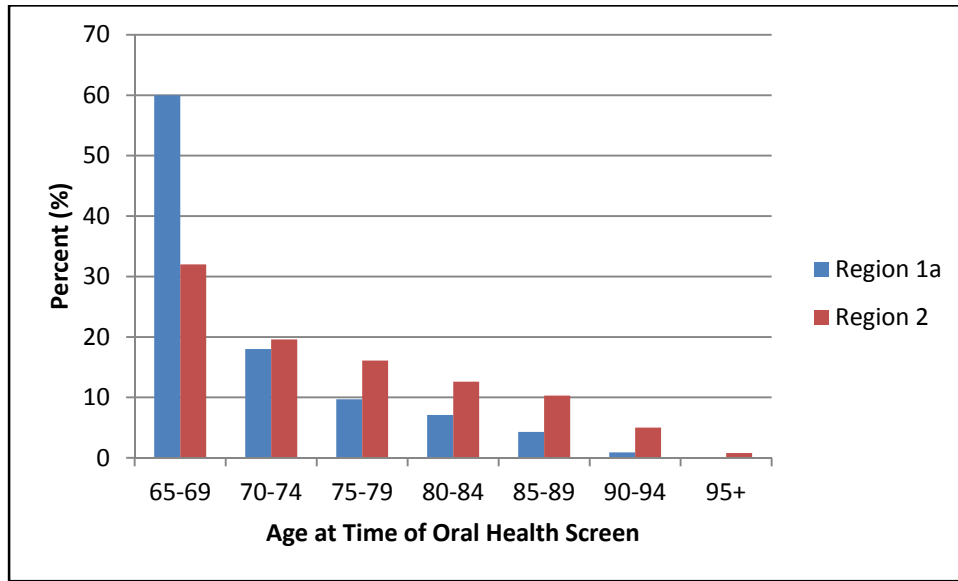
Table 2. The 21 sites participating in the Region 2 Senior Smiles Survey by frequency of seniors screened and type of site.

Site	Number (%)	Type of Site
1	10 (2.5%)	Mall—Senior Event
2	17 (4.3%)	Senior Center
3	15 (3.8%)	Faith-Based
4	24 (6.0%)	Assisted Living Senior Center
5	9 (2.3%)	Township Hall—Senior Meal Site
6	7 (1.8%)	Township Hall—Senior Meal Site
7	14 (3.5%)	Township Hall—Senior Meal Site
8	10 (2.5%)	Senior Center
9	15 (3.8%)	Faith-Based
10	12 (3.0%)	Faith-Based
11	30 (7.6%)	Mall-Senior Event
12	21 (5.3%)	Assisted Living Senior Center
13	8 (2.0%)	Senior Center
14	37 (9.3%)	Health Fair
15	13 (3.3%)	Community Center
16	13 (3.3%)	Senior Center
17	37 (9.3%)	Senior Center
18	16 (4.0%)	Township Hall—Senior Meal Site
19	28 (7.1%)	Health Fair
20	14 (3.5%)	Faith-Based
21	47 (11.8%)	Senior Center
Total	397 (100.0%)	

Screened Population Demographics

Of the 350 adults Region 1a screened, 12.3% were male and 87.7% were female and the average age was 71 years. Region 2 saw a population with an average age of 75 years with 27.5% male and 72.5% female. The most common age group among both regions was 65-69 years, Figure 1.

Figure 1. The age distribution of the screened seniors in Regions 1a and 2.



Region 1a served a racially diverse population that was different from the population in Region 2; however, the populations they served were representative of the population in their respective regions. The screened population in Region 1a was 93.1% black and 5.7% white, whereas, the screened population in Region 2 was 4.5% black and 93.7% white, Table 3 and 4.

Table 3. The racial distribution of screened seniors and the total population in Region 1a.

Race	Screened Seniors Ages	City of Detroit
	65+ years	All Ages*
White	5.7%	10.6%
Black	93.1%	82.7%
Asian	0.3%	1.1%
Hispanic	0.6%	6.8%
Multiracial	0.0%	2.2%

*US Census Bureau: State and County Quick Facts, 2010

Table 4. The racial distribution of screened seniors and the total population in Region 2.

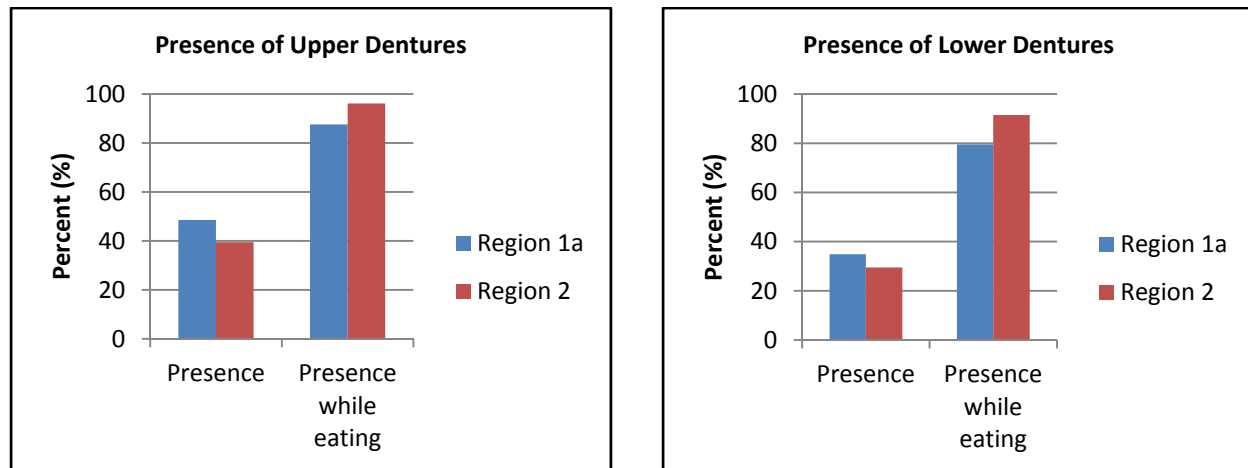
Race	Ages 65+	All Ages		
	Screened Seniors	Hillsdale County**	Lenawee County**	Jackson County**
White	93.7%	97.2%	94.2%	88.0%
Black	4.5%	0.6%	2.8%	8.3%
Asian	0.5%	0.4%	0.6%	0.8%
Hispanic	0.8%	2.1%	7.7%	3.2%
Multiracial	0.3%	1.3%	1.9%	2.5%

** US Census Bureau: State and County Quick Facts, 2013

Screening Results

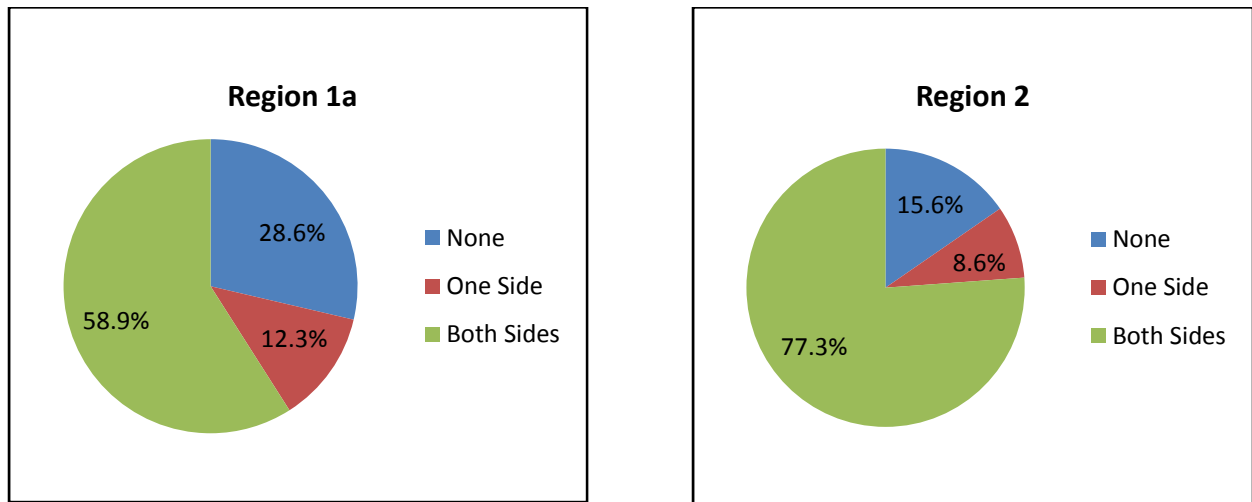
Dental hygienists performing the oral health screening completed a screening form that collected data on number of natural teeth, presence of dentures, and poor oral health conditions. Region 1a saw a higher prevalence of seniors with a presence of upper (48.6%) and lower (34.9%) dentures than Region 2 (39.5% and 29.5% respectively), Figure 2. However, the population in Region 2 was more likely to wear their dentures while they ate compared to Region 1a for both upper and lower dentures.

Figure 2. Percent of screened seniors with upper or lower removable dentures and percent that wear their dentures while they eat in Regions 1a and 2.



Almost 60% of the screened seniors in Region 1a had functional posterior occlusal contact on both sides of their mouth, 12.3% had it only on one side and 28.6% did not have it at all. Over three-quarters of the screened seniors in Region 2 had functional posterior occlusal contact on both sides of their mouth, 8.6% had it only on one side and 15.6% did not have it at all, Figure 3.

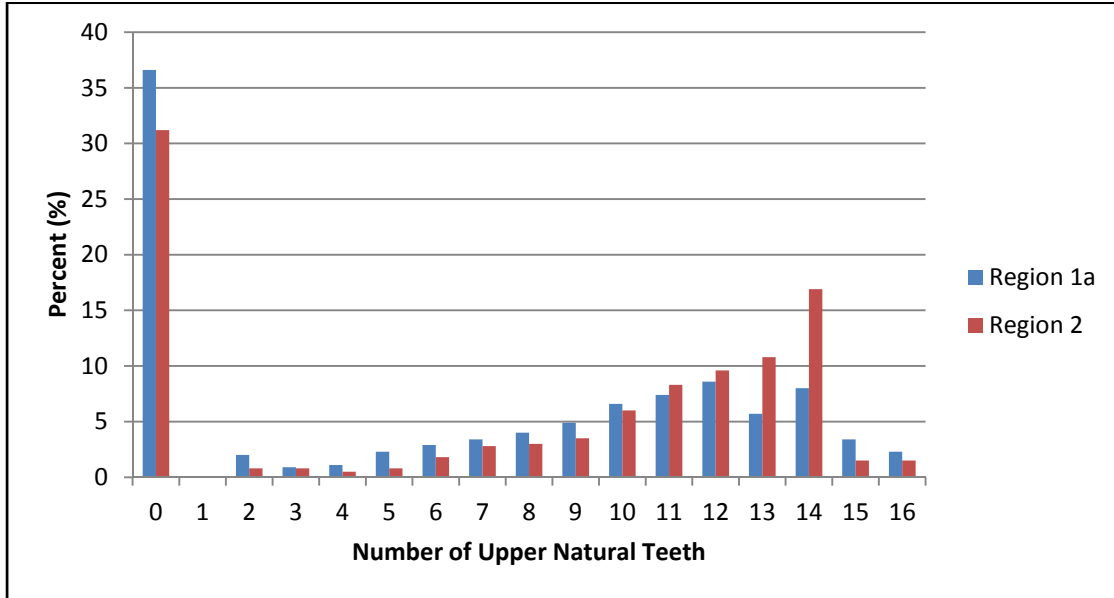
Figure 3. Percent of screened seniors with functional posterior occlusal contacts Regions 1a and 2.



In Region 1a, 128 seniors (36.6%) had no natural upper teeth at the time of the screening. Only 8 (2.3%) had all their natural upper teeth, 44 (12.6%) had between 1-7 natural upper teeth and 170 (48.6%) had between 8-15 natural upper teeth, Figure 4.

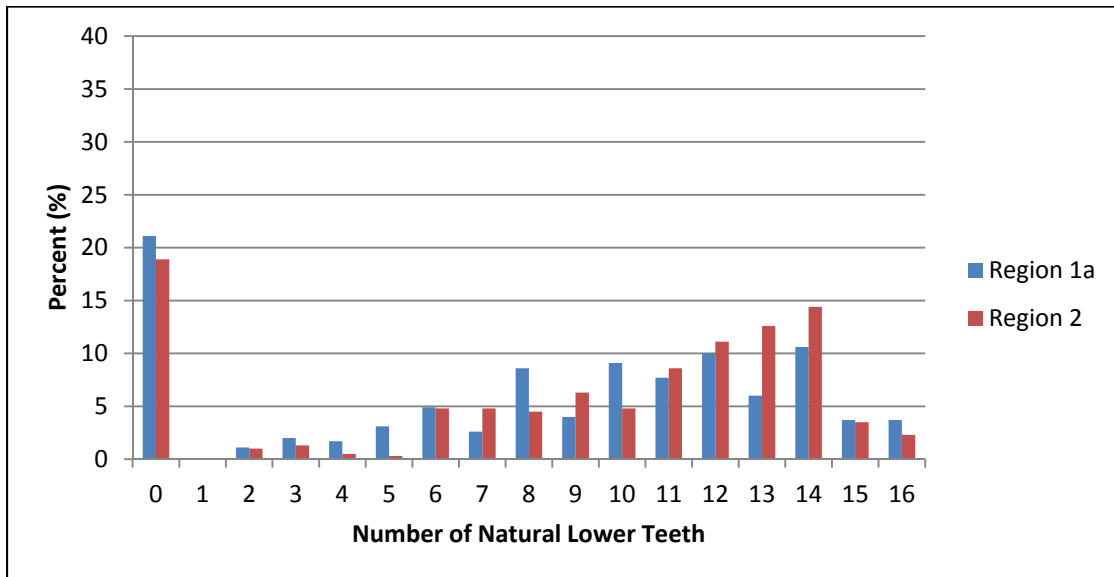
Region 2 had a slightly lower prevalence of seniors screened with no natural upper teeth (124 seniors, 31.2%) than Region 1a. Six seniors (1.5%) had all their natural upper teeth, 29 (7.5%) had between 1-7 natural upper teeth and 237 (59.6%) had between 8-15 natural upper teeth, Figure 4.

Figure 4. Prevalence of natural upper teeth in screened seniors in Regions 1a and 2.



Region 1a had 74 (21.1%) screened seniors with no natural lower teeth at their screening. They also had 54 (15.4%) with 1 to 7 natural lower teeth and 209 (59.7%) with 8-15 natural lower teeth. Thirteen (3.7%) had all of their lower teeth at the time of the screening. Region 2 saw similar rates with 75 (18.9%) seniors with no natural lower teeth. Fifty (12.7%) had between 1 and 7 natural lower teeth and 261 (65.8%) had between 8 and 15 lower natural teeth, Figure 5.

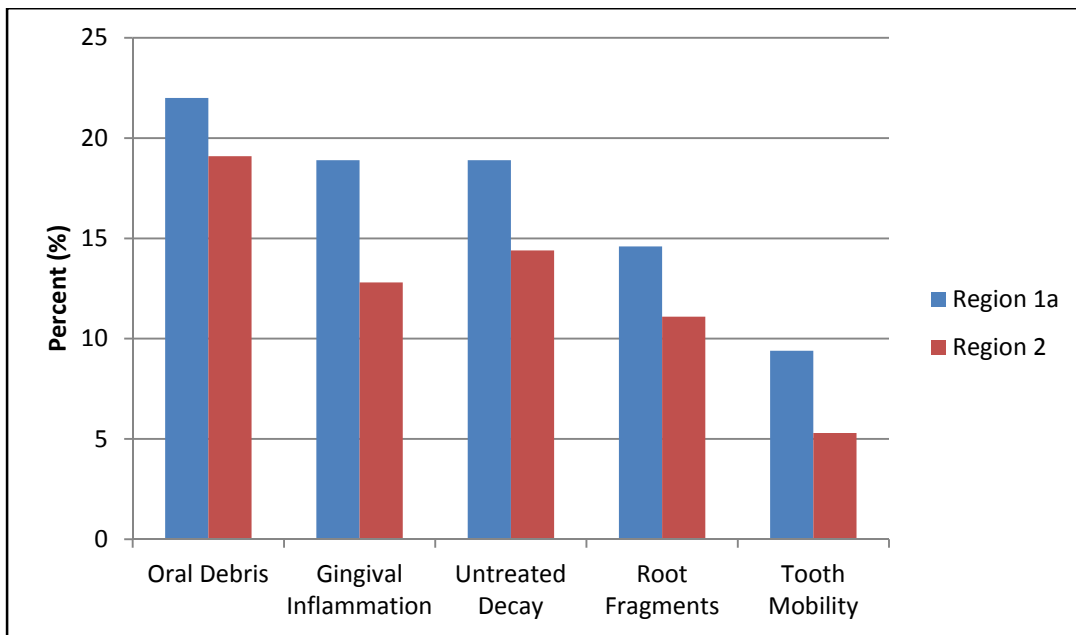
Figure 5. Prevalence of natural lower teeth in screened seniors in Regions 1a and 2.



In total, Region 1a had 69 (19.7%) seniors who were edentulous, no natural teeth, which was slightly higher than Region 2 who saw 75 (18.9%) seniors.

The most prevalent poor oral health condition seen for both regions was oral debris, found among 22% of screened seniors in Region 1a and 19.1% in Region 2. The second most prevalent poor oral health condition for Region 1a was a tie with 18.9% of the population having both gingival inflammation and untreated decay followed by root fragments (14.6%) and tooth mobility (9.4%). Region 2 had a lower prevalence of these poor oral health conditions, 14.4% had untreated decay, 12.8% had gingival inflammation, 11.1% had root fragments and 5.3% had tooth mobility, Figure 6.

Figure 6. Prevalence of poor oral health conditions among screened seniors in Regions 1a and 2.



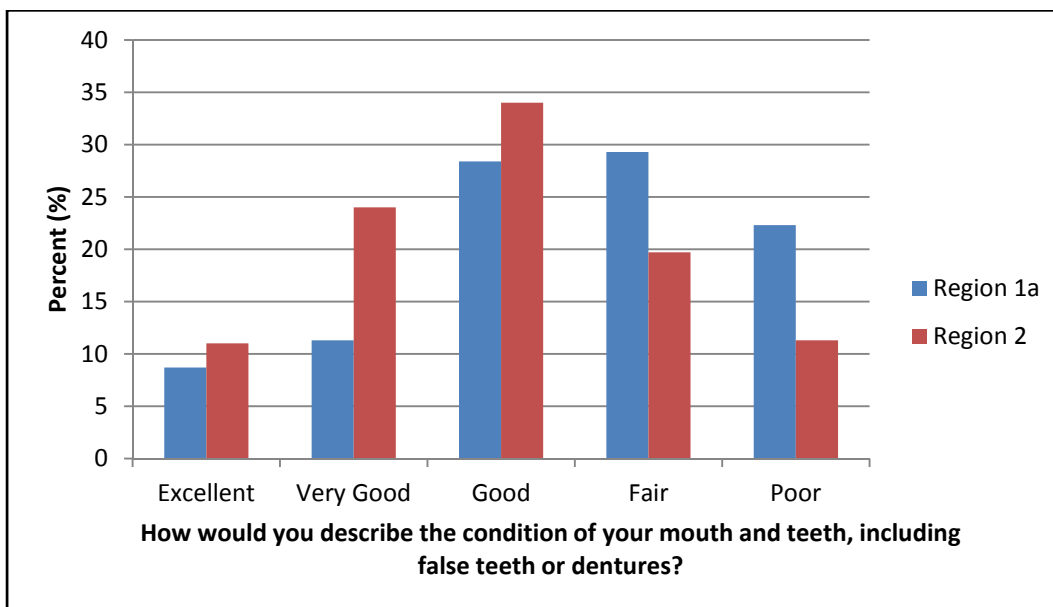
In Region 1a there were 22 (6.3%) seniors evaluated and presented in need of urgent care within the next week and an additional 68 (19.4%) in need of early care within the next several weeks. Region 2 saw 19 (4.8%) in need of urgent care and 68 (17.1%) in need of early care.

Patient Self-Report Oral Health Conditions

Of the 747 seniors who had an oral health screening in Regions 1a and 2, 736 (98.5%) completed a paper-based self-reported survey on their oral health behaviors, condition of their mouth and oral health insurance status. Region 1a had 345 (98.6%) completed senior surveys and Region 2 had 391 (98.5%).

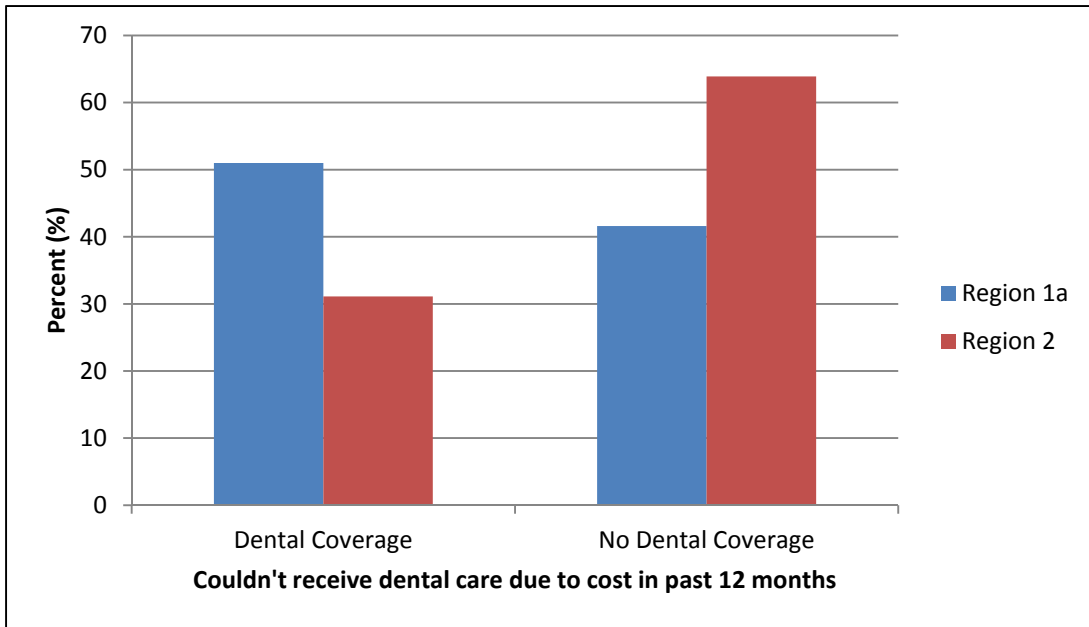
Seniors were asked how they would describe the condition of their mouth and teeth including false teeth or dentures. Almost half of seniors in Region 1a (48.4%) felt their mouth was in good or better condition whereas 69.0% of seniors in Region 2 described their mouth and teeth in good or better condition, Figure 7.

Figure 7. Self-reported condition of the mouth and teeth among seniors from Regions 1a and 2.



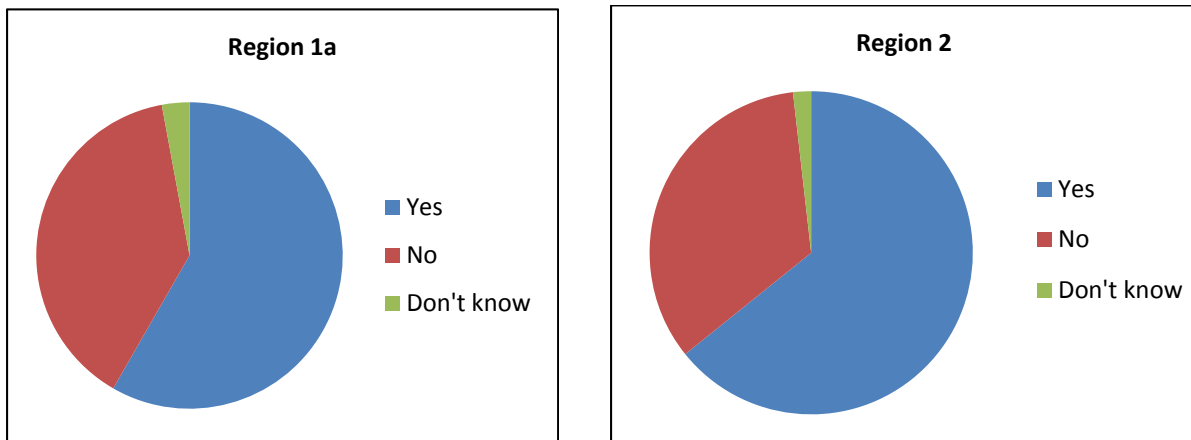
Seniors were also asked about the status of their oral health insurance that pays some or all of their routine dental care. Over half of the seniors from Region 1a (64.9%) said they had routine dental coverage while less than half of Region 2 seniors (43.7%) said they did. In addition, 43.2% of Region 1a seniors said they needed dental care in the past year but could not access it because of cost. Of those that reported they needed care but could not obtain it 51.0% had dental insurance. Region 2 had 31.2% who reported needing dental care in the past year but due to cost could not receive it. Of those in Region 2, 31.1% had dental coverage that needed care they could not receive care due to cost, Figure 8.

Figure 8. Prevalence of dental insurance coverage among seniors that reported they needed dental care in the past 12 months but could not access it due to cost, Regions 1a and 2.



The proportion of seniors that visited a dentist for a check-up or dental cleaning in the past three years was very similar between Region 1a and Region 2. Region 1a saw 201 (58.3%) seniors who had been to a dentist in the past three years and 134 (38.8%) who had not been. Region 2 saw 250 (63.9%) seniors who had been to the dentist in the past three years and 132 (33.8%) seniors who had not been to a dentist for a check-up in the past three years, Figure 9.

Figure 9. The proportion of seniors that visited a dentist for a check-up or cleaning in the past three years in Regions 1a and 2.



Of the seniors who had a dental visit in the past three years, about half visited a dentist or dental clinic in the past 12 months. Almost half of seniors in Region 1a had been at least once in the past year (46.4%) and 53.9% of seniors had been in the past year from Region 2. Seniors were also asked if they had a dentist or clinic they usually go to for dental care and 61.2% of seniors in Region 1a and 74.7% in Region 2 said they did.

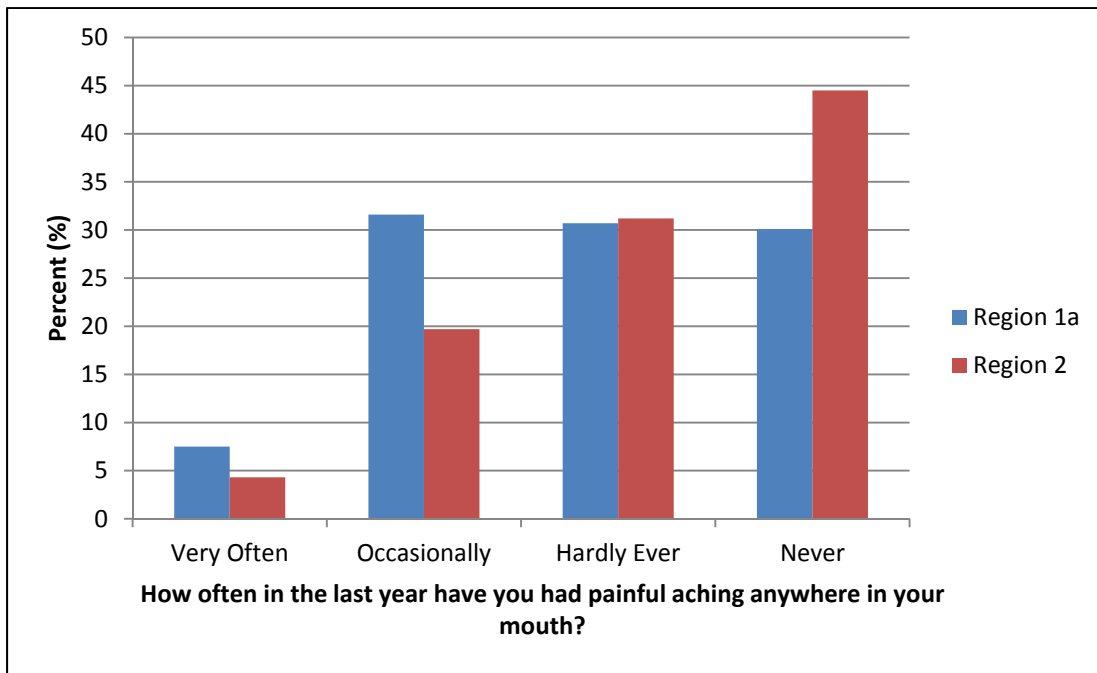
Seniors were asked to provide the main reason they did not visit a dentist or dental clinic in the past year. Cost was the top reason for both Region 1a and Region 2 (44.4% and 47.8% respectively). Other reasons listed for Region 1a were fear (15.9%), no reason to go (15.1%), not having a dentist (8.3%) and cannot get to the office/clinic (too far away, no transportation, no appointments available) (6.3%). Other reasons listed among Region 2 seniors included no reason to go (22.4%), and fear (6.9%), Table 5.

Table 5. Reported reasons seniors have not been to a dentist in the past year in Regions 1a and 2.

Reason	Region 1a	Region 2
Cost	112 (44.4%)	111 (47.8%)
No reason to go (no problems, no teeth)	38 (15.1%)	52 (22.4%)
Fear, apprehension, nervousness, pain, dislike going	40 (15.9%)	16 (6.9%)
Do not have/know a dentist	21 (8.3%)	5 (2.2%)
Cannot get to the office/clinic (too far away, no transportation, no appointments available)	16 (6.3%)	8 (3.4%)
Have not thought of it	8 (3.2%)	5 (2.2%)
Other priorities	3 (1.2%)	10 (4.3%)
Other reason	14 (5.6%)	25 (10.8%)
Total	252	232

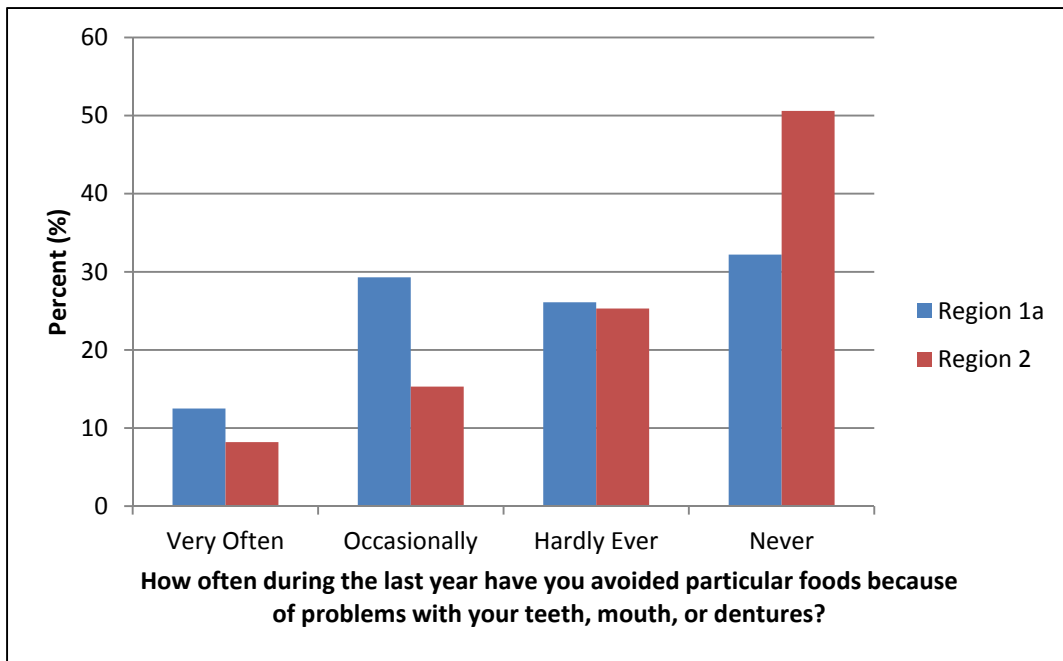
The survey asked seniors to describe their current oral health conditions including pain and aching in their mouth over the past year. In Region 1a, 7.5% of seniors reported having pain in their mouth very often over the past year whereas 4.3% of seniors in Region 2 reported the same frequency of pain, Figure 10.

Figure 10. Prevalence of pain or aching in the mouth in the past 12 months by Region 1a and 2.



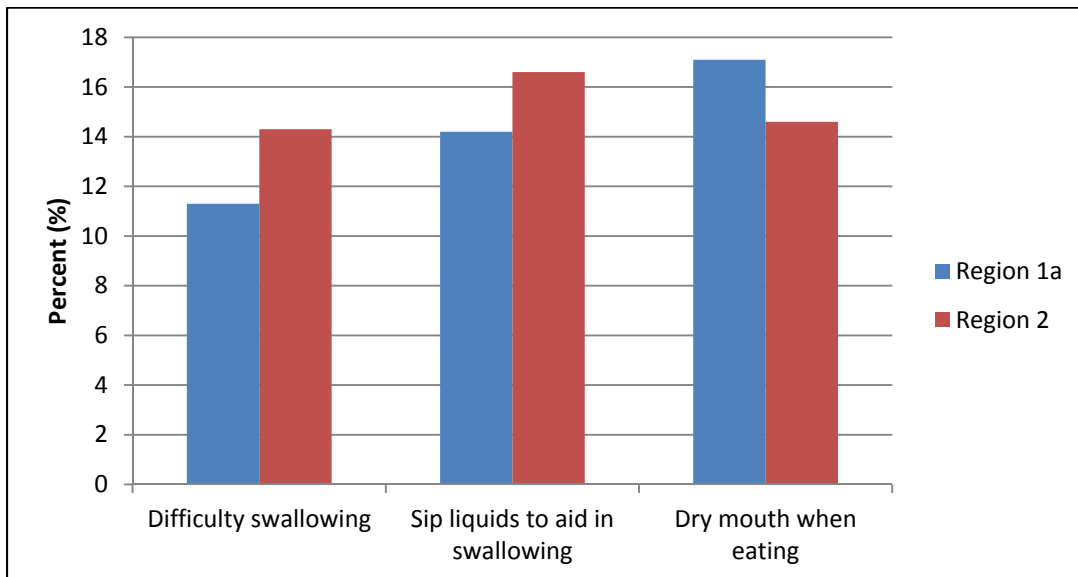
Seniors also reported on the frequency of avoiding eating foods in the past year due to oral health problems with their teeth, mouth or dentures. Region 1a once again saw a higher prevalence of seniors avoiding food very often in the past year due to oral health problems compared to Region 2 (12.5% and 8.2% respectively). Region 2 had over half of their screened population report they never avoided food in the past year, Figure 11.

Figure 11. Prevalence of seniors who avoided food in the past year due to oral health problems in Regions 1a and 2.



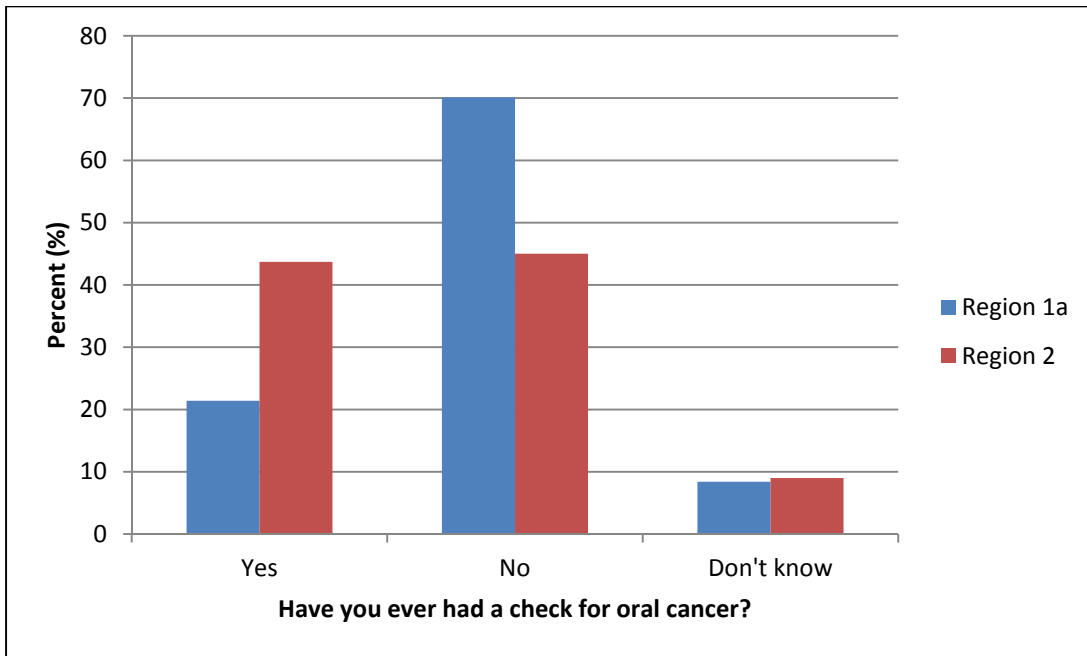
Screened seniors in Region 1a reported a higher prevalence of having a dry mouth while eating than screened seniors in Region 2 (17.1% vs 14.6%). However, Region 2 screened seniors had a higher prevalence of difficulty swallowing and needing to sip liquids to aid in swallowing while eating than Region 1a screened seniors, Figure 12.

Figure 12. Prevalence of seniors with difficulty swallowing food or eating in Regions 1a and 2.



Almost half of Region 2 seniors (43.7%) reported that they have received an oral cancer screening in the past. Region 1a seniors had a much lower reported rate of ever receiving an oral cancer screen (21.4%), Figure 13.

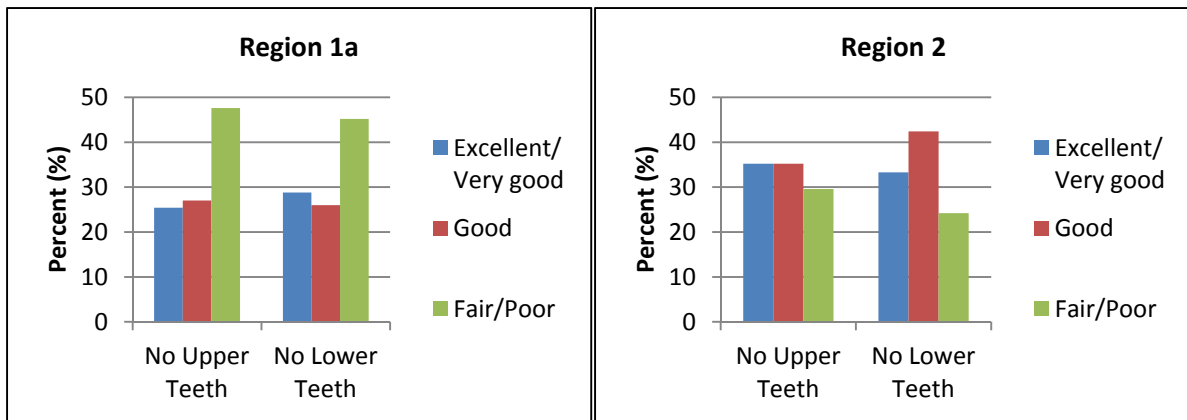
Figure 13. Prevalence of seniors obtaining an oral cancer screening by a dentist in Regions 1a and 2.



Screened Data Compared with Patient Perceived Oral Health

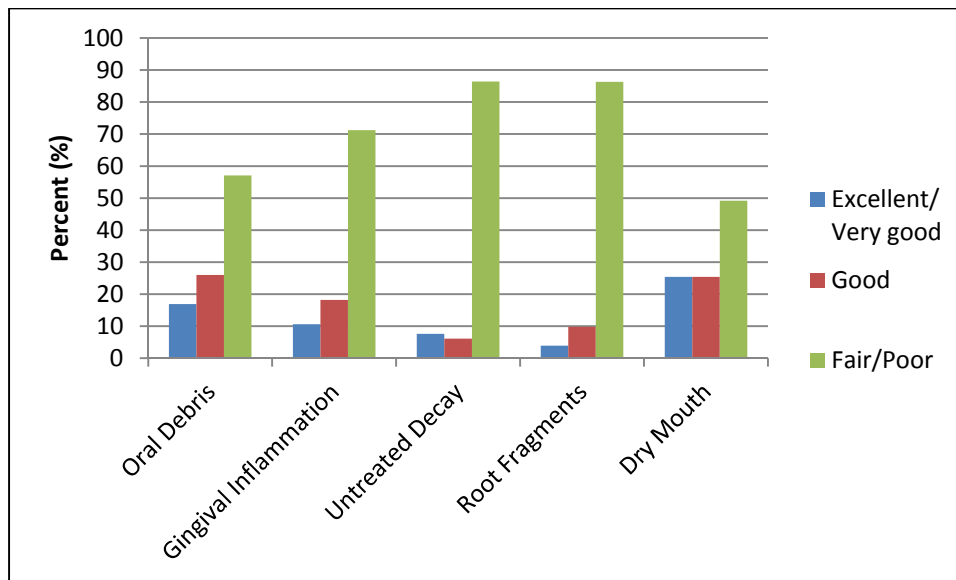
The results from the dental hygienist screening form were matched with the senior self-reported surveys to compare the senior's perceived oral health condition with their actual oral health. A quarter of Region 1a seniors who do not have any natural upper teeth and 35.2% of Region 2 seniors with no upper teeth felt the condition of their mouth was in excellent or very good condition. Results were similar for seniors with no natural lower teeth (28.8% for Region 1a and 33.3% for Region 2), Figure 14.

Figure 14. Perceived condition of the mouth among seniors with no upper and no lower teeth in Regions 1a and 2.



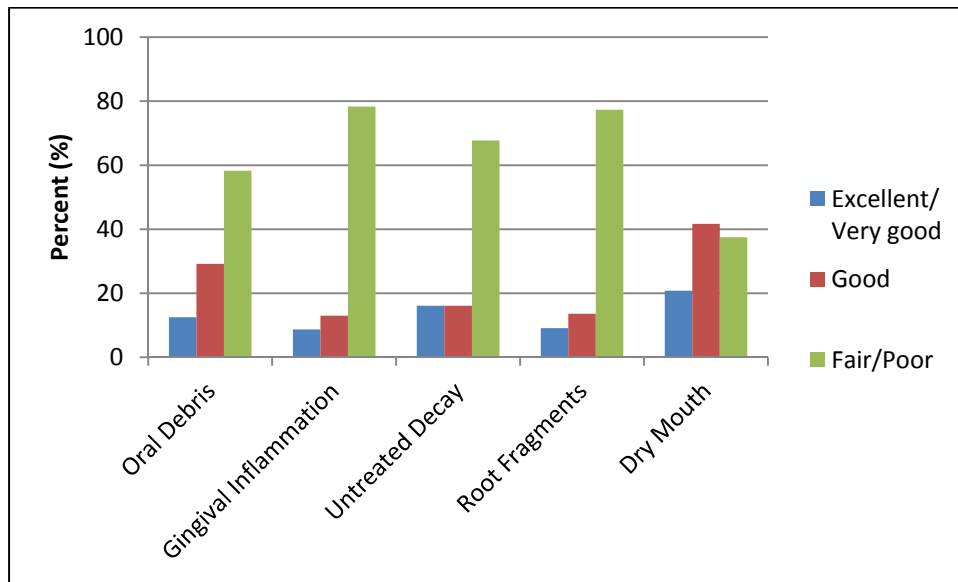
Among screened seniors in Region 1a the majority rated their oral health condition as fair or poor for each of the screened oral health conditions. Seniors with root fragments had the lowest self-reporting percent of excellent or very good oral health (3.9%). Seniors with untreated tooth decay had the highest percent of self-reporting fair or poor oral health conditions (86.4%), Figure 15.

Figure 15. Self-reported condition of the mouth among seniors with various poor oral health conditions in Region 1a.



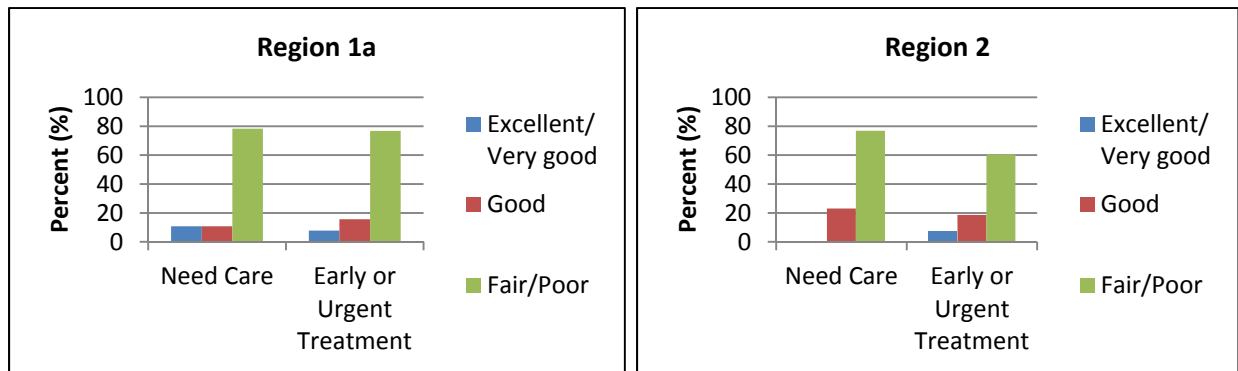
Most seniors from Region 2 self-reported fair or poor oral health among all of the poor oral health conditions screened for except for dry mouth. Those with gingival inflammation (78.3%) had the highest self-reporting of fair or poor oral health followed by root fragments (77.3%), Figure 16.

Figure 16. Self-reported condition of the mouth among seniors with various poor oral health conditions in Region 2.



Each senior screened was assessed for their current oral health need. Of those who had a need for periodontal care in Region 1a, 10.8% perceived their oral health as excellent or very good and an additional 10.8% perceived their oral health as good. Among those found needing periodontal care in Region 2, no seniors felt their oral health was excellent or very good but 23.1% rated their oral health as good. Approximately 7% in both Region 1a and Region 2 classified their oral health as excellent or very good among those found needing early or urgent oral health care in the next week or two and an additional 15.6% in Region 1a and 18.6% in Region 2 thought their oral health was good among the same population, Figure 17.

Figure 17. Self-reported condition of the mouth among seniors in need of oral health care or urgent treatment in Regions 1a and 2.



Smiles on Wheels Evaluation

Evaluation forms were completed by Smiles on Wheels (SOW) staff after each of the 29 oral health screening events. The SOW staff felt 16 of the events ran excellently, 9 ran good and 4 were average.

The SOW staff felt they were accepted and welcome by the seniors at the events. However, staff thought a few things might have helped the turnout and the events run smoother. First, having a more private screening area to make the seniors feel more comfortable would encourage more seniors to participate. Dentures need to be removed prior to the screening and many seniors are not comfortable doing this in public. Second, lines at some of the events were long which deterred participation. Shorter lines or more seating would help the seniors feel more comfortable as they waited. Comfortable climate with air conditioning or fans would also make the seniors and SOW staff feel more relaxed. Finally, the seniors felt the survey was too long. A shorter survey would be beneficial for future events.

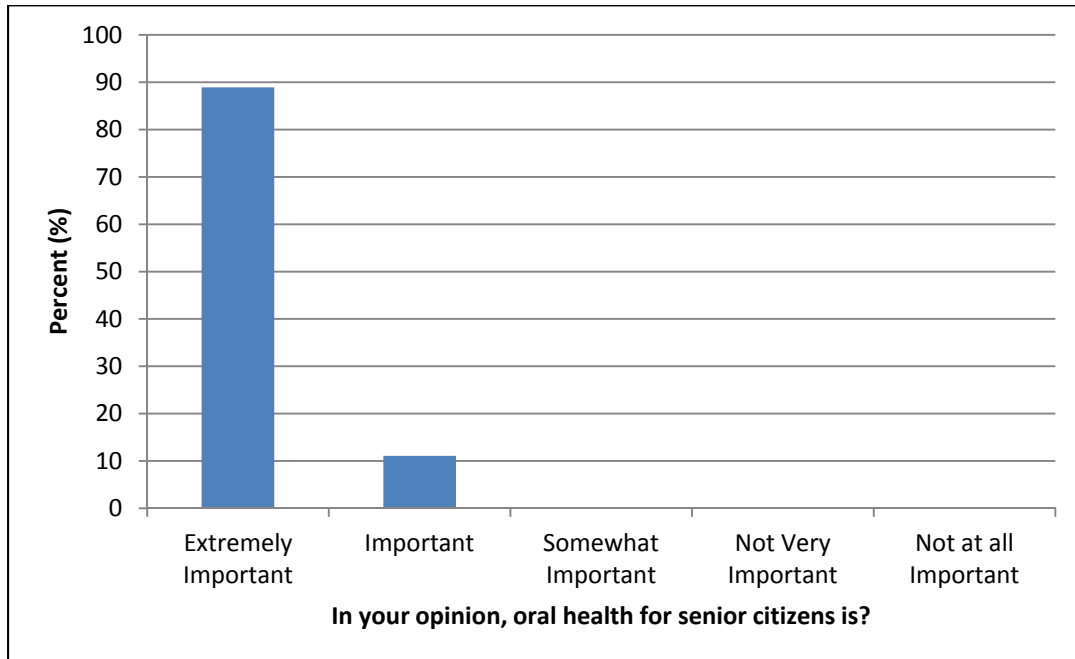
All sites thought that the Michigan Department of Community Health (MDCH) was very supportive of the screenings. MDCH staff participated in trainings when SOW staff expected large turnouts for extra assistance. One site recommended MDCH change the age minimum from 65 years to 60 years.

Site Administrator Evaluation

Twenty-one of the 29 administrators completed an evaluation form for the day of the oral health screening event. Over 90% reported that they thought oral health was extremely important for senior citizens and the other 8% thought it was important, Figure 18. All but one site reported an

overall excellent experience working with Smiles on Wheels and planning the event. The remaining one site's experience with SOW was good. No one reported that they would not host another oral health screening day, 3 said they would consider hosting another event and 27 said they would host another.

Figure 18. Reported importance of oral health for senior citizens by the site administrators at the oral health screening events.



Discussion

JCSSS and MSSS--R1a/2 helped reach 747 Michigan seniors and provided oral health screening and care to them. Of these, 41 (5.5%) were in need of urgent treatment and 111 (14.9%) were in need of periodontal care that they may not have received otherwise. Forty percent of the seniors that were screened reported that they did not have insurance that covered dental care and one-third (36.8%) did not receive dental care because of cost in the past year. In the City of Detroit 43.2% screened seniors reported needing dental care in the past year, but due to cost could not receive it, but to note 51.0% of these seniors reported they had routine dental insurance. This demonstrates a need in the City of Detroit and the Hillsdale, Jackson, Lenawee County region for senior dental care. It should be a priority to see if this need is consistent throughout the state and

to determine a way to increase access to oral care for this age group. The data shows that many seniors in Michigan still have natural dentition that requires access to a dentist.

JCSSS and MSSS--R1a/2 was able to obtain a racially representative sample from both regions. The screenings in the City of Detroit accounted for a large sample of black seniors whereas the Hillsdale, Lenawee and Jackson County screenings accounted for a large sample of white seniors. Both regions had populations mainly comprised of females (87.7% in Region 1a and 72.5% in Region 2). Efforts need to be made to try and reach more males in the population.

This screened population had several poor oral conditions including severe dry mouth (17.3%), suspicious soft tissue lesion(s) (7.4%), substantial oral debris (20.5%), severe gingival inflammation (15.7%), untreated decay (16.5%), root fragments (12.7%) and obvious tooth mobility (7.2%). These oral health conditions do not represent a healthy oral cavity that is necessary for all people of all ages to achieve total health. Seniors specifically are at a higher risk of a healthcare emergency resulting from poor oral health, such as aspiration pneumonia and choking that can result from poor oral health. A complete statewide survey is needed to provide additional data on the oral health status of the aging population in order to initiate policy recommendations that can provide additional and necessary oral health care resources to seniors.

According to the respondent's survey in both regions combined, only one-third (33.3%) had ever been checked for oral cancer. The survey was completed prior to the open mouth oral health screen in which 100% of the seniors were screened for oral cancer.

Lessons Learned

Throughout the 18-month *JCSSS* project as well as the 18-month *MSSS--R1a/2* project, the screening events were closely examined for possible area of improvement to gain access to seniors, and to also increase the screening participation rates of the seniors. The following are some of the notable lessons that were learned:

- Location information:
 - Congregate meal sites—all of the screenings were at sites that provided lunch to seniors. With administrators/coordinators support, these sites were a simple way to access seniors. It was demonstrated through the screenings that having the support of the coordinator was imperative for several reasons:
 - The coordinator is a familiar and friendly face to the senior. If the

coordinator demonstrates the importance of the screening then the seniors will be more comfortable with consent;

- Many, if not all, of these sites had activities going on (Bingo, Karaoke, card tournaments, exercise classes, live band, free resources, etc.) that the screening will be in competition with.
 - If the site coordinator can plan the time so that seniors do not risk missing out on the social event it will increase the number of seniors screened;
 - If the coordinator will announce the screening to the group in a positive and encouraging manner it naturally supports the project;
 - The site coordinator might be instrumental in encouraging more males into the screening area and to educate them on the importance of good oral health;
 - The coordinator can help with planning the best day to have access to the highest number of seniors because they are experienced in their positions, know the seniors well, and are good at forecasting attendance for food preparation needs.
- Faith-based location—screening completed at a faith-based location, incorporated into their nutritional meal site; continue to be a positive screening location. Seniors are familiar with one another and those who were friends would encourage each other to have the screening done.
 - Senior focused health fair—produces a large number of seniors in one site.
 - Very energetic large crowd;
 - Additional oral health screeners may be needed;
 - Privacy screens are very important, it is important to request a booth or location that is in an out-of-the-way location to maximize privacy;
 - Rope to create an area for lines will be helpful to keep seniors waiting in line in order;

- Additional chairs are recommended for outdoor and large events;
 - Create coupons because seniors are concerned with not getting around to all of the booths quickly enough for the freebies. When they had a coupon many returned to use their coupon in exchange for an oral screening and goodie bag.
 - Legislative focused events—one event for the *JCSSS* was a senior event planned by the local elected official, Tim Walberg. The screeners (SOW) were actually mailed an invitation to attend the event to provide oral health screens. The event was significant with high participation, and would be a recommended screening site in the future.
 - Holiday event—the day of Halloween, SOW planned a screen at a local senior center in the *JCSSS*. Although the turn out of the seniors was extensive, the majority of them were dressed up and preferred to spend their time socializing than having an oral health screen done. Holidays were not utilized in the *MSSS--R1a/2*.
 - Assisted Living Facility—were utilized in both *JCSSS* and *MSSS--R1a/2* projects. It is important to have full support of the administrator of the home for a successful event. It can be a challenge to get seniors to come from their homes to the screening event. Events taken place at an Assisted Living Facility can double in length due to the fact that seniors live there and they are not coming out for a one time social event that has set hours. Seniors will come from their rooms for lunch, eat leisurely and often go back to their rooms before coming back for a screening. Assisted Living Facilities also bring an older group (75+) to be screened so a wider variety of data could be collected. This was in contrast to many of the congregate meal site locations where seniors tend to be in their upper sixties and low seventies, and still able to attend and travel independently. Since congregate meal sites are generally scheduled around three hours or less, entering the home of the seniors naturally offered the flexibility of a wider time frame which allowed more screenings to be completed.
- Successful tips
 - Privacy screens—the addition of privacy screens was added at the fifth screening site location. The screens increased the response rate of the screenings, the

seniors appeared to be much more comfortable with the open mouth survey as well as the removal of dentures and partial dentures.

- A supportive site coordinator who knows seniors by name and who can convince them to have screening done. Many seniors will respond that they do not need a screening done because they do not have natural dentition, or that they just went to the dentist. Several of the coordinators that understood why the State needs to collect this data were vital to explain to seniors that they are actually helping others out who may be in need.
- Have list of dentists nearby to refer for emergency situations. There were multiple times that a referral was given, and appointments were actually made by SOW on site of the screening for a senior in need.
- Posters and advertisements will increase the turn out. The coordination of the screenings included a flyer on the event. On occasion the flyer was put into activity advertisements, and then the same flyer was developed into posters and was posted heavily within the locations of the event (see Appendix F).
- Include age range on posters that advertise screening event. For the purpose of this project those aged 65 and over were considered a senior or older adult. However, many of the health fairs advertise senior status as age 50 and over. As a result numerous people were screened that were not 65 years of age or older.
- Incentives are essential.
- Incentives—the success of the survey rested upon the significance of the incentive provided. The seniors received quality oral health aids as an incentive. The coordinator was also provided an oral health bag at the completion of the screening. The incentives were displayed behind the screening area so that they were visible to the seniors, with one sample bag on the front table so they could see/touch what they would get for participating. The following were considered an extremely important incentive to provide to seniors:
 - Crest spin brush—multiple comments were made on how they appreciated the power spin brush;
 - Denture adhesive—offering different types of adhesive was beneficial in

supporting the seniors that wear dentures. Since they are there to socialize and eat with friends, they are very concerned that their denture may not be fixed in at the end of the survey. By having a wide variety of adhesives on hand, it is reassuring that their preferred adhesive (brand and type) is readily available to use, as well as provide them free products to take home.

- Reusable shopping bags—the bags were ordered to put the incentives in, however the bags quickly became the most wanted item by the seniors. Displaying the large bag on the table is a simple way to attract seniors to the screening area.
 - Dry mouth aids—it is essential to have a lot of dry mouth aids on hand. These aids were often used on the spot, as well as sent home.
 - Additional incentives—a wide variety of additional products were provided to the seniors: a full size tube of toothpaste, Reach Access flossers, different types of disposable dental picks, mouth rinses, denture kits, oral care reminders to place on bathroom mirrors, etc. Each bag was packed for the individual and their oral health needs.
- Survey Information: Four different surveys were completed for each screening event.
 - The *Michigan Senior Smile Survey Region 1a/2*: This survey was designed by the ASTDD. It is a series of 19 qualitative questions that asked the senior about their own oral health status, both currently and historically (see Appendix B). Over the JCSSS pilot events, the font size and paper type (thick/thin) was manipulated in efforts to learn what worked best. Upon following gradual lessons learned at each location, it was determined that it is best to have the SOW assistant sit and read each question to the participants. Due to physical impairments and health literacy, the surveys were more accurate and complete when they were assisted verbally with this form. For the *MSSS--R1a/2* project reading the paper survey was continued, except in the event of senior events that were so large that SOW did not have the staff to dedicate time to this. In those events, about half the time the seniors would complete the form individually, while the other half of the forms were completed by hygienists as part of the screening process, as needed by the seniors.
 - The *Sample Oral Health Screening Form #2 Recommended and Optional*

Indicators: This survey was designed by the ASTDD, and serves as the data collection tool for the open mouth survey that was completed by a calibrated Registered Dental Hygienist (see Appendix C). The careful calibration of the screeners is important in the validity of the study. The *JCSSS* pilot only used two hygienists who spent the first three sites calibrating their results to ensure reliability. In the *MSSS--R1a/2* project any additional hygienists utilized were calibrated prior to the screening event.

- The *JCSSS Site Administrator Evaluation*: This survey was given to each specific site contact administrator; it offered feedback on how the screening flowed for their facility. This offered some internal feedback on how the screening might be more successful (see Appendix D). At times, this survey needed to be e-mailed out to the site administrator if they were too busy to complete it that day.

- The *MSSS--R1a/2 Smiles on Wheels Survey*: This survey was completed by Smiles on Wheels, the team of hygienists and the assistant that was charged with planning and implementing the events (see Appendix E). This is where they noted the specific logistics of the event. The logistics were carefully looked at upon each survey to learn how the screening could be more successful. This survey was highly utilized by the grant project coordinator at MDCH to review lessons learned, and any additional means of support required from MDCH on the project.

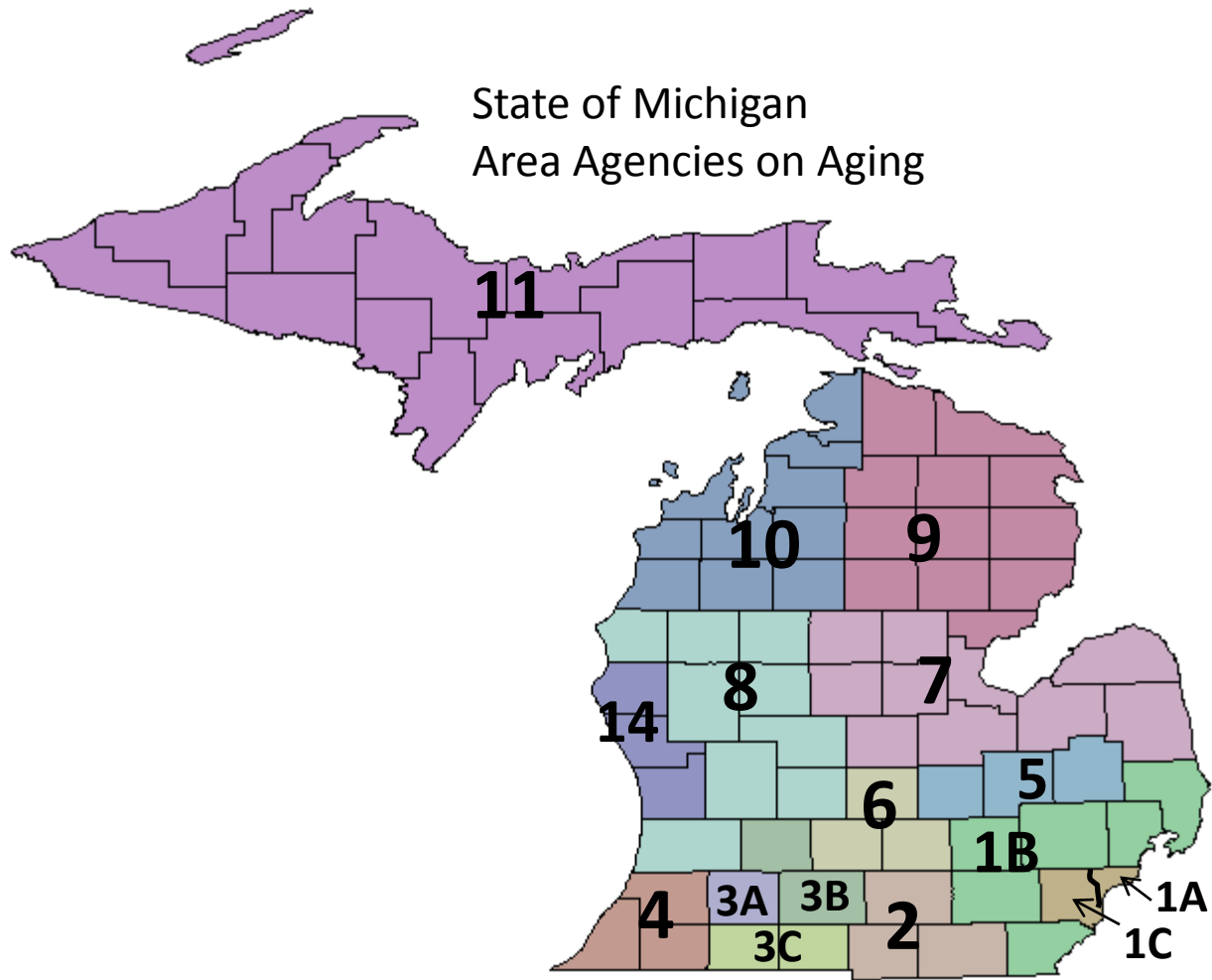
Future Plans

The *MSSS--R1a/2* project was a small step taken to complete a senior oral health data collection project within Michigan. Due to the nature of the population being surveyed, it will be difficult to capture all of the necessary data among all the aging populations in the state with one single survey. Seniors reside in a wide variety of locations and facilities, and all have a wide variety of limitations and daily events. Due to the cost of each region, a one-time statewide survey rests solely on additional funding availability and opportunities offered through grants, donations and financial gifts. Although focusing on each AAA region one or two at a time is not ideal, it is all that funding currently allows. The data collected will be provided to and utilized by each region focused on in this project. The data can be used by those regions to fully understand the current state of senior oral health in their geographical area. Ideally it will be utilized to show the need for increasing oral health assistance and access available to the seniors. The next step for the MDCH Oral Health Program is to seek funding when available and to continue to gather data in each of the AAA regions, in order of highest need as determined via the BRFSS. A statewide survey will be completed as funds allow.

References

¹Gibson, Mary Jo, Fox-Grage, Wendy, Houser, Ari. *Across the States 2009: Profiles of Long-Term Care and Independent Living- Michigan*. Eighth Edition. AARP Public Policy Institute. Washington, DC.

²Centers for Disease Control and Prevention. *Oral Health in America: Summary of the Surgeon General's Report*: http://www.cdc.gov/oralhealth/publications/factsheets/sgr2000_05.htm



By filling out this survey you will assist the Michigan Department of Community Health better understand how to successfully collect oral health data on senior citizens.

1. Enter site location information/Date & Site #**2. In my opinion the screening day ran:**

- Excellent
- Good
- Average
- Poor
- Horribly

3. In your opinion, how could the day have run smoother?**4. In your opinion, what was the general feeling that you received from the seniors?**

- Accepted, welcome, appreciated
- Neutral
- Unwanted, unwelcome, unappreciated

5. In your opinion, what was the general feeling that you received from the site administrator?

- Accepted, welcome, appreciated
- Neutral
- Unwanted, unwelcome, unappreciated

6. In your opinion, did the seniors like the oral health aids?

- Yes
-

Neutral

No

7. Do you need any additional oral health aids ordered?

Yes

No

8. What additional oral health aids are needed?

9. For those seniors who denied screenings, in your opinion, what could have been done to convince them to comply?

10. Did you feel as though you needed more supplies?

Yes

No

11. What additional supplies are needed?

12. Did you have optimal working space that allowed for patient privacy?

Yes

No

13. What could be changed to offer more privacy?

14. Did you take any photos of oral health issues?

- Yes
- No

15. If you took photos, please describe what was found which lead you to take a photograph?

16. At what point did you first contact the senior center?

- Less than one week ago
- 1-2 weeks ago
- 3-4 weeks ago
- 6 weeks ago
- Over 6 weeks ago

17. How would you rate your support with Michigan Department of Community Health for this screening date?

- Very supportive
- Somewhat supportive
- Not supportive

18. How else could the Michigan Department of Community Health assist you with your screening day?

Done

1. Site ID Code

2. Screen Date

3. Screener ID Code

01

02

03

4. Age

65

66

67

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Appendix C

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- 99
- 100
- 100+

5. Gender

- 1=Male
- 2=Female

6. Race/Ethnicity

- 1=White
- 2=Black
- 3=Hispanic
- 4=Asian
- 5=AI/AN
- 6=Pacific Islander
- 7=Multi-racial
- 9=Unknown

7. Do you have a removable upper denture?

0=No

1=Yes

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Check out our [sample surveys](#) and create your own now!

By filling out this survey you will be assisting the State of Michigan's Oral Health Program to understand how to best collect oral health data on senior citizens.

1. In your opinion, oral health for senior citizens is:

- Extremely important
- Important
- Somewhat important
- Not very important
- Not at all important

2. How was your overall experience working with Smiles on Wheels for the oral health screening today?

- Excellent
- Good
- Fair
- Poor

3. What was your experience with planning the oral health screening day with Smiles on Wheels (planning prior to the day of)?

- Excellent
- Good
- Fair
- Poor

4. How would you rate the effectiveness of communication with Smiles on Wheels?

- Excellent
- Good
- Fair
- Poor

5. How likely would you be to host another oral health screening day?

- Yes, I would host another oral health screening day
- Maybe, I may consider hosting another oral health screening day
- No, I will not hold another oral health screening day

6. I feel as though the consumers benefited from the oral health screening day:

- Agree
- Somewhat agree
- Disagree
- Strongly disagree

7. I feel as though the oral health screen was accepted by the consumers:

- Agree
- Somewhat agree
- Disagree
- Strongly disagree

8. In your opinion, what did Smiles on Wheels do that assisted the day in running smoothly?

9. In your opinion, what could Smiles on Wheels have done to make the day run better?

10. In your opinion, what could Smiles on Wheels do to make the clients more comfortable?

11. Any additional comments are welcome to help us better our screening day:

Appendix D

Thank-you for your time!

Done

By filling out this survey you will assist the Michigan Department of Community Health better understand how to successfully collect oral health data on senior citizens.

1. Enter site location information/Date & Site #**2. In my opinion the screening day ran:**

- Excellent
- Good
- Average
- Poor
- Horribly

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- 6 weeks ago
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- Very supportive
- Somewhat supportive
- Not supportive

18. How else could the Michigan Department of Community Health assist you with your screening day?

Done



SMILES ON WHEELS

Mobile Dental Hygiene Care
501c3 non-profit
TIN # 20-5964778

FREE Oral Health Screening

Who: Anyone 65 years and older—No Appointment Necessary

When: Screening date to be filled in

Where: Screening location to be filled in

What: Each participant will complete a survey and have an oral screening. The screening will include an oral cancer screen. Only a mirror and piece of gauze will be used.

Free: Each participant will also receive a free oral health aids (toothbrush, toothpaste, denture supplies, dry mouth products, etc.).

Purpose of this project: The Jackson County Senior Smile Survey is supported by the Michigan Department of Community Health Oral Health Program and funded by National Association of Chronic Disease Directors #HA2011. By participating in this survey you will help Michigan learn more about the oral health needs of its Senior Citizens. All of your information will be kept confidential.



For more information please contact: Smiles On Wheels at 517-740-2596