Preventive Screenings Gap Analysis

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Introduction

The Alaska Department of Health and Social Services (DHSS), Division of Public Health (DPH), Chronic Disease Prevention and Health Promotion Section asked the Institute of Social and Economic Research (ISER) to conduct a preventive screenings gap analysis for the following ten screenings/clinical guidelines:

1. Type 2 Diabetes Screening
2. Screening for High Blood Pressure
3. Lipid Disorder Screening
4. Aspirin for the Prevention of Cardiovascular Disease (CVD)
5. Prevention of Tobacco Use and Tobacco Cessation – Ask, Advise, Refer
6. Colorectal Cancer Screenings
7. Breast Cancer Screenings
8. Cervical Cancer Screenings
9. Obesity/Body Mass Index – Ask, Advise
10. Falls Screening

A gap analysis forces an organization to reflect on where an issue is now and to ask where the organization wants it to be in the future. The DHSS is seeking information on methods and practices to encourage Alaska residents to increase the rate of preventive screenings from the current levels to desired levels for specified screenings/guidelines.

This analysis focuses on:

- Identifying factors that impact preventive screening rates, such as: current practices, evidence based practices, barriers to access, consumer motivation for getting/not getting screenings, and provider knowledge.
- Listing factors recommended to achieve the goal of increasing the use of the preventive screenings.
- Highlighting gaps that currently exist in Alaska that may, if filled, increase the use of preventive screening/guidelines.

This report summarizes the results from reviews of the literature and key informant interviews. ISER has reviewed the relevant literature for each of the ten preventive screenings/guidelines, as well as reports, documents, and publications provided by DHSS, and conducted interviews with key informants identified by DHSS based both in Anchorage and urban areas outside of Anchorage. Where relevant, additional information has been included in this document to inform DHSS, including data on rates of preventive screenings/guidelines, and health behaviors related to the identified screenings/guidelines.

Methodology

Current practices, best practices, and barriers to increasing screening rates have been investigated through key informant interviews and reviews of the relevant literature. This study was approved by the Institutional Review Board of the University of Alaska Anchorage

Key Informant Interviews

An effective method to examine the reasons underlying behaviors is through in-depth interviews. Key informant interviews are in-depth interviews with individuals who are identified as very knowledgeable about a given topic, capable of sharing a depth of information. Results of key informant interviews are used to supplement and contextualize additional findings from surveys, focus groups, etc. In this study, key informant interviews were used to gather data as one part of an initial assessment of potential strategies to improve preventive screening rates in Alaska.

While the identification of key informants is not random, selected individuals must be able to provide well-informed perspectives about the study topic, be fairly representative of the various groups in the study population, and provide a diversity of perspectives. DHSS staff identified key informants who had available information on best practices, barriers, consumer motivation, and knowledge of preventive health screenings and guidelines. For this study of medical providers in urban Alaska, the following criteria were established prior to the selection of potential respondents:

- Key informants must provide at least 20 hours of direct patient care per week
- Key informants practice in urban areas of Alaska, identified as either Anchorage or non-Anchorage (including Fairbanks, Juneau, Soldotna, and Palmer)
- Medical provider occupations included physician, nurse practitioner, registered nurse, physician assistant, licensed practical/vocational nurse, and medical social worker

DHSS provided the names of 25 potential key informants to ISER for consideration. DHSS staff subsequently excluded four potential key informants due to a lack of current contact information, and one potential key informant due to the individual's perceived lack of knowledge about healthcare outside of the tribal system. DHSS staff contacted the remaining 20 key informants to invite their participation, including 10 in Anchorage, and 10 located in urban areas outside of Anchorage. One key informant was identified by DHSS as an individual who would provide contact information for an additional key informant for a total of 21 key informants (11 in Anchorage, 10 outside Anchorage). ISER followed up with each of the invited key informants to determine a convenient time for an interview. Of these contacts, ISER conducted 20 to 90 minute interviews with 10 key informants in Anchorage and 7 non-Anchorage key informants who graciously volunteered their time. Two of these were determined to work less than 20 hours of direct patient care per week, and have been excluded from the analysis. Key informants responded to a series of interview questions and prompts (See Appendix A for the interview guide), that invited them to share their perspectives on current practices, best practices, and barriers to increasing screening rates. The table below summarizes characteristics of the 15 analyzed key informants:

Table 1. Key Informant Characteristics

Characteristic	Count
Gender	• 7 Women • 8 Men
Age	• 1 aged 30-39 • 5 aged 40-49 • 5 aged 50-59 • 3 aged 60-69 • 1 aged 70-79
Years of Practice	• 2 in practice 0-9 years • 4 in practice 10-19 years • 4 in practice 20-29 years • 4 in practice 30-39 years • 1 in practice 40-49 years
Years of Practice in Alaska	• 5 practicing in Alaska 0-9 years • 4 practicing in Alaska 10-19 years • 3 practicing in Alaska 20-29 years • 3 practicing in Alaska 30-39 years

Location	• 8 providers based in Anchorage
	• 7 providers based in urban areas outside of Anchorage:
	    ○ 2 providers based in Juneau
	    ○ 4 providers based in Fairbanks
	    ○ 1 provider based in Palmer

Occupation	• 10 Physicians • 4 Nurse Practitioners • 1 Medical Social Worker
Primary Specialty	• 6 Family Medicine • 7 OB/GYN or Women's Health • 1 Surgery • 1 Social Work

Literature Review

A two-part literature review was conducted to identify and summarize relevant peer-reviewed articles on each of the ten screenings/guidelines. An initial Alaska specific PubMed search focused on best practices and barriers to improving preventive screening rates for each of the ten key screenings/clinical guidelines. This search generated 165 unique articles when using key words for each of the ten key screenings/clinical guidelines (See Appendix B for complete list of key word searches and Appendix C for annotated bibliography of results). After a review of titles and abstracts, 25 articles were found to have a non-Alaska specific focus, 54 articles were found to be about disease statistics, and 5 articles were on methods evaluating different screening techniques. Removing these three groups from the sample resulted in 81 unique articles. Of these unique articles, 61 (75%) were published in the year 2000 or later, while 52 (64%) were Alaska Native specific. These 81 articles were exported to EndNote, organized by screening type, and are summarized and integrated in the body of this report where relevant.

A second literature review was conducted to fill gaps identified in the search for Alaska-specific literature, and to contextualize themes that emerged during the key informant interviews. A key word search for articles and systematic reviews was conducted on PubMed (see Appendix D for complete list of key word searches and Appendix E for annotated bibliography of results). A systematic review is a document created from a "rigorous, replicable" evaluation of the available scientific literature on a given topic, and provides a summary of the relevant literature (CPSTF, 2013). An additional 130 articles were found from the key word searches. After a review of titles and abstracts, 15 were identified as relevant, and are incorporated into this report where relevant.

In response to comments from DHSS on an initial draft of this report, additional key word searches were conducted in PubMed to determine specific responses. (see Appendix D for complete list of key word searches and E for annotated bibliography of results). An additional two articles were identified, and after a review of titles and abstracts, one was incorporated into this report.

Screening Rates

This study has been conducted to support DHSS efforts in reaching target goals for each of the ten specified screenings. DHSS goals are estimated at an increase of 5% from the baseline data gathered in 2008 and 2009 by the Behavioral Risk Factor Surveillance System (BRFSS). Known BRFSS indicators for each of the ten screenings, baseline Alaska rates, and DHSS goal rates are summarized below. These rates have been provided by DHSS staff to represent the target populations specified by the U.S. Preventive Task Force recommendations for each screening.

Screening/ Guideline	USPSTF Recommended Population	Alaska BRFSS Indicator (Population)	Alaska Baseline Rate (2008/2009)	DHSS Goal (+5% of baseline)
Type 2 Diabetes	Adults with high blood pressure	Proportion of adults without diabetes who have had a test for blood glucose in the past 3 years (Adults with high blood pressure)	71.3%, 2009 (BRFSS)	74.9% (5% of 71.3% = 3.6)
Blood Pressure	All adults	No known indicator asking if a provider has checked blood pressure	Unknown	Unknown
Lipid Disorders	• Men age 35 and older • Men age 20-35 at increased risk • Women age 20 and older at increased risk	Proportion of adults who have had a cholesterol test in past 5 years (Men age 35+)	76.5%, 2009 (BRFSS)	80.3% (5% of 76.5% = 3.8)
Aspirin for CVD Prevention	• Men age 45-79 when benefit greater than risk • Women age 55-79 when benefit greater than risk	Proportion of adults who take aspirin daily or every other day (Men age 45-79, women age 55-79)	39.6%, 2009 (BRFSS)	41.6% (5% of 39.6% = 2.0)
Tobacco- Ask, Advise	• Screening for all adults • Cessation interventions for tobacco users • Interventions to prevent initiation of tobacco use in children and adolescents	Percent of respondents who saw a doctor in the last 12 months, either currently smoke but weren't advised to quit or do not currently smoke, and were asked if they smoke	80.5%, 2008 (BRFSS Supplemental)	84.5% (5% of 80.5% = 4.0)
		Percent of respondents who saw a doctor in the last 12 months, currently smoke, and were advised to quit smoking	70.1%, 2008 (BRFSS Supplemental)	73.6% (5% of 70.1% = 3.5)
Colorectal Cancer	Age 50-75	Ever had a blood stool test, sigmoidoscopy or colonoscopy, (Adults age 50-75)	63.3%, 2008 (BRFSS)	66.5% (5% of 63.3% = 3.2)
Breast Cancer	• Biennial mammography for women age 50-74 years	Mammogram received in past two years (Women age 50-74)	73.5%, 2008 (BRFSS)	77.2% (5% of 73.5% = 3.7)

Screening/ Guideline	USPSTF Recommended Population	Alaska BRFSS Indicator (Population)	Alaska Baseline Rate (2008/2009)	DHSS Goal (+5% of baseline)
Cervical Cancer	• Every 3 years for women age 21-65 (excepting women who have had the cervix removed, except those who have a history of high-grade precancerous lesions or cervical cancer)	Pap test in last 3 years, women age 21-65	86.4%, 2008 (BRFSS)	90.7% (5% of 86.4% = 4.3)
Obesity	• All adults • Children age 6 and over	No known indicator asking if a provider has screened for obesity	Unknown	Unknown
Falls Prevention	Does not recommend automatic risk assessment	No known indicator asking if a provider has screened to prevent falls	Unknown	Unknown

Trending Data

Each of the BRFSS indicators have been examined for trends, indicating where DHSS goals may be met if current trends persist, as well as screenings where an increase is not predicted if current trends do not continue. BRFSS methods changed in 2011 and data "is not directly comparable to previous years of BRFSS data because of the changes in weighting methodology and the addition of the cell phone sampling frame" (CDC BRFSS). DHSS staff has re-weighted past years to match the 2011 methodology change, but further inquiry would be needed to determine how the difference in sampling frame impacts the data. If the data are found to be incomparable, DHSS goal rates may need to be recalculated with 2011/2012 rates as baseline data, or alternative indicators may need to be located. Further research would be required to investigate whether there are non-BRFSS indicators that measure these ten screenings either directly or indirectly, as well as their availability and validity. Only BRFSS indicators have been used in trending data, Alaska indicators, and baseline and goal rates. However, additional indicators or data sources may be needed to fill in the gaps where there is no known tracking of the specified screening/guideline.

In each of the figures below, both the low and high confidence intervals are included as dotted lines. The space between these confidence intervals indicates the actual estimated rate in Alaska with a 95% confidence. This range accounts for potential variation that may occur because of the sampling size. Any rates within a confidence interval for a given time point are not statistically significantly different, and may have occurred by random chance.

Further research would be needed to determine trends within a given data set. For example, there may be specific sub-populations, with age, gender, racial/ethnic, geographic, socioeconomic, or other characteristics, that have significantly higher or lower screening rates. An analysis of sub-group variations could be used to determine specific populations that could be targeted to meet DHSS goal rates.

Type 2 Diabetes
Only two years of BRFSS data ask about both high blood pressure and blood glucose tests, and consequently only these two data points are available.

Figure 1. Blood Glucose Screening Trends, 2009-2011

Blood Glucose Screening
Adults with High Blood Pressure, 2009-2011
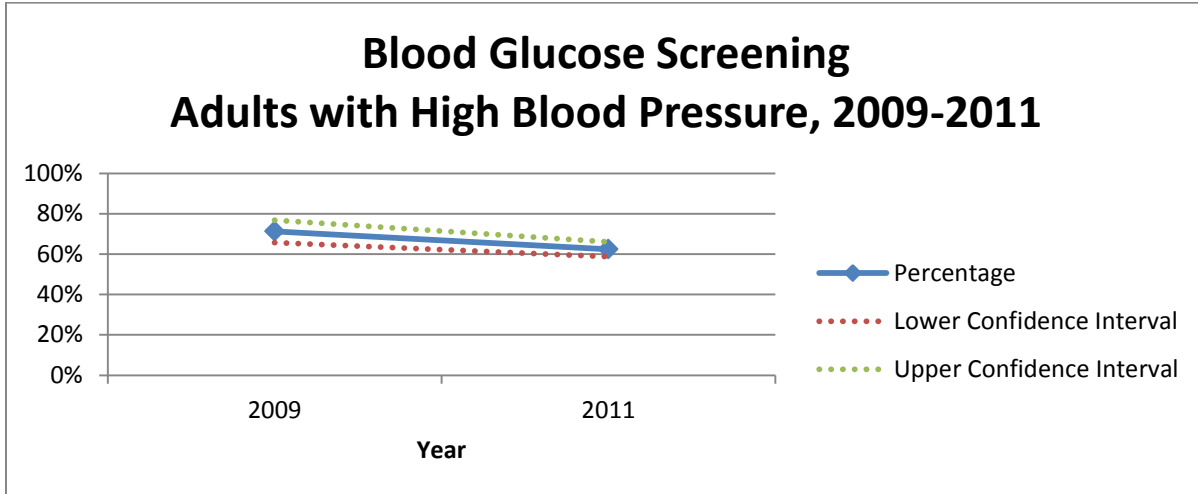
The DHSS goal rate of 74.9% is not significantly different than the 2009 baseline rate of 71.3% (confidence interval range 65.8%-76.8%), given that the goal rate falls within the confidence interval. The two data points are also not significantly different from one another, given that their confidence intervals overlap. However, since there are only two data points, further data would be needed to make supported conclusions about trends.

Lipid Disorders
Adult BRFSS respondents in Alaska have indicated on odd year surveys whether or not they've had their blood cholesterol checked within the last five years. The following chart summarizes those trends for the USPSTF population recommended to be screened regardless of their risk of cardiovascular disease, men age 35 and older.

Figure 2. Cholesterol Screening Trends, 1997-2011

Cholesterol Screening
Men Age 35+, 1997-2011
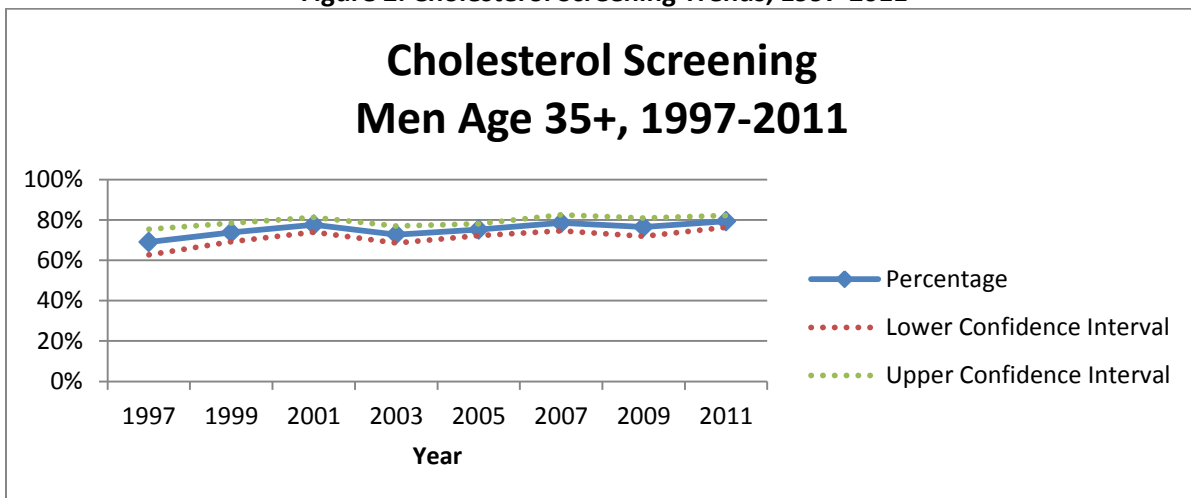
The DHSS goal rate of 80.3% is within the 95% confidence intervals of each rate since 2007, indicating that the goal rate is not significantly different from any of these previous rates. As of 2011, the percentage of men age 35 and older who reported having a cholesterol test in the past 5 years was 79% (confidence interval range 76%-82%). If current trends continue, future rates will continue to increase.

USPSTF also recommends lipid disorder screening for both men age 20-35 and women age 20 and older who have increased risk for coronary heart disease. Further research would be required to determine what the parameters of "increased risk for coronary heart disease" are, if there are BRFSS indicators for those parameters, and whether there is available data to track the screening rates of those populations.

Aspirin for CVD Prevention
The questions "Do you take aspirin daily or every other day?" and "Do you have a health problem or condition that makes taking aspirin unsafe for you?" were both asked on the BRFSS in 2003 and 2009.

Figure 3. Aspirin for the Prevention of Cardiovascular Disease (CVD) Trends, 2003-2009
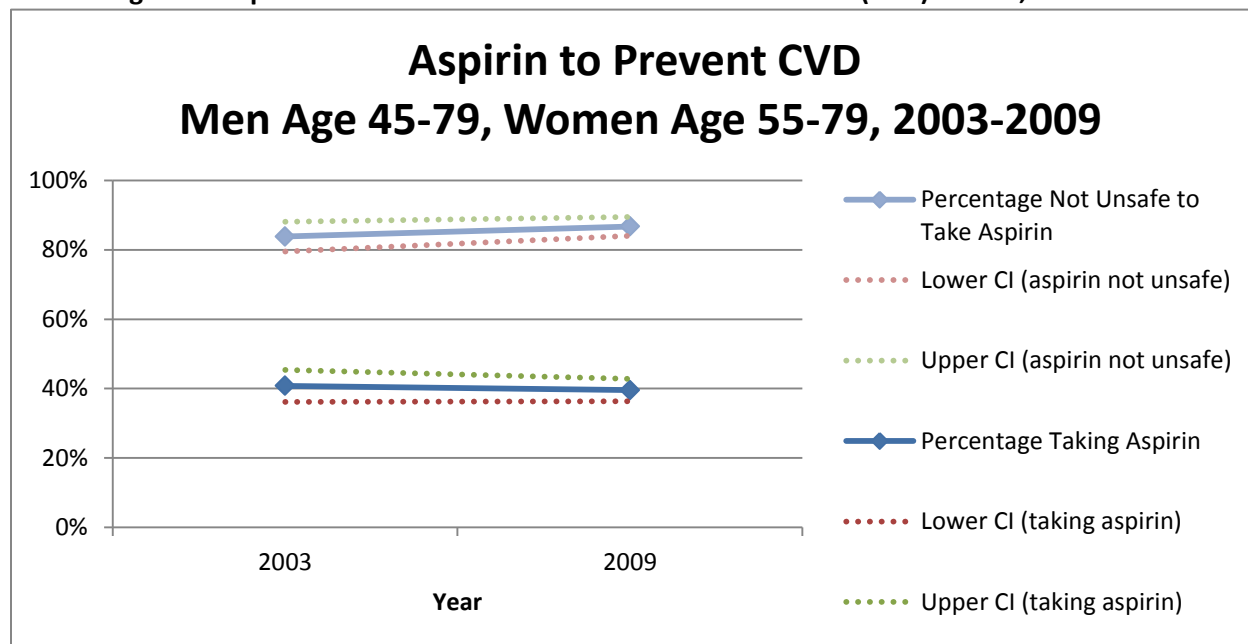
In 2009, approximately 87% of BRFSS respondents in the target population did not have a health problem or condition where it was unsafe to take aspirin, while approximately 40% of respondents were taking aspirin either every day or every other day. While there is a sizable gap between those two percentages, it should be noted that approximately 13% of 2009 BRFSS respondents in the target population had health conditions or problems that made it unsafe to take aspirin. Strategies to increase the number of individuals taking aspirin should avoid increasing the number of individuals taking aspirin for whom it is unsafe. Further data analysis would be required to determine the number of BRFSS respondents taking aspirin outside of the target population, or those taking aspirin who have indicated that it is unsafe for them. A different baseline rate could also be calculated from the number of BRFSS respondents within the target population who have responded that they are both taking aspirin and that it is not unsafe for them.

The DHSS goal rate of 41.6% is not statistically significantly different from either the 2003 rate of 40.8% (confidence interval range 36.1%-45.4%), or the 2009 baseline rate of 39.6% (confidence interval range

36.4%-42.8%). With only two points of data, supported information about trends cannot be concluded. Further data collection would be needed to determine possible trends.

Tobacco – Ask, Advise

Supplemental BRFSS respondents were asked questions about their interactions with providers regarding tobacco. However, these questions were not asked of every BRFSS respondent, but only to respondents who answered a variety of screening questions, detailed below each graph.

Figure 4. Tobacco Trends: Asked About Smoking, 2001-2012
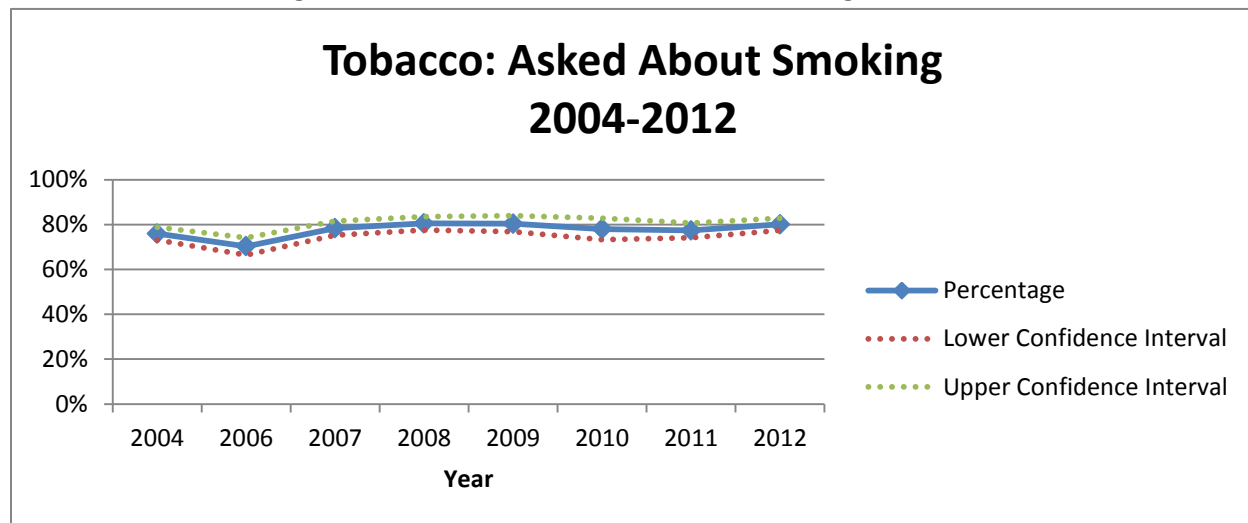
If a BRFSS respondent had;
- Seen a healthcare provider in the past 12 months

AND
- Was a current smoker, but had not been advised to quit by a provider in the past 12 months

OR
- Was not a current smoker

then the BRFSS respondent was asked whether a provider had asked if they had smoked or not.

The presence of screening questions on this indicator is different from other BRFSS indicators that ask the same question to all BRFSS respondents, or all respondents within a given population (i.e. age and gender restricted). Because of these screening questions, this rate measures a different group of individuals than other indicators. However, if the methodology does not change between years, than the data is comparable across time points. The baseline rate in 2008 was 80.5% (confidence interval range 77.6% to 83.5%). As the rate has not changed significantly between 2004-2012, the DHSS goal rate of 84.5% is a significant increase from both the goal rate, and every measured rate from 2004-2012. If current trends continue, the rate of selected respondents asked by a provider about smoking is not expected to increase significantly.

Figure 5. Tobacco Trends: Advised to Quit Smoking, 2001-2012

Tobacco: Current Smokers Advised to Quit 2001-2012
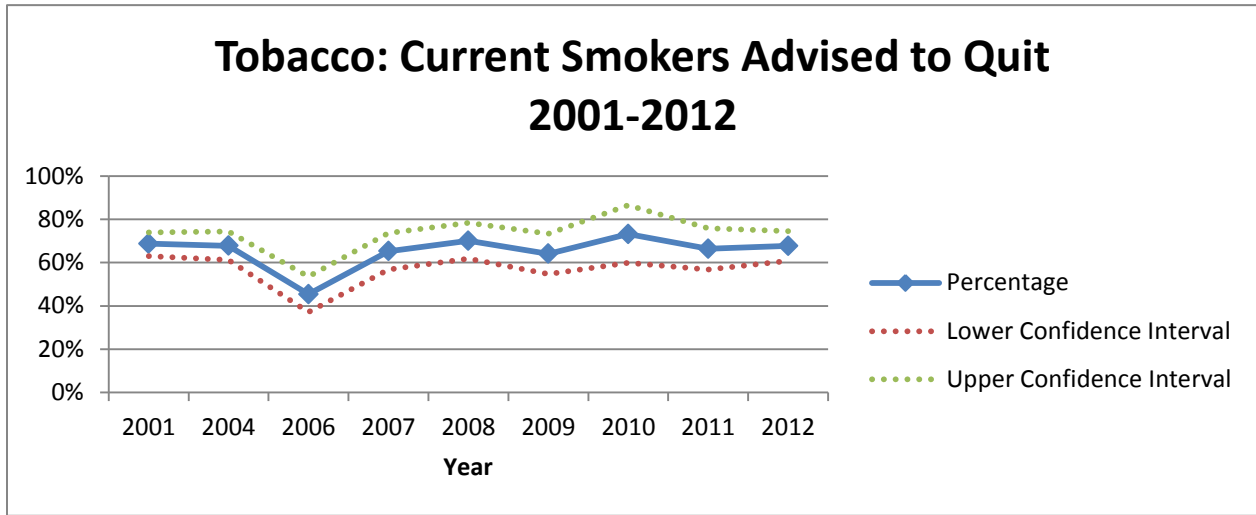
BRFSS respondents were only asked this indicator if they had:
- Seen a healthcare provider in the last 12 months
  AND
- Had reported that they currently smoked

Approximately 70.1% of these respondents were advised to quit by their provider in 2008 (confidence interval range 61.8%-78.3%). The DHSS goal rate of 73.6% is not significantly different from either the 2008 baseline rate, or from any rate since 2001, except 2006. Further research would be needed to determine potential causes of the significant decrease in 2006. As the rate has remained relatively constant since 2001 (excepting 2006), the rate is not predicted to increase substantially if current trends continue.

Colorectal Cancer Screening
BRFSS respondents were asked two questions related to colorectal cancer screening - whether they had ever had a sigmoidoscopy or colonoscopy, and whether they had ever had a blood stool test. DHSS staff sorted the data to provide a rate for the USPSTF recommended population of adults age 50-75 who had ever had a colonoscopy, sigmoidoscopy, or a blood stool test.

Figure 6. Colorectal Cancer Screening Trends, 1997-2012

Colorectal Cancer Screening
Age 50-75, 1997-2012
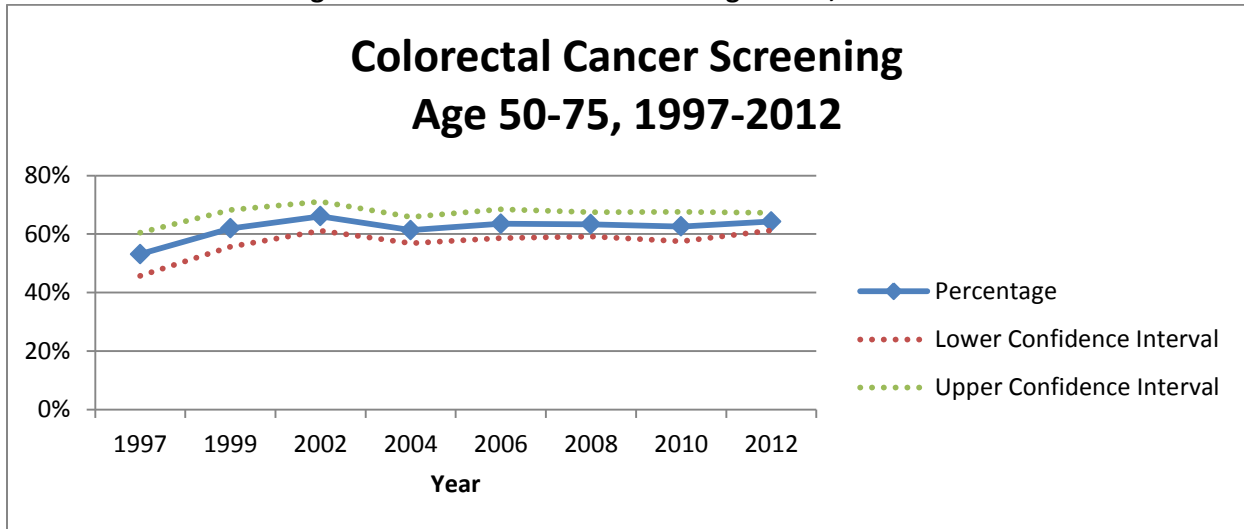
While the rate of individuals aged 50-75 who've ever been screened for colorectal cancer trended upward between 1997 to 2002, it has remained relatively stable from 1999 to 2012. The 2008 baseline rate of colorectal cancer screening for ages 50-75 is 63.3% (confidence interval range 58.7%-68.4%). The DHSS goal rate of 66.5% is not significantly different from the 2008 baseline rate, or from any rate recorded since 1999. However, if current trends continue, the rate of adults age 50-75 who have ever received a colonoscopy, sigmoidoscopy, or blood stool test is not predicted to increase substantially.

Breast Cancer Screening

The BRFSS includes data on how many women have received mammograms in the past two years, sorted by DHSS staff to represent the USPSTF recommended population of women ages 50-74.

Figure 7. Breast Cancer Screening Trends, 1997-2002

Mammogram in Past Two Years
Women Age 50-74, 1997-2012
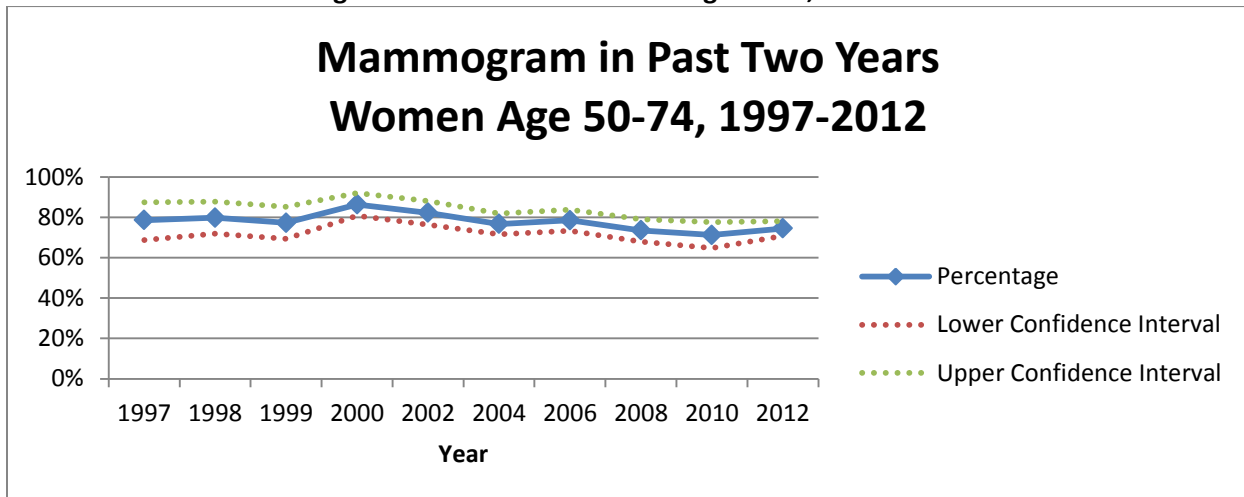
The rate of women age 50-74 who reported receiving a mammogram in the past two years has remained relatively stable since 1997, despite a slight peak in 2000. Further research would be required to determine potential causes of the spike in 2000. In 2008, a baseline rate of 73.5% was recorded (confidence intervals 68.0% to 79.0%), setting the DHSS goal of 77.2%. This goal rate is not significantly different from any recorded rate except for the year 2000. If current trends continue, the rate is not predicted to change substantially.

Cervical Cancer Screening

Cervical Cancer Screening

Female BRFSS respondents answered women's health questions about breast and cervical cancer, including an indicator asking if the respondent has ever had a Pap test. DHSS staff adjusted the rate to reflect the USPSTF recommended population of women age 21-65. USPSTF also recommends that women without a cervix not be screened unless they have a history of cervical cancer or high-grade precancerous lesions. Further research would be needed to determine if individuals without a cervix who are not at increased risk could be adjusted out of the screening rates.

Figure 8. Cervical Cancer Screening Trends, 1997-2012
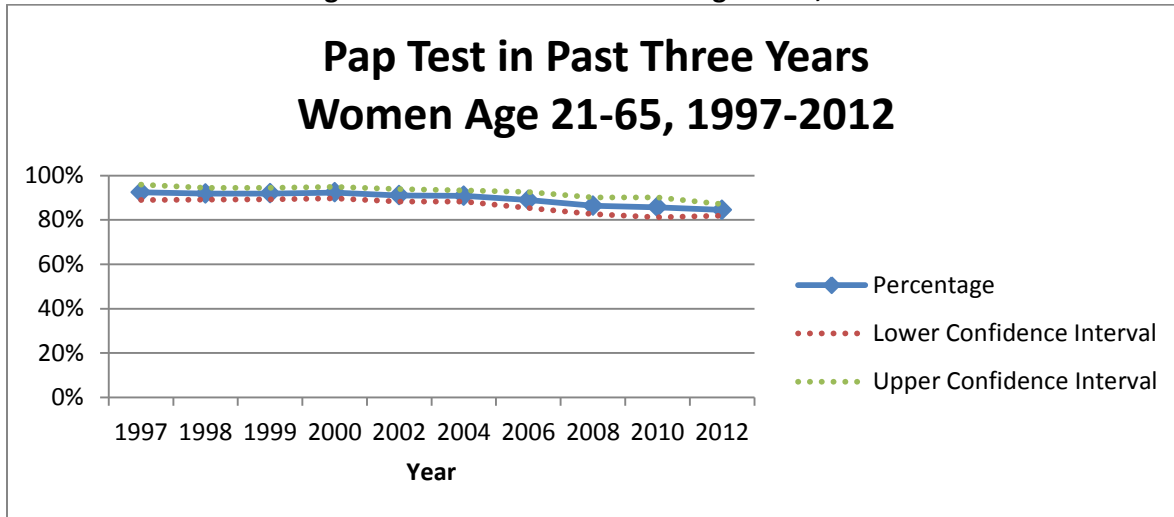
The rate of women ages 21-65 receiving a pap test in the last three years has trended gradually downward since 1997. The 2008 baseline rate of 86.4% (confidence interval range 82.6%-90.2%) is significantly lower than rates at each time point between 1997 and 2004. The DHSS goal rate of 90.7% is significantly higher than both the goal rate and rates in 2010 and 2012. If current trends continue, the rate of pap smears is expected to continue to decrease. Further research would be required to determine if these falling rates reflect the USPSTF recommendations that lengthened the screening interval to three years for women age 21-65, and allowed a lengthened interval of up to five years for women age 30-65.

Current Practices

Key informants shared their perspectives on current practices in regards to the ten identified key screenings/clinical guidelines. Interviewees communicated ways they disseminated information about preventive screenings, how often their patients initiated conversations about each of the ten screenings/guidelines, and how often they as providers initiated conversations about each of the ten screenings/guidelines. Emergent themes are contextualized with relevant findings from the literature.

Information Dissemination

Key informants distributed information to their patients in a variety of ways. The following table summarizes the findings:

Table 2. Method of Distribution of Preventive Screenings Information from Provider to Patient

Method of Distribution of Preventive Screenings Information	Number and Percent of Key Informants Utilizing Method		
	Anchorage (n=8)	Non-Anchorage (n=7)	Total (n=15)
Verbal	8 (100%)	7 (100%)	15 (100%)
Brochures	7 (88%)	7 (100%)	14 (93%)
Websites	7 (88%)	5 (71%)	12 (80%)
Booklets	5 (63%)	5 (71%)	10 (67%)
Referral to Nonprofit Organization for Additional Information	5 (63%)	4 (57%)	9 (60%)
Referral to Specific People, most often to a specialist or individual with specialized skills	6 (75%)	3 (43%)	9 (60%)
Blogs	1 (13%)	0 (0%)	1 (7%)
Forums	0 (0%)	0 (0%)	0 (0%

While all interviewed providers disseminated information through one-on-one education (see section on One-on-One Education in Best Practices for more information), 93% (14/15) distributed brochures on preventive screenings, or had brochures available for patients. Most key informants, also provided information in the form of booklets (67%, 10/15), referrals to nonprofit organizations (60%, 9/15) and referrals to specific people (60%, 9/15). Only one individual referred patients to blogs, and no key informants referred their patients to forums.

No thematic differences emerged between Anchorage and non-Anchorage urban providers in regards to their methods of disseminating information. However, non-Anchorage providers noted referring patients to specific people less often than in Anchorage, potentially due to a lack of available resources or specialists within their communities.

In examining sources of patient information, key informants shared that they valued evidence-based, unbiased, up to date, accurate, disease specific, and widely accepted sources. Key informants requested information accessible to their patients, in terms of the reading level, cultural relevancy, and message tailored to their patients' demographic. Several providers also noted that they printed information for patients from websites they trusted, or from their electronic health records. In mentioning specific sources that providers felt were helpful to patients, sources including Mayo Clinic, UpToDate, U.S. Preventive Services Task Force (UPSTF), Agency for Healthcare Research and Quality (AHRQ), and Centers for Disease Control (CDC) were mentioned. Several professional organizations and disease specific organizations were also mentioned, including the American Cancer Society, American Heart

Association, and the American Congress of Obstetrics and Gynecology. Key informants also referred their patients to internal information such as organization specific websites, or material printed from those websites.

The complex nature of information from internet searches arose during the interviews. While key informants recommended specific websites to their patients, they also noted that internet searches could lead to harmful information for patients. Key informants articulated the complexity of patients' having so much information available and accessible via the internet that includes anecdotal and biased information. Key informants expressed concern over harmful biases in websites stemming from the marketing of products, or political or religious agendas.

While the key informant interviews were conducted only with providers located in Alaska's urban areas, Alaska's rural areas are served in significantly different ways than the state's urban centers. Non-Anchorage key informants spoke of different needs for rural patients, who they tangentially served in their practices. Alaska's rural healthcare system is comprised of clinics and hospitals offering services at regional and sub-regional hub communities, while approximately 50,000 Alaskans, both Alaska Native and non-Native, in 178 communities receive primary care provided by tribally-employed Community Health Aides/Practitioners (CHA/Ps) (Golnick et al, 2012). As the key informants were all based in urban areas of Alaska, the perspectives of rural providers are not represented in the key informant interviews. Further research would be needed to determine the perspectives and practices of providers in Anchorage's non-urban areas, including providers at regional and sub-regional hubs, as well as community health aides as the primary care providers to residents of Alaska's remote communities.

The literature review revealed some information on the importance of building connections with CHA/Ps to promote cancer screening within their communities in rural Alaska. Efforts to provide cancer education and health promotion include the development, implementation, and evaluation of a manual and curriculum (M. Cueva, 2011), readers' theatre scripts (M. Cueva, 2005; M. Cueva, 2010; M. Cueva, 2012), DVDs, interactive CD-ROMs, brochures, digital stories (M. Cueva, 2013), web-based resources, distance-delivered CHAP continuing education, and culturally responsive face-to-face courses (M. Cueva, 2012; M. Cueva, 2012).

Desired Educational Materials
All key informants were asked what kind of materials they would like to have to educate patients about preventive screenings/guidelines, if those materials were provided. In response, providers identified both the format of desired educational materials, as well as the style of the content in those materials. While several key informants expressed that they would prefer written materials, such as a brochure or booklet that could be handed to patients, or posters to put in high traffic areas, some expressed a desire for DVDs to show in waiting rooms. However, there was no clear consensus on the format of desired material, with some respondents specifically mentioning that they didn't need more brochures, posters, or mailings, and others interested in interactive videos, breast check shower cards, a vetted list of apps or website links, or rack cards.

Providers expressed a desire to have accessible educational materials that were evidence-based and targeted specific population groups. They spoke of their diverse patient populations, including ethnic/racial variations (Hmong, Vietnamese, Alaska Native, Caucasian, etc.), linguistic diversity, as well as differences in age and gender, and asked for materials created in a style that would appeal to specific populations that they encountered in their practice. Providers also mentioned a need to target materials to specific types of screenings, mentioning their experiences using different communication

techniques to support patients to get different screenings (humorous for colorectal, serious for mammograms, etc.).

Patient-Initiated Conversations

Key informants were invited to share how often their patients initiated conversations with them about each of the ten screenings/guidelines. The findings are summarized in the table below by respondents in Anchorage vs. non-Anchorage urban areas:

Table 3. Frequency of Patient-Initiated Conversations

Preventive Screening/Guideline	Number of Key Informants Reporting Frequency of Patient-Initiated Conversation					
	Never		Rarely/Sometimes		Often	
	Anc.	Non-Anc.	Anc.	Non-Anc.	Anc.	Non-Anc.
Diabetes	0	0	8	7	0	0
Blood Pressure	1	0	7	6	0	1
Lipid Disorders	2	0	4	4	2	3
Aspirin for CVD	2	1	6	6	0	0
Tobacco Prevention/Cessation	1	0	4	5	3	2
Colorectal Cancer	2	1	3	3	3	3
Breast Cancer	1	2	5	1	2	4
Cervical Cancer	0	0	5	2	3	5
Obesity	2	1	5	6	1	0
Falls Prevention	4	2	3	5	1	0

No thematic differences between urban non-Anchorage and Anchorage-based providers emerged, however both Anchorage and non-Anchorage urban providers reported that the frequency of conversations differed by screening. Key informants shared that their patients initiated conversations with them more often about lipid disorders, tobacco prevention/cessation, colorectal, breast, and cervical cancer. Providers also noted that patients have recently been initiating conversations about breast and cervical cancer screenings more frequently, due to the changes in screening guidelines. While conversations about cervical cancer screenings were more frequently initiated by patients than other screenings/guidelines, this may be due to the relatively high number of women's health care providers who were interviewed as key informants. Almost all of these women's health care providers reported that their patients' often initiated conversations about cervical cancer screenings because they were visiting a women's healthcare provider.

Provider Sources of Information
During the key informant interviews, providers shared how they obtained information on preventive screenings and guidelines. The results are summarized in the table below:

Table 4. Provider Sources of Information

Information Source	Number and Percentage of Key Informants by Sources of Information		
	Anchorage	Non-Anchorage	Total
Specific Websites	8 (100%)	7 (100%)	15 (100%)
Continuing Education	7 (88%)	7 (100%)	14 (93%)
Professional Meetings	6 (75%)	7 (100%)	13 (87%)
Newsletters/Mailings	6 (75%)	5 (71%)	11 (73%)
Internet Searches	4 (50%)	6 (85%)	10 (67%)
Asking Colleagues	4 (50%)	6 (85%)	10 (67%)
Journals	4 (50%)	2 (29%)	6 (40%)
Specific Apps	3 (38%)	1 (14%)	4 (27%)

All Anchorage and non-Anchorage urban providers reported using specific websites to obtain information on preventive screenings and guidelines. The most frequently named specific website was the US Preventive Services Task Force (USPSTF), although providers also mentioned professional websites, such as the American Congress of Obstetricians and Gynecologists (ACOG), as well as CDC, MayoClinic, and UpToDate.

While non-Anchorage urban key informants relied on newsletters and mailings a bit less than Anchorage-based key informants, they also used Internet searches and asking colleagues a bit more. However, key informants in both regions reported the use of professional meetings and continuing education with about equal frequency. They shared that they often relied on specific websites, continuing education, professional meetings, journals, and professional organizations to receive updates on preventive screenings and guidelines.

A closer look at the U.S. Preventive Services Task Force recommendations reveals that they provide recommendations on clinical preventive health services. Their recommendations are organized in five categories:

- A: Strongly Recommended
- B: Recommended
- C: No Recommendation
- D: Not Recommended
- I: Insufficient Evidence to Make a Recommendation

Given the high level of key informant trust in the USPSTF recommendations, the following table details both the USPSTF recommendations as well as the most recent known Alaska screening rates:

Table 5. USPSTF Recommendations and Alaska Indicators

Topic	Screening	USPSTF Population	USPSTF Grade:	Alaska Indicator (BRFSS)
Type 2 Diabetes	Fasting plasma glucose, 2-hour postload plasma glucose, or hemoglobin A1c	Adults with sustained blood pressure over 135/80 mm Hg.	B: Recommended	Proportion of adults without diabetes who have had a test for high blood sugar in the past 3 years
Blood Pressure	Test of blood pressure	Adults, age 18+	A: Strongly Recommended	No known indicator asking if provider has tested blood pressure
Lipid Disorders	Blood test for total cholesterol or HDL-C	Men, age 35+	A: Strongly Recommended	Proportion of adults who have had a cholesterol test in past 5 years
		Men, age 20-35 w/increased risk	B: Recommended	
		Women, age 45+	A: Strongly Recommended	
		Women, age 20-45 w/increased risk	B: Recommended	
Aspirin for CVD Prevention	Ask, Advise. Optimum dosage is not known	Men, age 45-79 years, when benefits outweigh risks	A: Strongly Recommended	Proportion of adults who take aspirin daily or every other day, percentage of adults who cannot take aspirin due to a health problem or condition
		Women, age 55-79 years, when benefits outweigh risks	A: Strongly Recommended	
		Women, age <55 Men, age<45	D: Not Recommended	
Tobacco-Ask, Advise	Primacy care clinicians provide education and brief counseling, cessation interventions for those who use tobacco products, and pregnancy-tailored counseling for pregnant women who smoke	School-aged children and adolescents	B: Recommended	Of individuals who report seeing a healthcare provider in the past year: percentage of current smokers asked to quit smoking by a provider, and percentage of individuals asked if they smoke by a provider (who are not current smokers, or were not advised to quit by a provider in the past 12 months)
		All adults	A: Strongly Recommended	

Topic	Screening	USPSTF Population	USPSTF Grade:	Alaska Indicator (BRFSS)
Colorectal Cancer	Fecal Occult Testing, Sigmoidoscopy, or Colonoscopy	50-75 years	A: Strongly Recommended	Ever had a sigmoidoscop, colonoscopy, or blood stool test, age 50+
		76-85 years	C: No Recommendation (Dependent on Individual)	
Breast Cancer	Biennial Mammography	Women, 50-74 years	B: Recommended	Mammogram received in past two years, women aged 50+
		Women, <50 years	C: No Recommendation (Dependent on individual)	
Cervical Cancer	Pap Smear every 3 years	Women, aged 21-30[1]	A: Strongly Recommended	Pap test in last 3 years, women aged 18+
	Pap Smear and HPV test every 5 years	Women, aged 30-65[2]	A: Strongly Recommended	
Obesity	Clinicians screen patients and refer to behavioral interventions	Children, age 6 and older	B: Recommended	No known indicator asking if a provider has screened for obesity
		All adults	B: Recommended	
Falls Prevention	Exercise/physical therapy and Vitamin D supplementation	Community-dwelling adults, age 65+	B: Recommended	No known indicator asking if a provider has screened to prevent falls
	In-depth multifactorial risk assessment	Community-dwelling adults, age 65+	C: No Recommendation (Does not recommend, likelihood of benefit is small, may be appropriate in individual cases)	

This table highlights uncertainties that providers may be encountering on their search for preventive screening information, as well as gaps in information that would be helpful to determine an increase in screening rates. While the dosage of aspirin for the prevention of cardiovascular disease is unknown, the practice is also recommended against for some populations (USPSTF, 2013). Additionally, no screening procedure for falls prevention is recommended for any population, although the practice of exercise and Vitamin D supplementation is recommended (USPSTF, 2013). In informing the increase of screening rates, a data gap exists in known rates for several of the indicated screenings/guidelines. Some Alaska data must also be adjusted for the USPSTF recommended populations both in calculating baseline and goal rates (see section on Screening Rates), as well as in measuring achievement of goals.

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[1] USPSTF recommends screening women 3 years after beginning sexual activity, or the age of 21, whichever comes first. Annual screening is appropriate until a woman has had 2-3 consecutive normal Pap tests.
[2] USPSTF recommends screening every three years, but five years is permissible if women want to lengthen the screening interval

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Provider-Initiated Conversations

Key informants were invited to share how often they initiated conversations with their patients about each of the ten screenings/guidelines. The findings are summarized in the table below:

Table 6. Frequency of Provider-Initiated Conversations

	Number of Key Informants Reporting Frequency of Patient-Initiated Conversation					
	Never		**Rarely/Sometimes**		**Often**	
Screening/Guideline	**Anc.**	**Non-Anc.**	**Anc.**	**Non-Anc.**	**Anc.**	**Non-Anc.**
Diabetes	0	0	2	5	6	2
Blood Pressure	0	0	1	1	7	6
Lipid Disorders	1	0	0	3	7	4
Aspirin for CVD	2	0	3	7	3	0
Tobacco Prevention/Cessation	0	0	2	1	6	6
Colorectal Cancer	0	0	1	0	7	7
Breast Cancer	0	0	1	0	7	7
Cervical Cancer	1	0	2	1	5	6
Obesity	0	0	3	3	5	4
Falls Prevention	2	1	3	5	3	1

Key informants reported communicating with their patients more often about colorectal cancer, breast cancer, and blood pressure screenings, while communicating far less frequently with patients on aspirin for cardiovascular disease and falls prevention. Anchorage based providers communicated more often with patients than non-Anchorage urban providers about diabetes screenings and lipid disorders, and less often on cervical cancer screenings. Key informants varying frequencies of initiating conversations with their patients is consistent with national studies that have found communication inconsistent with screening guidelines and recommendations, potentially due to variations in specialty, training, and patient demographics. A study of 3800 university students in North Carolina found that, of those who had visited their student health center, only 62% reported being screened for tobacco use (Sutfin, 2012). Further, of students who were screened and reported tobacco use, only half reported being advised to quit or reduce their tobacco use (Sutfin, 2012). In a national study of provider practices related to breast cancer screening, clinical practice varied by medical specialty and training (Wallace, 2006). Family practitioners and internists were discovered to refer patients to mammography on about 20% of preventive health care visits, while gynecologists referred patients to mammography approximately 53% of preventive health care visits, which may represent adherence to USPSTF recommendations, as well as differences in patient demographics (Wallace, 2006). Key informants interviewed for this report shared that several factors mediated their decision on whether or not to discuss a preventive screening/guideline with patients, including the patient's demographic, their role on the healthcare team, and their trust of the screening/guideline.

Patient Demographic

During key informant interviews, a common theme of tailoring conversations to individual patients emerged. Providers shared that they communicated information with patients relevant to patients' specific demographics, as well as in a manner relevant to the patient's background and values. Several providers spoke specifically about falls prevention, noting that they rarely saw patients within a demographic appropriate for the screening, and consequently did not often initiate a conversation

about it. Some providers also noted that they did not often initiate conversations about blood pressure screening since the screening is done at every patient visit, and a conversation only happens when it is indicated by the screening.

Provider's Role on the Healthcare Team
Providers shared that they spoke with patients more about screenings within their purview. Consequently, providers in geriatric care facilities initiated conversations with patients more often about falls prevention. A couple of the non-physician key informants worked in teams, and consequently did not counsel patients on screenings that they felt were the responsibility of the physician.

Provider Trust of Screenings/Guidelines
Key informants reported a critical awareness of the guideline creation process and a familiarity with literature that both supported and disputed the recommended screenings/guidelines. Illustrated by the recent changes in recommended screenings for prostate cancer, breast cancer, and cervical cancer, providers shared an awareness that screenings and guidelines are subject to change. Key informants pointed to emerging evidence that may change recommendations, and noted that recommended screenings/guidelines may not be appropriate for every patient.

Providers specifically mentioned a lack of convincing literature on recommending aspirin to prevent cardiovascular disease, particularly in women, which may reflect USPSTF guidelines against recommending aspirin for women under age 55. In addition, providers shared that Medicare has only recently begun reimbursing providers who ask patients questions on falls prevention during an initial "Welcome to Medicare" exam and annual wellness visits. Consequently, while some providers shared that falls prevention was not part of their normal recommendations for patients, potentially due to the lack of a USPSTF recommendation, a few providers noted that they had recently begun to have those conversations due to Medicare's reimbursement.

Due to the providers heightened awareness of both guideline-related literature and the specificity and limitations of USPSTF guidelines, key informants expressed a critical view of a campaign to increase across-the-board screening rates. Despite this wariness towards advocating for increasing screenings/guidelines, most key informants mentioned the US Preventive Services Task Force (USPSTF) as a source of evidence-based information. Even the key informants most concerned about potential negative effects of increasing screening rates, such as an increase in inappropriate screenings, noted that they followed and trusted USPSTF guidelines. Consequently, a campaign to increase provider recommendations for screenings may be more effective if done in adherence to USPSTF guidelines. As noted in the section on Provider Sources of Information, the USPSTF currently does not recommend a screening for falls prevention for any population, which may account for the lack of incorporation of falls prevention into many providers' conversations with patients (USPSTF, 2012). For provider-oriented best practices to increase preventive screenings in line with USPSTF guidelines, see the sections on Clinical Decision-Support Systems/Provider Reminder Systems and Provider Assessment and Feedback.

Best Practices to Promote Preventive Screenings/Guidelines

Initial research on best practices to promote preventive screenings/guidelines began with recommendations from systematic reviews conducted by the Community Preventive Services Task Force (CPSTF) for each of the ten recommended screenings/guidelines. A systematic review is a document created from a "rigorous, replicable" evaluation of the available scientific literature on a given topic (CPSTF, 2013). In the creation of this report, recommendations from CPSTF, published on The Guide to Community Preventive Services website (The Community Guide) were examined in April and August 2013. These recommendations are organized in the table below by intervention type and screening/guideline. A check indicates that the intervention has been recommended by The Community Guide for the specified screening, and is linked to the specific Community Guide web page for further information.

Interventions recommended by the Community Guide for any of the specified ten screenings/clinical guidelines are included in the table below. No recommendations are provided by the community guide for falls prevention. Interventions that were examined, but not recommended by the Community Guide for any of the ten specified screenings are not included in the table, including those where insufficient evidence was documented. Interventions that were recommended by The Community Guide, but are not specific to increasing preventive screenings rates are also not included, for example, those referring to management and control of disease.

The key informants were asked their perceptions of the effectiveness of each of the interventions listed on the table below for Alaskan medical providers, as well as whether or not they used each of the methods to increase patient preventive screening rates. A summary of their responses, integrated with findings from the literature, is organized by intervention type below the table.

Table 7. The Community Guide Recommendations to Promote Selected Screenings/Clinical Guidelines

Intervention	Type 2 Diabetes	High Blood Pressure	Lipid Disorders	Cardiovascular Disease	Tobacco Prevention	Colorectal Cancer	Breast Cancer	Cervical Cancer	Obesity	Falls Prevention[3]
Clinical Decision-Support Systems / Provider Reminder System	✓[4]	✓[4]	✓[4]	✓	✓	✓	✓	✓	Insufficient Evidence	
Reducing Out-of-Pocket Costs		✓[4]	✓[4]	✓		Insufficient Evidence	✓	Insufficient Evidence		
Provider Assessment and Feedback					Insufficient Evidence	✓	✓	✓	Insufficient Evidence	
Client Reminders						✓	✓	✓		
Small Media						✓	✓	✓		
One-on-One Education						✓	✓	✓		
Reducing Structural Barriers for Clients						✓	✓	Insufficient Evidence		
Group Education						Insufficient Evidence	✓	Insufficient Evidence		
Mass Reach Health Communication					✓					

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[3] The Community Guide does not provide recommendations pertinent to falls prevention.

[4] The Community Guide does not include recommendations specifically to increase screenings for Type 2 diabetes, the use of aspirin to prevent cardiovascular disease, or lipid disorders. However, recommendations to use a CDSS to prevent cardiovascular disease (CVD) include "Reminders for overdue CVD preventive services including screening for CVD risk factors such as high blood pressure, diabetes, and high cholesterol", while recommendations to reduce out of pocket costs to prevent cardiovascular disease include "Reducing out-of-pocket costs for patients was associated with improvements in medication adherence, and blood pressure and cholesterol outcomes".

Clinical Decision Support System or Provider Reminder System
Nine of the specified ten screenings/clinical guidelines are recommended by The Community Guide to be promoted by either a clinical decision support system (CDSS) or a provider reminder system. A CDSS is comprised of computer-based information to assist healthcare providers in implementing clinical guidelines at the point of care, based on individual patient data (Guide to Community Preventive Services, 2013), and there is strong evidence to support the use of a CDSS to improve the order and completion of recommended preventive care (Bright et al, 2012). While the term "Clinical Decision Support System" is used in many of the Community Guide recommendations, the term "Provider Reminder and Recall System" is used for a similar system in reference to promoting cancer screenings. The Community Guide defines this system as any method that informs providers that a patient is due for a screening, termed "reminders", or that a patient is overdue for a screening, termed "recall". While this serves the same function as a CDSS in informing providers of needed preventive measures, it does not have to be computer-based (The Community Guide, 2006). A systematic review of clinical decision support systems further identified four features as independent predictors of improved clinical practice; recommendations rather than assessments, automatic recommendations as part of provider workflow, computer-generated decision support, and recommendations at the time and location of decision making (Kawamoto, 2005).

Almost all (93%, 14/15) of the key informants used an electronic system to remind them to check with patients about specific screenings and guidelines, and all of them felt like such a system would be effective with Alaskan medical providers. However, some providers were concerned about the difficult user-interface of their electronic systems, the difficulty of integrating the system into patient care, and the potential encouragement of inappropriate screenings. To address similar concerns, the development of one CDSS for cervical cancer screening involved potential end-user care providers who were able to provide recommendations and identify CDSS errors that were subsequently corrected (Wagholikar, 2013).

Reducing Out of Pocket Costs
The most prevalent theme from the key informant interviews was the need to reduce costs for patients to attain screenings/follow guidelines. Reducing out of pocket costs is recommended by the Community Guide as an effective intervention for both prevention of cardiovascular disease and promoting breast cancer screenings, while there is insufficient evidence for its impact on colorectal and cervical cancer screenings.

However, the Affordable Care Act mandates coverage for several screenings. Key informants shared that coverage by the Affordable Care Act hasn't yet been communicated to patients, and when patients become aware that the recommended screenings/guidelines are covered, they are much more likely to get them. The following table highlights the US Preventive Services Task Force recommendations per screening and the mandated coverage by Marketplace insurance plans. The Affordable Care Act (ACA) creates a Health Insurance Marketplace (Marketplace) where individuals can view available insurance plans within their region. Plans regulated by ACA, including plans available on the Marketplace, are subject to providing coverage of specific preventive screenings without charging patients a copayment or coinsurance even if the individual hasn't met their deductible (healthcare.gov). However, this coverage is only guaranteed to specific demographics, and when a consumer uses a network provider, so further research would be required to determine the potential impact of this policy on Alaskan healthcare consumers, including how many Alaskans become covered as a result of ACA, how many become covered with plans regulated by ACA, and how many will access network providers.

Table 8. USPSTF Recommendations, ACA Coverage, and Differences Between Coverage and Recommendation (USPSTF; healthcare.gov)

Screening	USPSTF Recommended Demographic	ACA Mandated Coverage Demographic	Differences in Demographic Groups:
Type 2 Diabetes	Adults with high blood pressure	Adults with high blood pressure	Same demographics in both
High Blood Pressure	All adults	• All adults • Children 0-4 mo., 1-17 yrs.	Children also covered under ACA
Lipid Disorders	• Men age 35 and older • Men age 20-35 at increased risk • Women age 20 and older at increased risk	• Men age 35 and older • Men under 35 who have heart disease or risk factors • Women who have heart disease or risk factors • Children at higher risk of lipid disorders aged 1-17 yrs.	Children and men under 20 also covered under ACA
Aspirin for Prevention of Cardiovascular Disease	• Men age 45-79 when benefit greater than risk • Women age 55-79 when benefit greater than risk	• Men age 45-79 with doctor recommendation • Women age 55-79 with doctor recommendation	Same demographics in both
Tobacco Prevention and Cessation	• Screening for all adults • Cessation interventions for tobacco users • Interventions to prevent initiation of tobacco use in children and adolescents	• Screening for all adults • Cessation interventions for tobacco users	Children and adolescents not covered under ACA
Colorectal Cancer Screenings	Age 50-75	Adults over 50	Adults over 75 also covered under ACA
Breast Cancer Screenings	Biennial mammography for women age 50-74 years	Mammography every 1-2 years for women over age 40	Women 40-50 and decreased time interval covered under ACA
Cervical Cancer Screenings	• Every 3 years for women age 21-65 years (excepting women who have had the cervix removed, except those who have a history of high-grade precancerous lesions or cervical cancer)	• Sexually active women • Every 3 years age 21-29 • Every 3-5 years age 30-65 • Age 66 and older with doctor recommendation	Women under 21, over 66 also covered under ACA
Obesity Screening	• All adults • Children age 6 and over	• All adults • Age of children not specified	Potential difference in children. Not specified under ACA
Falls Prevention	Does not recommend automatic risk assessment	Not included in covered preventive screenings	Same demographics in both

Despite the similarities in what is recommended by the USPSTF and coverage by ACA, key informants shared their frustrations with insurance, including Medicare and Medicaid. Providers noted that, in their experience, a preventive screening office visit has not been reimbursable by Medicare, requiring a patient to come in with an existing issue for the provider to be reimbursed. While Medicare may cover an annual "Wellness visit" in addition to the "Welcome to Medicare" preventive visit, further inquiry would be needed to determine if providers are aware of these benefits, but find them insufficient, or if some providers are unaware of this coverage (Medicare.gov). Providers also shared that a preventive visit can quickly turn into an expensive procedure, specifically noting that a colonoscopy is a covered preventive screening, but if a polyp is found and removed, the code changes and patients are held liable for the billed charges. Providers also mentioned that under-insured and un-insured populations are sometimes the most at risk of not having preventive screenings, and often face some of the highest financial barriers to getting screened. Providers additionally remarked that Alaska's Breast and Cervical Health Check program (BCHC) has improved screening rates for breast and cervical cancer, and that a similar program for colorectal screenings may similarly improve screening rates.

Provider Assessment and Feedback

A review of the literature conducted for The Community Guide concludes that a combination of provider feedback and assessment are effective at increasing screening for breast, cervical, and colorectal cancer (Sabatino, 2012). Assessment evaluates provider performance in regards to preventive screenings, while feedback offers providers information about that performance (Sabatino, 2012). While about half of key informants shared that they use assessment and feedback to improve their preventive screening rates, almost all felt that it would be effective with Alaskan medical providers. Some key informants spoke about internal auditing as assessment, and some referred to patient completed comment cards as a method of feedback. While this best practice is for a combination of provider assessment and feedback, comment cards alone have been evaluated in a four-hospital trial where low response rates were documented and reported scores were biased as a result (Nelson, 1991).

Feedback can also be given to providers based on group rates, such as the percentage of an eligible population screened within a given area or set of patients, and could be compared to a goal or standard (Sabatino, 2012). Key informants also mentioned that in some clinics providers have been compared to each other in a highly visible manner, with the provider having the highest percentage of patients screened receiving recognition, in addition to the motivation to not be at the bottom of the list of providers at the practice. While this was spoken of by providers who had used such a system as motivating, some key informants also felt concerned about potentially increasing screening rates inappropriately, with competition between providers driving them to be less considerate of an individual patient.

Client Reminders

All key informants used client reminders and most felt like they were effective. Client reminders can be text, such as postcards, emails, or letters, or phone calls to patients to remind that that they are due, or over-due for a particular screening (Sabatino, 2012). A review of the literature conducted by Sabatino et al. demonstrates strong evidence that client reminders are effective at increasing breast, colorectal, and cervical cancer screening rates (Sabatino, 2012). However, no conclusive literature has been found during the preparation of this report testing the link between client reminders and additional screenings/guidelines.

Small Media
Small media is the use of videos or printed materials such as letters, brochures or newsletters to inform and motivate people to take preventive measures. While almost all key informants used small media to increase community demand for preventive care, particularly through the dissemination of brochures, only about half felt like it was effective. A systematic review has found strong evidence that small media increase breast, colorectal, and cervical cancer screening rates (Baron et al, 2008). A review of the literature conducted for this report produced no published articles examining the link between small media and any additional screenings/guidelines.

In both the key informant interviews and literature review, a theme of tailoring health messaging to specific demographics emerged. Key informants mentioned that they felt information for patients was most helpful when the patient felt like the message was tailored to the patient. Alaska Native/American Indian individuals have also expressed a desire to see culturally appropriate pictures, models, artwork, and stories in health promotion and messaging materials, including developing Native language materials if appropriate (Lantz, 2003).

One on One Education and Team-Based Care
A common theme shared by all of the key informants was their communication of information on screenings/guidelines to patients verbally during one-on-one conversations. All respondents felt that one-on-one education was an effective method of delivering information. Adequate time with a healthcare provider to receive explanations has been associated with increased colorectal cancer screening rates, particularly in rural areas (Carcaise-Edinboro, 2008; Perkins, 2013; Davis, 2013). However, almost all of the key informants (13/15) identified that there is not enough time for a provider to spend with each patient.

To address both the need for quality communication between a patient and healthcare provider, as well as the lack of physician time, several key informants noted that information on preventive screenings could be provided by another member of the medical team. While key informants were not asked specifically about team-based care, comments on this theme emerged in response to prompts on one-on-one education and longer appointments, as key informants' voiced their concerns about a lack of time for adequate provider-patient interactions. As Klabunde et. al. notes, a team approach shifts the way colorectal screening is delivered "by directly addressing the physician's lack of time for preventive care" (Klabunde, 2007). Testing this theory in practice, the rate of colorectal cancer screening has been documented to increase when nurses were given additional responsibilities, such as the the training of rural Alaskan nurse practitioners and physician assistants in flexible sigmoidoscopy (Thompson, 2000; Redwood, 2009). The team approach to encouraging preventive screenings can include educating clinic staff, administrators, and support employees about screenings to gain their support (Lantz, 2003).

Care managers providing one-on-one telephone calls to patients has been documented to improve breast, cervical, and colorectal cancer screening rates in a large randomized, controlled trial in New York City (Dietrich, 2006), and has also been reported as a strategy in Alaska employed to encourage women to receive a diagnostic follow-up to cancer screenings by assisting with addressing sociocultural barriers, including travel, attitude toward healthcare, and language issues (Lantz, 2003).

During key informant interviews and the literature review, a common theme emerged of tailoring conversations to specific patients and demographics. Providers spoke about sharing personalized information with their patients in a conversation that took into account the patient's health culture, literacy, and values. Providers mentioned that they felt their interactions with patients were more

effective if there was a two-way conversation between the patient and provider that built a partnership, and motivated patients to take steps towards wellness. Providers noted the complexity of behavioral change (i.e. diet, tobacco use, exercise, or receiving a screening), and the need to consider, and respond to, where a patient was on the journey towards behavioral change to effectively support patients. In a national survey examining the association between provider communication and preventive screenings, interactive patient-provider communication (as measured by providers asking for patient input on decision making and providers asking patients about other treatments they had received) was associated with greater adherence to USPSTF recommended preventive screenings (Villani, 2013).

During the literature review, several published articles referenced Alaska's unique cultural diversity. Within an Alaska Native/American Indian context, providing "culturally sensitive care" to build trust among patients was identified in 141 key informant interviews, although many of the recommendations could be applicable to women of a variety of cultural backgrounds (Lantz, 2003). Recommendations for culturally sensitive care included person-to-person recruitment for screenings and follow-up, hiring Native individuals to communicate directly with Native patients, staffing providers who speak the local language to serve women who are more comfortable in that language, employing female providers for "female-related procedures", providing private screenings in a space that isn't overcrowded, being flexible with time, using a "soft, gentle communication style", and allowing at least 30 minutes for a visit to allow time for the provider to explain each step of the examination, proceed slowly, and not rush procedures or communication with patients (Lantz, 2003).

Reducing Structural Barriers for Clients
The Community Preventive Services Task Force systematic reviews have found strong evidence linking reducing non-monetary structural barriers for patients and increasing breast and colorectal cancer screenings (Sabatino, 2012). Structural barriers include the time or distance to a clinic/hospital, hours of service, alternative settings for care, and administrative procedures. When key informants were asked about each of these potential structural barriers, all felt that offering alternative settings for care would be effective with Alaskan medical providers. About 75% (6/8) of Anchorage-based providers felt that time/distance to a clinic/hospital was a significant or moderate barrier, contrasting with 86% (6/7) of the non-Anchorage urban providers. This difference was also noticeable in the number of providers who saw moderate to significant barriers to care from hours of service (6/7 non-Anchorage vs. 4/8 Anchorage-based providers) or administrative procedures (5/7 non-Anchorage vs. 3/8 Anchorage-based providers).

Time/Distance to the Clinic/Hospital and Alternative Settings for Care
Key informants in non-Anchorage urban areas noted that distance to care is a larger barrier for residents of rural Alaska. While 75% (6/8) of the key informants based in Anchorage also identified time/distance to clinic/hospital as a moderate or significant barrier to care, and spoke about bringing care to patients through the use of health fairs or mobile units in patients' places of employment, many described their experiences in rural Alaska when mentioning alternatives settings of care. Different populations of Alaskans receive screening and diagnostic services in different ways, depending on their geography. Rural residents struggle with accessing care, as evidenced by the lower colorectal cancer screening rates of rural Alaska Native individuals (Schumacher et al, 2008). To illustrate some of the differences in time/distance to care, and the current utilization of alternative care settings; some Alaskans receive mammogram information and screenings integrated into their healthcare, such as at the Alaska Native Medical Center in Anchorage, while other Alaskans receive mammograms in a specialty clinic, such as in Barrow where the Arctic Slope Native Association either flies women from outlying communities in for mammography clinics, or flies a radiologic technician and mammography equipment out to North Slope

communities (Lantz, 2003). If a referral is indicated following a mammogram, women on the North Slope would need to travel to either Fairbanks or Anchorage for follow-up, although a locally available breast ultrasound could make it easier for women who have an abnormal mammogram (Lantz, 2003). Initiatives to improve access and annual rescreening rates, including mobile mammography for rural areas are suggested to improve breast cancer screening rates in Alaska Native/American Indian women (Roubidoux, 2012). However, distance to care may not be a barrier for all screening rates. In a study of cervical cancer screenings in southwest Alaska, no difference in Pap smear prevalence was indicated by distance from Bethel on the Y-K Delta (Provost, 1996). While structural barriers vary throughout the state, especially given Alaska's unique healthcare delivery system and geography, further research would be needed to determine the impact of geography on screening rates for each of the ten key screenings/guidelines.

Group Education

Only four key informants currently use group education, and about half of all key informants felt like group education would be an effective method for use by Alaskan medical providers. The Community Guide defines "Group Education" as a way to convey information "with the goal of informing, encouraging, and motivating participants to seek recommended screenings", usually conducted by health professionals (Guide to Community Preventive Services, 2009). The Community Preventive Services Task Force has found that group education increases the rate of breast cancer screening, but insufficient evidence to recommend group education for additional cancer screenings (Sabatino, 2012). Key informants spoke about giving lectures and presentations to community groups, school groups, and patient groups. Group education has also been used with and for Alaska's Community Health Aides and Practitioners, who have demonstrated changes in screening behaviors up to four years post-course for themselves, their families, and their communities (M. Cueva, ahead of print). However, a review of the literature conducted in the preparation of this report has revealed a gap in literature analyzing the association between group education and additional screenings/guidelines.[5]

Mass Media

While most key informants felt like mass media could be an effective way of increasing preventive screening rates, many were skeptical about the messages communicated by the media. Several felt that media sources do not often provide an accurate interpretation of science, and some noted that media can create fear and disseminate misinformation. Key informants spoke of mass media in terms of television, radio, and public service announcements. The Community Guide defines mass media as "mass-reach health communication interventions" that target audiences through television, radio, print, billboards, movie theaters, or digital media (Guide to Community Preventive Services, 2013). A link has been documented between mass media campaigns and increasing the use of tobacco cessation services (Guide to Community Preventive Services, 2013; Schillo et al, 2011). In Alaska, a telenovela on colorectal cancer screening has been developed and disseminated primarily in Alaska's rural communities, and 71% of viewers (305/428) at showings in Anchorage and seven rural communities completed post-movie evaluations (M. Cueva, 2013). 82% of respondents reported an intent to change behavior to reduce cancer risk, including 24% who intended to talk to a provider about colon cancer screening and 31% reporting an intent to change their behavior and receive a colon cancer screening after viewing the telenovela (M. Cueva, 2013).

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[5] Several articles were discovered in the literature review about the use of group education to prevent or manage disease, although their content is outside the scope of this report.

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Provider Incentives
While a literature review of systematic reviews demonstrates that there is insufficient evidence linking provider incentives with increased screening rates, key informants spoke extensively about financial incentives to conducting screenings (Community Preventive Services Task Force, 2012; Brouwers et al, 2011; Sabatino, 2008). Although only two key informants mentioned using monetary provider incentives, about half felt like they would be effective, and most providers mentioned that reimbursements impacted their practice.

Comments on reimbursement or monetary incentives highlighted providers' desire to be reimbursed for longer appointments and appropriate preventive care practices. While some providers were concerned about "monetary provider incentives" as potentially illegal, or a kick-back, several key informants noted that they were motivated to ask patients specific questions, or conduct specific procedures because they were reimbursable. One provider mentioned that Medicare and Medicaid reimbursement rates are higher for preventive screenings than routine visits, and was consequently financially motivated to offer those services to patients.

Barriers to Utilizing Screenings

Information on barriers to increasing preventive screening rates were noted in both the key informant interviews and from the literature review.

Out of Pocket Expenses

The most salient theme emerging from the key informant interviews was the financial barrier for patients to access and utilize screenings. Providers noted that they felt specific screenings, such as obesity, communication about tobacco, and blood pressure required little financial investment, and consequently were frequently conducted. However, blood draws to screen for lipid disorders and diabetes, as well as colorectal cancer screenings were noted as having significant financial barriers. To reduce this barrier, providers mentioned both the state Breast and Cervical Health Check as a program that successfully brought more patients in to receive those screenings, as well as proposed increased insurance coverage due to the Affordable Care Act. See the section on Reducing Out of Pocket Costs in Best Practices for further information.

Perceived Discomfort/Invasiveness of Procedure

Key informants shared that colorectal cancer screening is a particularly difficult procedure to encourage patients to access due to the invasiveness of the procedure and patients' perceived discomfort. While fecal occult blood testing (FOBT) was mentioned as a less invasive method of screening, both methods of colorectal screening (colonoscopy/sigmoidoscopy and FOBT) were still seen as difficult tests for patients to conduct, and a difficult screening for some providers to request of their patients. Pain and discomfort were also identified as major barriers to colonoscopy in an urban US population (Ghevariya et al, 2013). Perceived discomfort was also identified by key informants as a more moderate barrier for mammograms, cervical cancer screenings, and blood draws for other preventive screenings.

Time/Process of Screening

Providers noted the multi-step process of colorectal screening as barrier. Key informants noted the preparation before a colonoscopy, the time of the screening, and the recovery from sedation as a significant barrier. The practice of patients going home to conduct a fecal occult blood test at their leisure also arose as a barrier to attaining screening. Some informants mentioned that colorectal cancer screening was more difficult to accomplish because of the length of the process, contrasting colorectal cancer screening to the one-stop, but less invasive breast cancer or cervical cancer screenings.

Lack of Education/Awareness

Key informants noted that a lack of patient education about preventive screenings and guidelines was a barrier both in itself, and due to misinformation and a lack of awareness that were noted to accompany lower levels of education. A higher educational level is correlated with higher rates of cervical and colorectal cancer screening among Alaska Native individuals (Schumacher et al, 2008). This finding is consistent with national trends indicating a correlation between low socioeconomic status and a lack of screening (Chen et al, 2012). However, knowledge about preventive screenings/guidelines can be transmitted through more than formal schooling, demonstrated by Alaska Native individuals with knowledge of cancer through a family history being more likely to become screened for colorectal cancer (Schumacher et al, 2008).

Fear

Fear has also been also been noted as a barrier to screening in both the literature and in key informant interviews. These potential fears include the concern about complication during screening, such as during a colonoscopy (Ghevariya et al, 2013). Key informants also shared that a patient's fear of a

positive result can be a barrier to attaining screenings, which was also noted by a national sample of directors of managed care organizations as a barrier to attaining mammograms and pap smears (Amonkar et al, 1999).

Cultural Differences
Several key informants noted that preventive screening rates were impacted by their patients' cultural beliefs and values. These cultural values included differences in motivations, lack of understanding between the provider and patient, differences in sense of invasiveness (particularly in regards to blood draws, mammograms, pap smears, and colorectal cancer screenings). Providers spoke of these differences being beyond language/translation. To alleviate these barriers, some providers were working with members of their patients' communities to be cultural liaisons between the patient and providers, while some were striving to be culturally sensitive and understanding of each patient's values and background. Providers also mentioned the need for culturally respectful health messaging materials, including multilingual brochures, as well as their appreciation for having culturally responsive brochures, interactive DVDs, and other materials created to share cancer prevention messages.

Limitations

This preventive screenings gap analysis strives to inform DHSS' plan to increase preventive screening rates in Alaska for the ten specified screenings/guidelines. However, there are several limitations inherent in the study timeline and methodology.

All key informants were provided by the state of Alaska and are not representative of providers within the state. Key informants were selected based on their knowledge of preventive screenings, DHSS' perception of their willingness to participate, and the availability of their contact information, and not from a random sample of all providers in Alaska. Further, these key informants are based in Anchorage and urban areas outside of Anchorage (Fairbanks, Juneau, Palmer). Consequently, large areas of the state are not included by the key informants, including rural Alaska, north and northwestern Alaska, and southwest Alaska.

The screenings/guidelines that this report focuses on were chosen by DHSS, and consequently all information is limited to those screenings/guidelines. Key informants expressed a desire to share their thoughts on additional preventive measures they felt were important, including vaccines and immunizations, osteoporosis, gonorrhea and chlamydia, unintended pregnancy, and prostate cancer. However, the scope of this report is limited to the ten screenings/guidelines indicated by DHSS, and consequently additional research would be needed to examine current practices, best practices, and barriers to any additional preventive measures.

The research on best practices and barriers to increasing preventive screening rates were limited to key informant interviews and a review of the literature. However, the literature review identified gaps in peer-reviewed publications, particularly in regards to national studies of methods to increase providers adherence to guidelines on recommending aspirin for the prevention of cardiovascular disease as well as methods to increase obesity screening. Further research would need to be conducted to determine best practices and barriers to improving screening rates from primary data collection to supplement the gap in literature.

While key informants and the literature both reflect a need to tailor health messages to specific population groups, identifying target population groups in Alaska, as well as messaging techniques effective for those identified groups is outside the scope of this report.

Conclusions

This report summarizes findings from key informant interviews with providers in urban Alaska, as well as a review of the literature relevant to each of the identified ten screenings/guidelines. Due to the selection of urban key informants, additional research would be needed with comparable rural providers to gather information on methods and practices to improve preventive screenings/guidelines in rural Alaska. Themes emerging from both the literature and key informant interviews drew from current practices, best practices, barriers to increasing preventive screening rates, as well as from discovered gaps.

Findings on current practices included the prevalence of verbal communication between patients and providers, and its mediation by patient characteristics, provider characteristics, and screening recommendations. The literature and key informant interviews revealed provider reminder and recall systems as a best practice, while findings on barriers demonstrated a strong financial theme. Key informants indicated that they most frequently communicate information to patients verbally through one-on-one conversations, as well as through brochures. However, the preventive practices that providers and patients discuss during one-on-one conversations is mediated by patient characteristics such as culture, health literacy, and values, as well as by the provider's lack of time, trust in the screening/guideline, and their role on the healthcare team. Key informants identified the U.S. Preventive Services Task Force most often as a source of trusted information on preventive screenings/guidelines, which recommends against aspirin for the prevention of cardiovascular disease for certain demographics, as well as provides no screening recommendation for falls prevention.

Identified best practices from key informant interviews and the literature on provider-oriented practices included the use of a system to remind providers about preventive practices at point of care as common to all the preventive screenings/guidelines, with the exception of falls prevention. The strongest theme from the key informant interviews was about financial barrier to increasing the rates for preventive screenings/guidelines. Providers also spoke about geographic disparities and cultural differences as barriers to increasing preventive screening rates. This theme is supported by the diversity of age ranges and demographics that are included in recommendations from the USPSTF for the ten key screenings/guidelines (see Table 5. USPSTF Recommendations and Alaska Rates).

Table 5. USPSTF Recommendations and Alaska Rates also illuminates some of the gaps that have been discovered during the creation of this report, namely from the lack of known baseline data on which to compare an increase in screening rates for several of the key screenings/guidelines. Due to the selection of urban key informants, a gap also exists in consulting experts in rural Alaska on preventive screenings/guidelines. Further research would be needed to determine baseline Alaska screening rates for all specified screenings/guidelines, the target population for increasing screening rates, as well as methods effective at increasing screening rates with that target population.

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Preventive Screening Gap Analysis   October 15, 2013
Institute of Social and Economic Research

Appendix A. Interview Guide

INTRODUCTION

[Please read the following text to the prospective participant]

Hello, I'm [please provide your full name] from the University of Alaska Anchorage

or

Hello, Dr. [Mr/Ms] _____,[Is this the practice of _____?]

My name is _____, from the Institute of Social and Economic Research at the University of Alaska Anchorage. We are conducting a small number of interviews with key medical providers. The interviews are sponsored by the Alaska Department of Health and Social services, and are part of a project to learn how to increase preventive screening rates in Alaska.

0	Gatekeeper available ➜(Skip to S1)
1	Medical Provider available ➜(Skip to A1)
2	Medical Provider not available ➜(Ask for direct-dial number and time to call back)

3	Gatekeeper not available ➜(Set time to call back C3)
4	Gatekeeper soft refusal ➜ **Thank and suggest another time to call back**
5	Gatekeeper hard refusal ➜ **Thank and Terminate**
6	Medical Provider soft refusal ➜ **Thank and suggest another time to call back**
7	Medical Provider hard refusal ➜ **Thank and Terminate**
8	No longer works/lives here ➜(Skip to S2)
9	Never heard of respondent ➜ **Thank and Terminate** (try Directory Assistance)

S1.   I would like to verify that I have reached _____.
　　　○ Yes　　　　　　　○ No ➜ I'm sorry to have bothered you . . .**[Go to S2]**
　　　⬇
　　　Continue with A1 (page __)

S2. _____ is a very important part of a medical study we are conducting for the State Department of Health and Social Services. Do you happen to know if he/she is still in this area, or is (he/she) in another city/state?

❍ Same area/or another city   ❍ Different state ➔ **Thank and Terminate**
⬇   [IF OTHER STATE MENTIONED, RECORD

_____]
                                       ❍ Don't know ➔ **Thank and Terminate**
                              ❍   Refused ➔ **Thank and Terminate**

S2a. Do you have the address or telephone number where I can reach. _____?
      [ENTER PHONE NUMBER AND ADDRESS.]
Phone Numbers _____ _____

Street Address _____

City _____ State_____ Zip Code _____

A1. During a **TYPICAL** week, do you [does _____] provide at least twenty hours of direct patient care?

> **[INTERVIEWER NOTE:] (If necessary, say)** Direct patient care involves seeing patients and patient-related care. **(If necessary, say)** INCLUDING time spent on patient record-keeping, patient-related office work, and travel time connected with seeing patients; EXCLUDE time spent in training, teaching, or research; any hours on-call when not actually working; and travel between home and work at the beginning and end of the work day.

❍ No   ❍ Yes ➔ Continue with A2
⬇
Thank and Terminate [delete contact information]

> In this interview, we won't be interviewing medical providers who typically provide patient care for less than 20 hours per week. So it seems we won't need any further information from you at this time, but thank you for your cooperation.

INFORMED CONSENT FORM

[Read the consent form. Emphasize that participation is voluntary; they may decline to answer any question or withdraw at any time without penalty. Answer all questions before proceeding**.]**

Your name and contact information was provided to us by the State of Alaska Department of Health and Social Services, Division of Public Health, Chronic Disease Prevention and Health Promotion Section. They have identified you as a key medical provider who has available information on best practices, barriers, consumer motivation and provider knowledge of preventive health screenings and guidelines. This study is sponsored by Alaska Department of Health and Social Services and its results will be used to support efforts to improve the number of people using preventive screenings and guidelines.

The interview takes about 20 to 30 minutes to complete. Your participation is voluntary, and all your answers will be kept confidential. In our report your answers will be combined with those of other medical providers so that no person's answers can be identified. If there are any questions you do not wish to answer, simply tell me that and we will skip that question. You may stop the interview at any time. If you have any questions about your rights, I can give you the name and telephone number of the person to contact [Dr. Diane Toebe, 786-1099]. If you have questions about this study, I can give you the name and number of the person in charge of this study [Rosyland Frazier, 786-5432]. Do you have any questions?

[If YES: Answer their questions, select "Yes" record their question and your response and continue to the interview. If you are unable to answer the questions, please get a supervisor for assistance.]

❍ Yes

❍ No

❍ I don't have time for this right now/Call back later [I can conduct the interview now or at another time convenient for the medical provider.]

If No Is Selected, Then Skip To Intro Questions
If Yes Is Selected, Then Skip To Intro Questions
If I don't have time for this ... Is Selected, Then Skip To When would be a good time to call back?

C3. When would be a good time to call back? [Enter time and date in the text boxes. Get a specific time and day; suggest a time and day if respondent "doesn't know"]

    Time

    Date

Thank you. We will try to call back at [Read the above time and date].

A2. We'd like you to think about the practice location at which you [. _____] spend(s) the greatest amount of time in direct patient care. In what community is your practice located? _____ ?

A3. What is your [his/her] primary specialty l_____.

        [INTERVIEWER NOTE: (If necessary, say) We define primary specialty as that in which the most hours are spent weekly.**]**

A6.   Are you currently . . . [Is _____ currently]
    a. a **full-time** employee of a federal or state agency **[PROBE:** Do you receive your paychecks from a state or federal agency such as the U.S. Public Health Service, VA, or a military service)]?

                                ❍ No   ❍ Yes
    b. a resident physician?   ❍ No   ❍ Yes
    c. a **full-time** contract employee   ❍ No   ❍ Yes

C1. What is the name of this practice?

_____

C1 .What is your occupation?

_____

C2. What type of practice is this? [PROBE: If needed read the following list]

    ❍ Group Practice/Private MD Group Practice
    ❍ Partnership
    ❍ Community Health Center
    ❍ Walk-in/Urgent Care Center
    ❍ Hospital
    ❍ Hospital-affiliated Clinic
    ❍ Tribal Hospital
    ❍ Not-for-profit Organization
    ❍ Other _____

PREVENTIVE SCREENING AND CLINICAL GUIDELINES

This analysis is being used to determine what steps the State Department of Health and Social Services needs to take in order to encourage Alaska residents to increase the rate of preventive screenings from the current levels to desired levels for the following key screenings/clinical guidelines:
    1. Type 2 Diabetes Screening
    2. Screening for High Blood Pressure
    3. Lipid Disorder Screening

4. Aspirin for Prevention of Cardiovascular Disease
5. Prevention of Tobacco Use and Tobacco Cessation – Ask, Advise
6. Colorectal Cancer Screenings
7. Breast Cancer Screenings
8. Cervical Cancer Screenings
9. Obesity Screening
10. Falls Prevention

We want to learn about the current best practices;

What you think are the barriers to patients' access/utilization of screenings and;

What you think encourages and discourages patients' motivation to have their preventive screenings or follow preventive guidelines

INFORMATION TO PATIENTS PROVIDED BY MEDICAL PROVIDERS

Q1. Does your office provide information to patients on preventive screenings and guidelines?

Yes   No

Q1.1 If yes

Which of the following does your office provide? (mark all that apply)

-referrals to websites

-Brochures

-Booklet

-referrals to Blogs

-referrals to Forums

-referrals to Non-profit organizations

-referrals to specific people_(who?)_____

-other _____

Q2. Do you recommend any particular resources to patients for preventive screenings/guidelines?

Yes   No

Q2.2. If yes: What do you recommend, and why do you recommend them?

Q3. There are a lot of methods recommended to increase patient preventive screenings. I am going to read you list of some of these methods. Please tell me what you think is the effectiveness of each of these methods, as well as how often your organization uses each method.

Effective, uncertain, ineffective
Often, sometimes, rarely, never

How effective are . . . ? How frequently does you organization use…?	Effectiveness: Effective, Uncertain, Ineffective	Frequency of Use: Often, Sometimes, Rarely, Never
Client Incentives		
Client Reminders		
Printed letters or postcards		
Telephone calls		
Texting		
Emails		
Small Media, including letters, brochures, newsletters		
Mass Media, including TV, radio, newspapers, and magazine ads		
Group Education		
One on One Education		
Alternative settings for care, other than a clinic or hospital (i.e. mobile mammography units)		

Q3.1. What other methods do you think are effective in increasing patient preventive screenings?
    Q. 3.2 How do these vary for different kinds of screenings?
Q4. There are a number of barriers to increasing patient preventive screenings. I am going to read you list of some of these. Please tell me how much you think each of these effects patient preventive screening rates.

Considerable, Moderate, Slight, None

Structural barriers	Considerable	Moderate	Slight	None
Time/distance to clinic/hospital				
Language/translation				
Administrative procedures – scheduling, patient navigation				
Hours of service				
Transportation				
Child care				
Perceived discomfort				
Out of pocket costs				
Lack of perceived benefit				

Q5. What other additional barriers effect preventive screening rates?

    Q 5.1 How these vary for different kinds of screenings?

INFORMATION FOR YOURSELF - WHAT DO YOU KNOW?

In this section we would like to learn:
1. how you, as health care providers, would like to get information about preventive screenings
2. what you know about preventive screenings,
3. where you go when you want information on preventive screenings, and
4. what you think of different kinds of information on preventive screenings

Q6. Which of these would you would you use to find information on preventive screenings/guidelines?
- Internet searches
- Specific websites
- Specific apps
- Asking colleagues
- Continuing education
- Professional meetings
- Other_____

Q7. Is there someone or someplace that you expect would provide you with updates on preventive screenings and guidelines?

Yes   No

Q7.1 If yes, who or where?

Q9. Information can come from different sources. Can you tell me the name of an agency or source you feel is trustworthy?

PATIENT INTERACTION

Q8. How often do patients initiate discussions about preventive screenings with you? [Patient initiated]

Often, Sometimes, Rarely, Never

	Often	Sometimes	Rarely	Never
Type 2 Diabetes Screening				
Screening for High Blood Pressure				
Lipid Disorder Screening				
Aspirin for Prevention of Cardiovascular Disease				
Prevention of Tobacco Use and Tobacco Cessation – Ask, Advise, Refer				
Colorectal Cancer Screenings				
Breast Cancer Screenings				
Cervical Cancer Screenings				
Obesity Screening				
Falls Prevention				

Q10. How often do you initiate discussions about preventive screenings with your patients? [Provider initiated. Ask by screenings. If there are conditions that they offer record info. Example I talk with all of my female patients 18 yrs. and older about breast cancer. . . .]
Often, Sometimes, Rarely, Never

	Often	Sometimes	Rarely	Never
Type 2 Diabetes Screening				
Screening for High Blood Pressure				
Lipid Disorder Screening				
Aspirin for Prevention of Cardiovascular Disease				
Prevention of Tobacco Use and Tobacco Cessation – Ask, Advise, Refer				
Colorectal Cancer Screenings				
Breast Cancer Screenings				
Cervical Cancer Screenings				
Obesity Screening				
Falls Prevention				

OPINION OF SOURCES OF PATIENT INFORMATION

Q11. Please tell us of any particular sources of information (ex. medical websites, apps) that you feel are particularly **helpful** for patients to obtain information from.

Q12. If they were provided, what kind of materials do you feel would be the most helpful for you to use to educate patients about screenings (posters, brochures, rack cards, an app, DVD, etc.)?

Q13. Please tell us of any particular sources of information (ex. medical websites, apps) that you feel are particularly **harmful** for patients to obtain information from.

METHODS TO EFFECT PROVIDERS

Q14. There are some methods recommended to increase provider influence/impact on patients' use of preventive screenings. I am going to read you a list of some of these methods. Please tell me how effective you think these methods would be with Alaskan medical providers, and whether or not your organization uses each method.

Effective, Uncertain, or Ineffective?
All providers, most, few, none?

	Effectiveness: Effective, Uncertain, Ineffective	Use: All providers, most, few, none
An electronic system to remind you when it is time for a patient's screening		
Provider incentives to make appropriate referrals		
Monetary		
Nonmonetary		
Feedback on how you deliver or offer screenings or information on screenings		
Longer appointments (more time with each patient)		

DEMOGRAPHICS

Q15. Are you male or female?

Q16. What is your age?

Q17. How long have you been in practice?

Q18. How long have you been in practice in Alaska?

Q19. Is there anything else you'd like us to know?

Thank you very much for answering these questions

Appendix B. Initial Literature Review Key Word Searches

An initial search was conducted on PubMed on March 6, 2013. Article titles were reviewed for relevancy, and all potentially relevant articles were exported to EndNote. The following key word searches garnered the specified number of articles:

"diabetes screening" "Alaska" – 0
"diabetes" "screening" "Alaska" – 35, exported 25 to EndNote
"blood pressure" "Alaska" – 51, but nothing about screening
"blood pressure screening" "Alaska" – 0
"blood pressure" "ask advise" "Alaska" – 0
"blood pressure" "screening" "Alaska" – 13, exported to EndNote
"cholesterol" "screening" "Alaska" – 8, exported to EndNote
"aspirin" "screening" "Alaska" – 0
"aspirin" "Alaska" – 2 on Kawasaki disease, 1 on acute rheumatic fever/rheumatic heart disease, 1 on treating acute MI, 1 on stroke prevention among patients with a-fib
"aspirin" "cardiovascular disease" "Alaska" – 0
"tobacco cessation" "Alaska" – 13, 12 exported to EndNote
"colorectal cancer" "screening" "Alaska" – 26, exported to EndNote
"breast cancer" "screening" "Alaska" – 25, exported to EndNote
"cervical cancer" "screening" "Alaska" – 30, 27 exported to EndNote
"obesity" "screening" "Alaska" – 17, 4 exported to EndNote
"BMI" "screening" "Alaska" – 6, all duplicates
"BMI" "Alaska" – 33, 22 exported to EndNote, 6 on genetic contributions to obesity
"obesity" "Alaska" "prevention" – 42, 4 exported to EndNote
"falls" "Alaska" – 36, 19 exported to EndNote
"falls" "prevention" "Alaska" – 17, all duplicates

A total of 185 articles were exported to EndNote as a result of these key word searches. To attempt to fill the gap in literature on aspirin as prevention of cardiovascular disease, an additional search of the literature was conducted on PubMed on March 8, 2013, using the key words: "cardiovascular disease" "prevention" "alaska". This search generated 35 articles.

After reviewing for duplicates, 165 unique articles were identified from these searches.

A review of abstracts for each article revealed 25 articles with a non-Alaska focus (most commonly, the term "American Indian/Alaska Native" had been used), 54 articles about disease statistics and not screening measures, and 5 articles evaluating different screening techniques. Removing these three groups from the sample resulted in 81 unique articles. Of these unique articles, 61 (75%) were published in the year 2000 or later, while 52 (64%) were Alaska Native specific.

Sorting these 81 articles into relevant screening/clinical categories:
- Diabetes Screenings – 14
- BP Screenings – 1
- Lipid Disorders/Cholesterol Screenings – 7
- Aspirin for Prevention of Cardiovascular Disease – 10
- Prevention of Tobacco and Tobacco Cessation - 3

- Colorectal Cancer Screenings – 7
- Breast Cancer Screenings – 14
- Cervical Cancer Screenings – 12
- Obesity/BMI Monitoring – 9
- Falls Prevention – 4

Appendix C. Initial Literature Review Results: Annotated Bibliography

(2000). "Every encounter is an opportunity for recommending breast and cervical cancer screening in women. Alaska Breast & Cervical Cancer Early Detection Program." Alaska Med 42(2): 46-47.

Adler, A. I., et al. (1994). "Lower prevalence of impaired glucose tolerance and diabetes associated with daily seal oil or salmon consumption among Alaska Natives." Diabetes Care 17(12): 1498-1501.
OBJECTIVE: To examine the association of seal oil and salmon consumption with impaired glucose tolerance (IGT) and non-insulin-dependent diabetes mellitus (NIDDM) among Alaska Natives. RESEARCH DESIGN AND METHODS: Screening was performed on 666 Yup'ik Eskimos and Athabaskan Indians > or = 40 years old in 15 villages. Self-administered questionnaires were used to obtain partial food frequency data. A case was defined as IGT or NIDDM, either newly discovered or known. Newly discovered cases (11 patients with NIDDM and 17 with IGT) were determined by random blood glucose testing followed by a 2-h 75-g oral glucose tolerance test (OGTT) for those with values > or = 6.72 mmol/l or for subjects with unconfirmed histories of glucose intolerance. Known cases included 26 patients with NIDDM and 1 with IGT. Control subjects had random blood glucoses < 6.72 or normal OGTT results. RESULTS: Compared with less-than-daily consumption, both daily seal oil (odds ratio [OR] 0.2, 95% confidence interval [CI] 0.1-0.8) and daily salmon consumption (OR 0.5, CI 0.2-1.1) were associated with a lower prevalence of glucose intolerance, controlling for age, ethnicity, body mass index, and sex. The effects were similar when limited to newly discovered cases: OR 0.3, CI 0.1-1.3 for seal oil and OR 0.4, CI 0.1-1.3 for salmon. Consumption of seal oil at least five times per week was required to reduce risk. CONCLUSIONS: Consumption of seal oil and salmon, high in omega-3 fatty acids, appears to lower the risk of glucose intolerance and is a potentially modifiable risk factor for NIDDM in Alaska Natives.

Adler, A. I., et al. (1996). "The negative association between traditional physical activities and the prevalence of glucose intolerance in Alaska Natives." Diabet Med 13(6): 555-560.
The once low prevalence of non-insulin-dependent (Type 2) diabetes (NIDDM) in Eskimos and Indians has risen approximately fourfold over the past 30 years, suggesting the presence of a non-genetic factor affecting NIDDM prevalence. At the same time, traditional physical activities required of a subsistence (self-sufficiency) lifestyle have diminished. Since physical activity has been shown to prevent NIDDM in other populations, we performed a case-control study of physical activity and glucose intolerance in 666 Yup'ik Eskimos and Athabaskan Indians > or = 40 years old in 15 villages in the Yukon Kuskokwim Delta in Alaska. Self-administered questionnaires were used to determine whether subjects participated in a number of traditional activities and/or their modern counterpart (for example, dog sledding and riding motorized vehicles). Intensity values and a score were defined for the activities. Cases included known or newly discovered impaired glucose tolerance or NIDDM. Newly discovered cases were defined by oral glucose tolerance testing of those individuals were screening blood glucose values > or = 6.7 mmol l-1 by random capillary blood glucose testing. Cases included 11 newly discovered (1 with a history of IGT) and 26 known cases of NIDDM, and 17 newly discovered and 1 known cases of IGT. The results showed that, compared to a reference group with low-level physical activity, moderate level physical activity (odds ratio, OR, 0.7, 95% confidence interval [CI] 0.4-1.3) and high level activity (OR 0.2, CI 0.1-0.6) were associated with a lower prevalence of glucose intolerance, adjusted for age, ethnicity, body mass index, and sex.

Anderson, K. J. and P. D. Speranza (2011). "Procedural and temporal compliance to cervical cancer screening guidelines in a CDC-funded program in Alaska." J Low Genit Tract Dis 15(2): 98-104.

OBJECTIVE: To estimate changes in clinical practice in a cervical cancer screening program after the American Society for Colposcopy and Cervical Pathology's issuance of 2006 consensus guidelines (2006CG) for managing abnormal Pap tests. METHODS: Screening and diagnostic procedure records were extracted from the operational database of a Centers for Disease Control and Prevention-funded cervical cancer screening program in Alaska. New software was developed to compare these records to the American Society for Colposcopy and Cervical Pathology algorithms. Of the 16 algorithms, 11 were encoded, and results of patients with abnormal Pap results in 2 study windows (cohort A: 2005-2006: n = 1,431; cohort B: October 2007 to September 2008: n = 1,369) were compared with 2006CG recommendations. Comparisons between the practices in the 2 study windows were made using the Fisher exact test. RESULTS: Among adolescents with low-grade squamous intraepithelial lesion or atypical squamous cells of undetermined significance Pap results, 117 (48%) of 243 in cohort A were given colposcopies compared with 28 (23%) of 192 in cohort B (p < .0001). There was no difference in the rate of human papillomavirus testing between cohorts A and B (23% vs 26%, p = .449). Among adults with low-grade squamous intraepithelial lesion, 63 (16%) of 402 in cohort A were given repeat Pap tests instead of colposcopies compared with 25 (7%) of 367 in cohort B (p < .0001). Temporal compliance was significantly improved (p = .025), with 75% in cohort A and 91% in cohort B being graded as timely or early. CONCLUSIONS: Clinical practice has moved toward 2006CG recommendations in this program, although gaps remain. This evaluation will be used to inform a compliance improvement program. The software can be easily modified as 2006CG evolves and can be ported to other algorithmic practice guidelines.

Annuzzi, G., et al. (2012). "Lipoprotein subfractions and dietary intake of n-3 fatty acid: the Genetics of Coronary Artery Disease in Alaska Natives study." Am J Clin Nutr 95(6): 1315-1322.
BACKGROUND: Few studies have compared lipoprotein composition with dietary intake. OBJECTIVE: The lipoprotein subfraction profile was evaluated in relation to diet in Alaska Eskimos at high cardiovascular risk but with a low frequency of hyperlipidemia and high intake of n-3 (omega-3) fatty acids. DESIGN: A population-based sample (n = 1214) from the Norton Sound Region of Alaska underwent a physical examination and blood sampling. Analyses were from 977 individuals who did not have diabetes or use lipid-lowering medications and had complete dietary information (food-frequency questionnaire) and a lipoprotein subfraction profile (nuclear magnetic resonance spectroscopy). RESULTS: After adjustment for age, BMI, total energy intake, and percentage of energy from fat, the intake of n-3 fatty acids was significantly associated with fewer large VLDLs (P = 0.022 in women, P = 0.064 in men), a smaller VLDL size (P = 0.018 and P = 0.036), more large HDLs (P = 0.179 and P = 0.021), and a larger HDL size (P = 0.004 and P = 0.001). After adjustment for carbohydrate and sugar intakes, large VLDLs (P = 0.042 and 0.018) and VLDL size (P = 0.011 and 0.025) remained negatively associated with n-3 fatty acid intake in women and men, and large HDLs (P = 0.067 and 0.005) and HDL size (P = 0.001 in both) remained positively associated with n-3 fatty acid intake in women and men. In addition, large LDLs (P = 0.040 and P = 0.025) were positively associated in both sexes, and LDL size (P = 0.006) showed a positive association in women. There were no significant relations with total LDL particles in either model. CONCLUSIONS: Dietary n-3 fatty acids, independent of the reciprocal changes in carbohydrate and sugar intakes, are associated with an overall favorable lipoprotein profile in terms of cardiovascular risk. Because there are no relations with total LDL particles, the benefit may be related to cardiovascular processes other than atherosclerosis.

Beebe, J. A., et al. (2012). "An Isokinetic Training Program for Reducing Falls in a Community-Dwelling Older Adult: A Case Report." J Geriatr Phys Ther.
BACKGROUND:: With the population older than 65 years, projected to double by the year 2030, falls in older adults are a substantial health concern. Muscle strength deficits are one of the

multifactorial components linked to increased fall risk, and decreasing these deficits has been one of the goals of interventions designed to decrease fall risk. These interventions have traditionally focused on improving peak torque; however, recent research suggests that exercise protocols that focus on the rate of torque development (RTD) may be more effective in decreasing fall risk. PURPOSE:: This case report examines clinical outcomes following implementation of an isokinetic strengthening protocol coupled with a balance program designed to reduce fall risk in a community-dwelling older adult. METHODS:: The individual was a 70-year-old woman with a history of 3 falls over the past 8 months and no related medical etiology who had self-limited her activities because of fear of another fall. She was classified as having substantial risk for future falls because of fall history, increased fear of falling, and below age norms on the Berg Balance Scale (BBS), and the Timed Up and Go (TUG). The treatment program consisted of 12 weeks of high-intensity isokinetic knee extensor training, high challenge dynamic gait and balance activities, and core strengthening. The isokinetic protocol consisted of 4 sets of 10 concentric-only repetitions at speeds of 240 degrees /sec and 300 degrees /sec for a total of 8 work sets. Dynamic gait activities incorporating directional and obstacle drills, and rocker and balance boards were used for balance training activities. Progressive theraband exercises were used for core strengthening. As her home program, the participant was encouraged to return to line dancing twice per week. During the 12-week protocol, the participant completed two 90-minute therapy sessions and two 90-minute dance classes per week. RESULTS:: After the 12 weeks of treatment, knee extensor peak torque at 150 ms improved on the right from 67.8 N to 107.1 N (57.9% increase), and on the left from 65.1 N to 97.6 N (49.9% increase). The BBS score improved from 45 to 52; and the TUG improved from 14.0 to 8.6 seconds. Both final scores exceeded fall risk cutoffs (BBS = 48; TUG = 13.5 seconds) and the change score exceeded minimal detectable change (BBS = 7; TUG 5.4 seconds). CONCLUSIONS:: The treatment program produced improvements in knee extensor peak torque and RTD, but more importantly, the final scores on the clinical outcome measures placed the participant above established fall-risk cutoff scores. Although future research with increased numbers of participants and a control group should be conducted to confirm this study's results, these findings support the use of isokinetic training to reduce fall risk in older adults.

Bersamin, A., et al. (2013). "Enculturation, perceived stress, and physical activity: implications for metabolic risk among the Yup'ik - The Center for Alaska Native Health Research Study." Ethn Health.
        Objectives. American Indians and Alaska Natives (ANs) report among the lowest levels of physical activity in the USA, but there is very little systematic research examining the determinants of physical activity patterns in these populations. This study investigated the relationships between enculturation (or cultural traditionality), psychosocial stress, and physical activity in a community-based sample of Yup'ik women and men living in rural AN communities. Associations between these variables and several metabolic risk factors were also examined. Design. A sample of 488 Yup'ik participants (284 women and 204 men) from six villages in the Yukon-Kuskokwim Delta region completed a wellness survey and an array of physiological assessments [e.g., body mass index (BMI), blood pressure]. A subset of 179 participants also completed a 3-day pedometer assessment of physical activity. Results. Multivariate linear regression models indicated that participants who were more enculturated (i.e., living more of a traditional lifestyle) and who experienced lower levels of psychosocial stress were significantly more physically active. In turn, both lower levels of psychosocial stress and higher levels of physical activity were associated with lower BMI, lower percent body fat, and lower waist circumference. Conclusions. Findings underscore the importance of gaining a culturally specific understanding of physical activity patterns in indigenous groups in order to inform effective health promotion strategies.

Boles, M., et al. (2009). "Effectiveness of a tobacco quitline in an indigenous population: a comparison between Alaska Native people and other first-time quitline callers who set a quit date." Int J Circumpolar Health 68(2): 170-181.

OBJECTIVES: To conduct a descriptive, comparative study of the acceptability and effectiveness of a tobacco cessation quitline (QL) among Alaska Native people and non-Alaska Native people. STUDY DESIGN: From January 2006 to January 2007, we conducted telephone surveys of first-time Alaska QL callers who set a quit date. We attempted to reach them by phone about 3 months after their call to the QL. METHODS: Analyses compared 7-day point prevalence quit rates, satisfaction measures, experiences and general perceptions of QLs by Alaska Native and non-Alaska Native callers. RESULTS: We surveyed 39.8% (n = 772) of the 1,941 adult tobacco users we attempted to contact. The 7-day point prevalence quit rate among Alaska Native survey participants at the 3-month follow-up was 22.2% (CI: 14.8% - 32.0%), compared to 40.7% (CI: 36.7% - 44.9%) for non-Alaska Native survey participants. Eighty-three percent (CI: 74.6% - 89.3%) were somewhat/very satisfied overall with the QL program compared to 90.3% (CI: 87.6% - 92.4%) for non-Alaska Native participants. CONCLUSIONS: Although the QL was less effective for Alaska Native callers than other QL callers, Alaska Native peoples' quit rates and satisfaction were still quite good. Despite this, more effort should be made to address specific Alaska Native values and social and cultural barriers to quitting tobacco.

Brega, A. G., et al. (2011). "Cardiovascular knowledge among urban American Indians and Alaska Natives: first steps in addressing cardiovascular health." Prog Community Health Partnersh 5(3): 273-279.

BACKGROUND: Cardiovascular disease (CVD) is common among American Indians/Alaska Natives (AI/ANs). Given limited access to health care, urban AI/ANs may be at particular risk. Lack of available data, however, limits our understanding of cardiovascular health in this population. OBJECTIVES: We conducted a survey to characterize CVD-related knowledge, behavior, and risk of urban AI/ANs. Results related to knowledge are reported. METHODS: In collaboration with the Indian clinics in two urban communities, we surveyed 298 AI/ANs. RESULTS: Respondents recognized approximately half of the symptoms of heart attack and stroke, and were significantly less likely to recognize each symptom than reported in national studies using the same items. General CVD knowledge (e.g., risks of high blood pressure) was stronger, although areas for improvement were noted. CONCLUSIONS: Urban AI/ANs would benefit from efforts to enhance CVD knowledge. These preliminary data are providing the foundation for community-based efforts to address CVD risk among urban AI/ANs.

Burhansstipanov, L., et al. (2005). "A review of effective strategies for native women's breast health outreach and education." J Cancer Educ 20(1 Suppl): 71-79.

BACKGROUND: This commentary provides a summary of a pilot study designed to assist the American Cancer Society in revising the Circle of Life breast health program for American Indians and Alaska Natives (AIANs). METHODS: Included are analyses of a literature review focusing on breast health outreach strategies among AIANs and in-depth interviews with breast health focus group facilitators. Over 70 AIAN breast or cervix cancer screening articles were reviewed, and approximately 20 focus group facilitators were interviewed. RESULTS AND CONCLUSIONS: A primary finding was that AIAN breast cancer outreach, education, and screening programs are most effective when community-driven and culturally relevant to local tribal nations and geographic regions.

Conway, G. A., et al. (1998). "Preventing deaths in Alaska's commercial fishing industry." Int J Circumpolar Health 57 Suppl 1: 503-509.

BACKGROUND AND PURPOSE: The arctic and sub-arctic waters of Alaska provide a very hazardous work setting, with special hazards posed by great distances, seasonal darkness, cold waters,

high winds, brief fishing seasons, and icing. Our intent is to reduce the remarkably high occupational fatality rate (200/100,000/year in 1991-1992) among Alaska's commercial fishing workers. Over 90% of these deaths have been due to drowning or drowning plus hypothermia, primarily associated with vessel capsizings and sinkings. METHODS: Comprehensive surveillance for commercial fishing occupational fatalities was established during 1991 in Alaska. During 1990 through 1994, the U.S. Commercial Fishing Industry Vessel Safety Act of 1988 required the implementation of comprehensive prevention measures for all fishing vessels in offshore cold waters, including immersion suits and other personal flotation devices, survival craft (life rafts), emergency position-indicating radio beacons, and crew training in emergency response and first aid. Parallel to this, voluntary training efforts by nonprofit organizations have greatly increased. RESULTS: During 1990-1994, drowning was the leading cause of occupational death in Alaska. During this period, 117 fishers died, 101 of them from drowning or drowning/hypothermia. During 1991-1994, there was a substantial decrease in Alaskan commercial fishing-related deaths, from 34 in 1991 to 35 in 1992, 22 in 1993, and 10 in 1994. While man-overboard drownings and some other categories of deaths (falls, fires) have continued to occur, the most marked progress has been in vessel-related events. CONCLUSION: Specific measures tailored to prevent drowning in vessel capsizings and sinkings in Alaska's commercial fishing industry have been very successful so far. Additional efforts must be made to reduce the frequency of vessel events and to prevent man-overboard events and drownings associated with them.

Coughlin, S. S., et al. (1999). "Breast and cervical cancer screening practices among American Indian and Alaska Native women in the United States, 1992-1997." Prev Med 29(4): 287-295.
        BACKGROUND: Recent studies suggest that American Indian and Alaska Native women have important barriers to cancer screening and underuse cancer screening tests. METHODS: We examined the breast and cervical cancer screening practices of 4,961 American Indian and Alaska Native women in 47 states from 1992 through 1997 by using data from the Behavioral Risk Factor Surveillance System. RESULTS: About 65.1% [95% confidence interval (CI) 60.2 to 69.9%] of women in this sample aged 50 years or older had received a mammogram in the past 2 years. About 82.6% (95% CI 80.1 to 85.2%) of women aged 18 years or older who had not undergone a hysterectomy had received a Papanicolaou test in the past 3 years. Older women and those with less education were less likely to be screened. Women who had seen a physician in the past year were much more likely to have been screened. CONCLUSIONS: These results underscore the need for continued efforts to ensure that American Indian and Alaska Native women who are elderly or medically underserved have access to cancer screening services.

Cueva, M. (2010). "Readers' theatre as cancer education: an organic inquiry in Alaska awakening possibilities in a living spiral of understanding." J Cancer Educ 25(1): 3-8.
        Organic inquiry, as the qualitative research design method, provided for a richness of data to more fully appreciate how 24 diverse adult learners in Alaska described their experience with Readers' Theatre as cancer education both during a workshop and over time that allowed for reflection and contemplation. Readers' Theatre, as a pathway for cancer education, nurtured healing, renewal, affirmation, and shifts in knowledge, attitudes, and beliefs, which empowered action. Readers' Theatre created a respectful environment for adult learners from diverse ethnic and cultural backgrounds in Alaska to engage in meaningful conversations that awakened possibilities in a living spiral of understanding.

Cueva, M., et al. (2012). "Readers' theatre: a communication tool for colorectal cancer screening." J Cancer Educ 27(2): 281-286.
        Colorectal cancer (CRC) is the second leading cause of cancer mortality for Alaska Native people, yet it can be almost totally prevented through colonoscopy screenings. PURPOSE: A 25-minute Readers'

Theatre script was developed with and for Alaska Native and American Indian Community Health Workers (CHWs) and the people in their communities to provide CRC screening information, model ways to talk about CRC screening, increase comfort with talking about CRC, and encourage healthy lifestyle choices. METHODS: Grounded in Indigenous methodologies, this paper describes the collaborative development, implementation, and evaluation of a CRC Readers' Theatre. RESULTS: 94% (161/172) of participants from 11 Readers' Theatre completed a written evaluation. 90% (145) of participants reported feeling more comfortable talking about CRC and 77% (124) described healthy changes they planned to make. Readers' Theatre was associated with increased knowledge, comfort talking about CRC, and served as a catalyst for positive intent to change behavior.

Cueva, M., et al. (2005). "Using theater to promote cancer education in Alaska." J Cancer Educ 20(1): 45-48.
      BACKGROUND: Cancer, a rare disease in the 1950s, is now the leading cause of death among Alaska Natives (AN). METHODS: Building on AN rich traditions of storytelling to share knowledge and wisdom, a 45 minute play, Understanding, was developed to address cancer-related issues specific to AN. RESULTS: Written audience evaluations assessed the impact of this theater-based education. After seeing the play, 327 (94.5%) people reported feeling more comfortable talking about cancer, 265 (66.1%) shared that they had learned about cancer, and 234 (61.7%) wrote healthy ways they intended to change their behavior. CONCLUSION: A postplay discussion provided an opportunity for the audience to share their stories, concerns, beliefs, and feelings.

Cueva, M., et al. (2013). "Telenovela: an innovative colorectal cancer screening health messaging tool." Int J Circumpolar Health 72: 21301.
      BACKGROUND: Alaska Native people have nearly twice the rate of colorectal cancer (CRC) incidence and mortality as the US White population. OBJECTIVE: Building upon storytelling as a culturally respectful way to share information among Alaska Native people, a 25-minute telenovela-style movie, What's the Big Deal?, was developed to increase CRC screening awareness and knowledge, role-model CRC conversations, and support wellness choices. DESIGN: Alaska Native cultural values of family, community, storytelling, and humor were woven into seven, 3-4 minute movie vignettes. Written post-movie viewing evaluations completed by 71.3% of viewers (305/428) were collected at several venues, including the premiere of the movie in the urban city of Anchorage at a local movie theater, seven rural Alaska community movie nights, and five cancer education trainings with Community Health Workers. Paper and pencil evaluations included check box and open-ended questions to learn participants' response to a telenovela-style movie. RESULTS: On written-post movie viewing evaluations, viewers reported an increase in CRC knowledge and comfort with talking about recommended CRC screening exams. Notably, 81.6% of respondents (249/305) wrote positive intent to change behavior. Multiple responses included: 65% talking with family and friends about colon screening (162), 24% talking with their provider about colon screening (59), 31% having a colon screening (76), and 44% increasing physical activity (110). CONCLUSIONS: Written evaluations revealed the telenovela genre to be an innovative way to communicate colorectal cancer health messages with Alaska Native, American Indian, and Caucasian people both in an urban and rural setting to empower conversations and action related to colorectal cancer screening. Telenovela is a promising health communication tool to shift community norms by generating enthusiasm and conversations about the importance of having recommended colorectal cancer screening exams.

Cueva, M., et al. (2005). "Cancer education for Community Health Aides/Practitioners (CHA/Ps) in Alaska assessing comfort with cancer." J Cancer Educ 20(2): 85-88.

BACKGROUND: Village-based Community Health Aides and Community Health Practitioners (CHA/Ps) are the primary providers of health care in rural Alaska. METHODS: We discuss the development and results of a CHA/P cancer self-assessment survey, which assessed comfort with cancer knowledge and providing cancer information. RESULTS: A total of 402 responses were received from a mailed questionnaire to 477 CHA/Ps. Respondents were predominantly Alaska Native women. Using a 5-point Likert scale from don't know to very comfortable, approximately 50% of CHA/Ps reported feeling "OK" when providing information about cancer risk factors, cancer screening, surviving cancer, and providing care and support. CHA/Ps reported feeling less comfortable with discussing cancer diagnosis, treatment, pain, and loss and grief.

Daley, C. M., et al. (2012). "American Indian community leader and provider views of needs and barriers to mammography." J Community Health 37(2): 307-315.

Breast cancer incidence is rising and mortality is disproportionately high among American Indians and Alaska Natives, yet screening rates remain low. Using community-based participatory research, we conducted interviews with community leaders (n = 13) and providers from the Indian Health Service, tribal clinics, and urban safety-net clinics (n = 17). Participants in both groups identified similar needs, including culturally-appropriate mammography education, use of Native elders as patient navigators, and an emphasis on preventive care. Pertinent barriers included culturally-specific issues (e.g., historic mistrust and gender roles), cost, transportation, and fear of mammography and potential results. The results reflect the struggles of promoting mammography across diverse populations.

Daley, C. M., et al. (2012). "American Indian Community Leader and Provider Views of Needs and Barriers to Colorectal Cancer Screening." J Health Dispar Res Pract 5(2).

Colorectal cancer is a great concern for the American Indian/Alaska Native (AI/AN) community, as incidence and mortality rates remain high and screening rates stay low. We conducted interviews with community leaders (n=13) and with providers from the Indian Health Service (IHS), tribal clinics, and urban safety-net clinics (n=17) in Northeast Kansas and the Kansas City Metro Area to determine their understanding of needs and barriers to colorectal cancer screening among American Indians. Using a community-based participatory research (CBPR) approach for this pilot study, community leaders and providers identified similar needs, including: culturally-appropriate education about colorectal cancer and screenings, the potential use of Native elders as patient navigators, and an emphasis on preventive care, particularly through the IHS. Barriers included culturally specific issues such as historic mistrust and gender roles. Other barriers are similar to members of other ethnic groups, such as cost, transportation, fear, and repulsion toward the screening process.

Davidson, M., et al. (1994). "Incidence of invasive cervical cancer preceded by negative screening in high-risk Alaska Native women." Int J Epidemiol 23(2): 238-245.

BACKGROUND: Alaska Native women experience higher invasive cervical cancer incidence and mortality rates than US whites despite a long-standing cancer screening programme including recommendations for annual Pap smears. METHODS: To determine the frequency and results of cytological screening preceding their diagnoses, a histological and medical record review was completed for 44 of 46 Alaska Native cases of invasive cervical cancer from a defined population. An interval cancer (no prior dysplasia and a negative screening report within 3 years of diagnosis) was determined for 23 women. Mean number of negative reports during the 3- and 5-year intervals before diagnosis was 1.7 and 2.6 respectively. The age-adjusted incidence rate for all cervical cancer was 24.0/100,000 women/year and for interval cancer with single and multiple negative reports during the 3-year interval before diagnosis it was 11.6, and 9.6 respectively. Sensitivity of a Pap smear to demonstrate dysplasia during the year before diagnosis was 51%. CONCLUSIONS: Annual cytological screening of all Alaska

Native women with current methods would provide earlier diagnoses for only an additional 15% of cervical cancer cases. Plausible but unproven explanations include rapid progression through precursor stages of neoplasia or random screening errors. Improved or ancillary screening methods appear necessary.

Ebbesson, S. O. (2011). "The legacy of the Alaska Siberia Medical Research Program: a historical perspective." Int J Circumpolar Health 70(5): 584-593.
        BACKGROUND: The Alaska Siberia Medical Research Program was established at the University of Alaska (UA) at a time when there was no research funded by the National Institutes of Health (NIH) that was concerned with Alaska Native health issues. The program grew out of a dire need for an understanding of the apparently rapidly growing health problems in the Native community. The initial plan included the following objectives. OBJECTIVES: The objectives are to develop a self-sustaining infrastructure for biomedical research by gaining support from Alaska Natives, UA, national political leaders, NIH and the Russian Academy of Medical Science (RAMS); to identify researchers committed to helping Alaska Natives; to develop meaningful, Native-driven participatory research; to carry out necessary research to form the foundation for future research; and to develop circumpolar collaborations. RESULTS: The objectives were achieved because of the extraordinary and cheerful contributions by all participants in the program. The collaborative research resulted in some 70 published manuscripts identifying and characterizing research-neglected health problems. Unique risk factors for diabetes, cardiovascular disease, alcoholism and seasonal affective disorders were characterized and institutionalized prevention programs were established. The effort of the program led to U.S. Congressional action establishing the University of Alaska as a minority institution, leading to the funding of a variety of successful NIH-funded research centres and programs at the university that are concerned with Native health problems. CONCLUSION: A small, visionary investment by the University of Alaska for establishing the program led to a co-operative effort by the UA, RAMS, Alaska Native Health communities and the NIH that resulted in the development of self-sustaining medical research efforts in Alaska and Siberia. The program spawned pilot studies, leading to NIH-funded research that has provided fundamental insights into the etiology of health problems and their reduction by research-based intervention and prevention programs.

Ebbesson, S. O., et al. (2005). "A successful diabetes prevention study in Eskimos: the Alaska Siberia project." Int J Circumpolar Health 64(4): 409-424.
        OBJECTIVES: To test the efficacy of a simple intervention method to reduce risk factors for type 2 diabetes (DM) and cardiovascular disease (CVD) in Alaskan Eskimos. STUDY DESIGN: The study consisted of 1) a comprehensive screening for risk factors of 454 individuals in 4 villages, 2) a 4-year intervention and 3) a repetition of the screening in year 5 to test the efficacy of the intervention. METHODS: Personal counseling (1hr/year) stressed the consumption of more traditional foods high in omega-3 fatty acids and less of certain specific store-bought foods high in palmitic acid, which was identified as being associated with glucose intolerance. RESULTS: The intervention resulted in significant reductions in plasma concentrations of total cholesterol (p = 0.0001), LDL cholesterol (p = 0.0001), fasting glucose (p = 0.0001), diastolic blood pressure (p = 0.0007) and improved glucose tolerance (p = 0.0006). This occurred without loss of body weight. Sixty percent of the participants had improved glucose tolerance; only one of the 44 originally identified with impaired glucose tolerance (IGT) developed DM during the study. CONCLUSIONS: Dramatic improvements of risk factors for DM and CVD were achieved in the intervention by primarily stressing the need for changes in the consumption of specific fats. The results suggest that fat consumption is an important risk factor for DM.

Ebbesson, S. O., et al. (1998). "Diabetes and impaired glucose tolerance in three Alaskan Eskimo populations. The Alaska-Siberia Project." Diabetes Care 21(4): 563-569.

OBJECTIVE: The objectives of this study were to determine the prevalence of diabetes and impaired glucose tolerance (IGT) in three Alaskan Eskimo populations, using standardized diagnostic criteria, and to evaluate family history and obesity as risk factors. RESEARCH DESIGN AND METHODS: This cross-sectional study involved men and women > or = 25 years of age from three Eskimo ethnic groups (Siberian Yupik, Central Yupik, and Inupiat) residing in northwestern Alaska. Glucose tolerance status was defined by World Health Organization criteria and was based on a 75-g oral glucose tolerance test. Data on age, family history of diabetes, and degree of Eskimo ancestry were obtained from a personal interview. Obesity was assessed using BMI. RESULTS: A total of 454 of 899 (50.5%) eligible participants were examined for diabetic status (239 Siberian Yupik, 106 Central Yupik, and 109 Inupiat participants). The prevalence of diabetes was more than twice as high among the Siberian Yupik (9.6%) as among the Central Yupik (2.8%) and Inupiat participants (3.7%). Diabetes was more prevalent in women than men (8.8 vs. 4.2%). IGT was found in an additional 11.7% of the women and 4.7% of the men. The combined prevalence of diabetes and IGT in the population > or = 55 years of age was 30.4% (diabetes 12.0%, IGT 18.4%). Of the people identified with diabetes, 47% had not been previously diagnosed. Age-specific prevalences were similar to those found in U.S. whites in the National Health and Nutrition Examination Survey II. After adjustment for age, family history of diabetes was associated with diabetes in study participants with an odds ratio of 4.4, while obesity was associated with diabetes with an odds ratio of 2.6. CONCLUSIONS: These prevalences of diabetes are the highest yet reported among Eskimo populations. Obesity and family history of diabetes are associated with increased odds of developing diabetes. These data underscore the need to further examine risk factors and to design effective interventions.

Ebbesson, S. O., et al. (2010). "Individual saturated fatty acids are associated with different components of insulin resistance and glucose metabolism: the GOCADAN study." Int J Circumpolar Health 69(4): 344-351.

OBJECTIVES: Type 2 diabetes and the consumption of saturated fatty acids (FAs) are on the rise among Alaska Inuits. This analysis, based on a cross-sectional study, explores the possible associations of saturated FA content in red blood cells (RBCs) and parameters of glucose metabolism in a sample of Alaska Natives. STUDY DESIGN AND METHODS: The sample included 343 women and 282 men aged 35-74. Statistical analyses explored the associations of selected RBC (myristic, palmitic and stearic acids) FAs with fasting glucose (plasma), fasting insulin (plasma), 2h glucose (2-hour glucose tolerance test), 2h insulin and homeostasis model assessment (HOMA) index. The models included sex and glucose metabolism status as fixed factors and age, body mass index (BMI), waist circumference, physical activity (METS) and FA content in RBCs as covariates. Measures of insulin, glucose and HOMA index were used as dependent variables. RESULTS: Myristic acid was positively associated with fasting insulin (beta=0.47, p<0.001), 2h insulin (beta=0.53, p=0.02) and HOMA index (beta=0.455, p<0.001). Palmitic acid was associated with 2h glucose (beta=2.3x10(-2), p<0.001) and 2h insulin (beta=5.6x10(-2), p=0.002) and stearic acid was associated with fasting glucose (beta=4.8x10(-3), p=0.006). CONCLUSIONS: These results strongly support the hypothesis that saturated fatty acids are associated with insulin resistance and glucose intolerance and that saturated fatty acids are significant risk factors for type 2 diabetes.

Fenn, D. C., et al. (2007). "Southcentral Foundation tobacco cessation initiative." Int J Circumpolar Health 66 Suppl 1: 23-28.

OBJECTIVES: To describe the development of a comprehensive tobacco cessation program for Alaska Native and American Indian patients in a primary care setting utilizing current evidence-based

guidelines. STUDY DESIGN: Cross-sectional. METHODS: A multidisciplinary team was assembled with representation from various departments including customers of the health care system to develop the tobacco cessation program. Feedback and guidance from the team were implemented and quit rates were calculated. RESULTS: In April 2005 the point prevalence of quitting among the 322 patients enrolled in the tobacco cessation program for 6 months was 21.1%. CONCLUSIONS: Recognized clinical interventions that reduce tobacco use were effective in reducing tobacco use among the Alaska Native and American Indian patients enrolled in the tobacco cessation program. Initial results with respect to the quit rate and tobacco use screening rate provide a baseline for future work.

Finkelstein, E. A., et al. (2004). "Racial/ethnic disparities in coronary heart disease risk factors among WISEWOMAN enrollees." J Womens Health (Larchmt) 13(5): 503-518.
        BACKGROUND: We used the baseline data collected for the Well-integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN) participants to provide a snapshot of cardiovascular disease (CVD) risk on enrollment and to address racial/ethnic disparities in the following CVD risk factors: body mass index (BMI), systolic and diastolic blood pressure, high-density lipoprotein (HDL) and total cholesterol, diabetes and smoking prevalence, 10-year coronary heart disease (CHD) risk, and treatment and awareness of high cholesterol, hypertension, and diabetes. METHODS: We used linear regression analysis to (1) assess the presence of racial/ethnic disparities and test whether existing disparities can be explained by (2) differences in individual characteristics or by (3) differences in individual and community characteristics. RESULTS: Our results reveal a high degree of CVD risk among the WISEWOMAN participants and statistically significant racial/ethnic disparities in risk factors. Black participants were at the greatest risk of CVD, and Hispanic and Alaska Native participants were healthier in terms of CVD risk than white participants. Some racial/ethnic disparities were explained by differences in individual and community characteristics, but other disparities persisted even after controlling for these factors. CONCLUSIONS: Because differences in community characteristics explain many of the racial/ethnic disparities in CVD risk factors, eliminating disparities may require community-wide interventions. Successful WISEWOMAN projects are likely to not only reduce CVD risk factors overall but also to lessen racial/ethnic disparities in these risk factors.

Frisch, L. L., et al. (2000). "Social influences on Pap smear screening frequency." Alaska Med 42(2): 41-45, 47.
        Incidence and mortality rates of cervical cancer among Native American women is two to five times that of comparable Whites. Social and cultural differences contribute to this problem. We studied thirty age 40 and older American Indian women, half of whom had obtained at least one Pap in the past three years, the other half of whom had not. We asked: Do the two groups differ in their attitudes concerning Pap tests and those with whom they interact concerning Pap tests? and: Do they interact differently with different social groups concerning Pap tests? Data were obtained from chart audits and Given's Health Belief Questionnaire. The groups did not differ as to who they discussed Pap tests with or whose opinions they respected. They respected healthcare professionals most, family/friends less, and co-workers/others least. These findings suggest that the advanced practice nurse has an opportunity to improve Pap screening rates in this population.

Gahagan, S. and J. Silverstein (2003). "Prevention and treatment of type 2 diabetes mellitus in children, with special emphasis on American Indian and Alaska Native children. American Academy of Pediatrics Committee on Native American Child Health." Pediatrics 112(4): e328.
        The emergence of type 2 diabetes mellitus in the American Indian/Alaska Native pediatric population presents a new challenge for pediatricians and other health care professionals. This chronic

disease requires preventive efforts, early diagnosis, and collaborative care of the patient and family within the context of a medical home.

Galloway, J. M. (2005). "Cardiovascular health among American Indians and Alaska Natives: successes, challenges, and potentials." Am J Prev Med 29(5 Suppl 1): 11-17.

      With low rates of the risk factors for cardiovascular disease as recently as 40 years ago, the rates of cardiovascular disease (CVD) in American Indians and Alaska Natives were exceedingly low. Despite recent large-scale efforts to eliminate health disparities in ethnic and minority populations, the impact among American Indian and Alaska Natives to date has been relatively limited. Indeed, over the past several decades the incidence and prevalence of cardiovascular risk factors has risen significantly, including the development of an epidemic of diabetes. Evidence suggests that these higher rates of cardiovascular risk factors, including tobacco abuse, diabetes, high blood pressure, and elevated cholesterol levels, may be placing an inordinate burden of cardiovascular disease on the American Indian and Alaska Native population. The rates of heart disease and stroke among American Indians and Alaska Natives are now higher than in the general U.S. population as well as in U.S. whites. Recent evaluations suggest that these rates are also higher than among other ethnic or racial populations in the United States. Additionally, American Indians and Alaska Natives have been found to have a substantially higher proportion of premature death from heart disease when compared with other ethnic and racial populations. A number of recent prevention initiatives and focused clinical efforts are making promising strides toward reduced disparities in cardiovascular health with primordial, primary, and secondary cardiovascular prevention efforts along with enhanced early identification and therapeutic intervention for more favorable cardiovascular outcomes in the future. In order to reach our goals of heart-healthy and stroke-free American Indians and Alaska Natives, implementation of an aggressive, reasonably resourced, systemic plan of coordinated health promotion, risk reduction, and disease control efforts are necessary, with appropriate policy and legislative support.

Gilbert, T. J., et al. (1995). "Abnormal Papanicolaou smears and colposcopic follow-up among American Indian and Alaska Native women in the Pacific northwest." J Am Board Fam Pract 8(3): 183-188.

      BACKGROUND: Mortality that is due to cervical cancer among American Indian and Alaska Native women in the Pacific Northwest exceeds that among women of other races. Nevertheless, little information is available regarding the prevalence and follow-up of abnormal Papanicolaou smears among American Indian and Alaska Native women in the region. METHODS: We conducted a retrospective review of medical records of American Indian and Alaska Native women seen at 12 Indian Health Service and tribally operated clinics in Washington, Oregon, and Idaho who had an abnormal Papanicolaou smear in 1992. RESULTS: Of 4547 Papanicolaou smear results reviewed, 280 (6.2 percent) had an abnormal result (dysplasia or carcinoma in situ). Of the recommended colposcopies, 167 of 224 (75 percent) were completed. Women with high-grade squamous intraepithelial lesions were more likely to obtain recommended colposcopy than were women with low-grade squamous intraepithelial lesions. Women treated at clinics that referred patients to outside providers for colposcopy were more likely to have colposcopy than were those who were offered the procedure on site. CONCLUSIONS: The proportion of Pacific Northwest American Indian and Alaska Native women in Indian Health Service and tribal clinics with abnormal Papanicolaou smears and the proportion who receive colposcopy are similar to those in other populations. The higher rate of cervical cancer mortality among American Indian and Alaska Native women could be due to failure to screen high-risk women. Cytologic screening rates, methods to improve adherence to colposcopy recommendations, and the contribution of other factors to the cause of cervical cancer mortality need to be characterized in this population.

Preventive Screening Gap Analysis   October 15, 2013
Institute of Social and Economic Research

Haverkamp, D., et al. (2011). "A survey of Indian Health Service and tribal health providers' colorectal cancer screening knowledge, perceptions, and practices." J Health Care Poor Underserved 22(1): 243-257.

BACKGROUND: Provider recommendation is critical for colorectal cancer (CRC) screening participation, yet few data exist on practices of providers serving American Indians and Alaska Natives. We examined Indian Health Service (IHS) and tribal provider practices, beliefs about screening efficacy, and perceptions of barriers. METHODS: We developed a Web-based questionnaire and recruited respondents via electronic distribution lists. We generated descriptive statistics by region, provider type, and workplace setting. RESULTS: Most respondents (77%) recommend starting CRC screening of average-risk patients at age 50; however, 22% recommend flexible sigmoidoscopy and 43% colonoscopy at intervals inconsistent with national guidelines. Of those recommending fecal occult blood test (FOBT), 23% use a single, in-office FOBT card as their only FOBT method. Respondents reported barriers to screening to include underutilized reminder systems and inadequate resources. CONCLUSIONS: Indian Health Service/tribal providers are knowledgeable about when to begin CRC screening; however, education about the appropriate use and frequency of CRC tests is needed.

Hensel, M. R., et al. (1995). "Quit rates at one year follow-up of Alaska Native Medical Center Tobacco Cessation Program." Alaska Med 37(2): 43-47.

The prevalence of tobacco use in the Alaska Native population is unusually high, as high as 50% in both adult men and women. In June of 1992, the Alaska Native Medical Center and the Alaska Area Native Health Service began a tobacco cessation program using behavioral modification classes and transdermal nicotine patches. Patients were subsequently followed at three month intervals for a year to assess smoking status. To date, 193 people have completed the program with at least three months having elapsed since completion of classes. The quit rates at three, six, nine, and twelve months were 31%, 30%, 24%, 21% respectively. The long-term quit rates for this tobacco cessation program are comparable to the rates of other studies which have included both behavioral modification and transdermal nicotine.

Hiratsuka, V. Y., et al. (2007). "Cardiovascular disease risk factor screening among Alaska Native women: the traditions of the heart project." Int J Circumpolar Health 66 Suppl 1: 39-44.

OBJECTIVES: To describe tobacco use, obesity and overweight, high blood pressure, high blood cholesterol and impaired glucose tolerance in Alaska Native and American Indian women living in the Anchorage area. STUDY DESIGN: Cross-sectional evaluation of women enrolled in the Traditions of the Heart program. METHODS: Traditions of the Heart was a randomized controlled trial of an intervention to reduce risk factors for cardiovascular disease. Starting in October 2000, Southcentral Foundation provided a 12-week group lifestyle intervention to eligible Alaska Native and American Indian women aged 40 to 64 residing in the Anchorage area. The study included assessment of biochemical and behavioral risk factors for cardiovascular disease. RESULTS: Of the 1334 women who enrolled between October 2000 and July 2005, 33.5% were current smokers, 78.8% were overweight or obese, 10.9% were hypertensive, 21.4% had elevated total cholesterol, and 5.6% had fasting glucose concentrations > or = 126 mg/dL. CONCLUSIONS: The women in this study had many risk factors for cardiovascular disease. Interventions are needed to reduce these risk factors among Alaska Native women.

Howard, B. V., et al. (2005). "A genetic and epidemiologic study of cardiovascular disease in Alaska natives (GOCADAN): design and methods." Int J Circumpolar Health 64(3): 206-221.

This article is a report of the design and methods of the Genetics of Coronary Artery Disease in Alaska Natives (GOCADAN) Study. This longitudinal, population-based study was initiated to investigate the genetic determinants of cardiovascular disease and its risk factors. Between October 2000 and April

2004, this family study enrolled 1,214 Eskimos from several coastal villages in the Norton Sound region of Western Alaska. Examinations included a physical, laboratory determinations, and measures of subclinical disease. This study will generate a genome-wide scan for loci influencing cardiovascular disease-related traits. Relations between subclinical atherosclerosis and markers of inflammation will be examined using historic and newly drawn samples. The study will provide data on CVD prevalence, risk factors and the relative contribution of genetic and environmental determinants in Alaska Native peoples. Data from this study will contribute to the delivery of health-care and prevention of CVD in Alaska Eskimos and other populations.

Jim, C. C., et al. (2012). "Human papillomavirus vaccination practices among providers in Indian health service, tribal and urban Indian healthcare facilities." J Womens Health (Larchmt) 21(4): 372-378.

PURPOSE: The human papillomavirus (HPV) vaccine is of particular importance in American Indian/Alaska Native women because of the higher rate of cervical cancer incidence compared to non-Hispanic white women. To better understand HPV vaccine knowledge, attitudes, and practices among providers working with American Indian/Alaska Native populations, we conducted a provider survey in Indian Health Service, Tribal and Urban Indian (I/T/U) facilities. METHODS: During December 2009 and January 2010, we distributed an on-line survey to providers working in I/T/U facilities. We also conducted semistructured interviews with a subset of providers. RESULTS: There were 268 surveys and 51 provider interviews completed. Providers were more likely to administer vaccine to 13-18-year-olds (96%) than to other recommended age groups (89% to 11-12-year-olds and 64% to 19-26-year-olds). Perceived barriers to HPV vaccination for 9-18-year-olds included parental safety and moral/religious concerns. Funding was the main barrier for 19-26-year-olds. Overall, providers were very knowledgeable about HPV, although nearly half of all providers and most obstetricians/gynecologists thought that a pregnancy test should precede vaccination. Sixty-four percent of providers of patients receiving the vaccine do not routinely discuss the importance of cervical cancer screening. CONCLUSIONS: Recommendations for HPV vaccination have been broadly implemented in I/T/U settings. Vaccination barriers identified by I/T/U providers are similar to those reported in other provider surveys. Provider education efforts should stress that pregnancy testing is not needed before vaccination and the importance of communicating the need for continued cervical cancer screening.

Joe, J. R. (1996). "The health of American Indian and Alaska Native women." J Am Med Womens Assoc 51(4): 141-145.

By a number of quantity and quality of life measurements, the health and well-being of many American Indian and Alaska Native women falls short of that reported for other women in the United States. Poor socioeconomic conditions, lack of education, cultural barriers, and other factors (some not easily measured) contribute to the enduring poor health status of this population-despite the availability of free health care for many. Free health care alone does not promise a healthy population, especially when the types of free health care are limited, inadequately funded, or have limited focus on preventive care. This paper attempts to pinpoint some of these issues as it relates to the health status of American Indian and Alaska Native women.

Johnson, J. S., et al. (2012). "Factors related to fruit, vegetable and traditional food consumption which may affect health among Alaska Native People in Western Alaska." Int J Circumpolar Health 71: 17345.

OBJECTIVES: Determine intake of fruits, vegetables and traditional foods (TF), availability of foods, and attitudes towards increasing their consumption. STUDY DESIGN: Establish community baseline through a cross-sectional sample of residents who were weighed, measured and interviewed. Village stores were surveyed for food availability, price and quality. METHODS: Eighty-eight respondents self-identified as the household member primarily responsible for food shopping and cooking were

surveyed in 3 Western Alaska Native villages using a food frequency questionnaire, and village stores were evaluated using food environment surveys. RESULTS: Overweight (BMI[kg/m(2)] > 25) was present in 68% of participants. Fruit and vegetable intake (3.3 median servings/day) was low in comparison to recommended intakes of 5-9 servings/d. Seventy-two per cent were eating less than 5 servings/d of fruits and vegetables combined. Thirty-four per cent of respondents were trying to eat more vegetables; 41% were trying to eat more fruits. The median number of servings of TF was 3.2/d (mean 4.3/d). Seventy-seven per cent of respondents reported that they ate enough TF. CONCLUSION: Recommendations to continue use of TF and increase intake of fruits and vegetables are consistent with local attitudes. Our findings indicate that increasing the availability of fruits and vegetables would be well received. Information from this study provides a basis for nutrition education and food supplement programs that is responsive to the needs and perceptions of the residents. Continued TF intake and increased fruit and vegetable intake have the potential to benefit the health of rural residents.

Johnson, R. M., et al. (2008). "Breast cancer screening in an adult literacy program." Alaska Med 49(4): 126-130.
        OBJECTIVES: Individuals with limited literacy have low rates of cancer screening and more advanced cancer when cancer is detected. We implemented breast cancer screening at an adult literacy center to see if students would participate and determine the rate of abnormalities detected. METHODS: The Anchorage Literacy Project (ALP), in collaboration with Providence Cancer Center (PCC), offered breast cancer screening, including mammograms, on site at ALP to all 40 female ALP students aged > or =40. Prior to screening, PCC and ALP staff provided education to students about breast cancer screening and mammograms, and information about the Alaska Breast and Cervical Health Check program that would pay for treatment if cancer was detected. RESULTS: Twenty-one women underwent screening. Three (14%) had significant abnormalities. CONCLUSIONS: Cancer screening can be provided on site in adult literacy programs. The rate of abnormalities detected through such screening may be higher than the rate in the general population.

Jolly, S. E., et al. (2011). "Sex-specific associations of nutrition with hypertension and systolic blood pressure in Alaska Natives findings from the GOCADAN study." Int J Circumpolar Health 70(3): 254-265.
        OBJECTIVES: To examine sex-specific associations of nutritional factors with prevalent hypertension (HTN) and systolic blood pressure (SBP) in Alaska Natives. Diet is known to affect SBP, a major risk factor for cardiovascular disease. STUDY DESIGN: Cross-sectional analysis of participants without diabetes in the Genetics of Coronary Artery Disease in Alaska Natives study. METHODS: Macronutrients such as fat, carbohydrate and protein and micronutrients such as sodium were investigated. HTN was defined as SBP>/=140 mmHg, diastolic blood pressure>/=90 mmHg and/or taking anti-HTN medication. Analyses were stratified by sex and covariates included age, body mass index (BMI), energy intake, smoking and physical activity. RESULTS: Mean age was 42 years for men (n=456) and women (n=602). Men with HTN (n=106) compared to men without HTN consumed a higher proportion of calories from total (p=0.01), saturated (p<0.01) and trans fatty acid (p=0.03) fats. Women with HTN (n=99) compared to women without HTN consumed more total (p=0.03) and monounsaturated (p=0.04) fat, higher protein (p=0.02) and lower total (p<0.01) and simple (p<0.01) carbohydrates. After covariate adjustment, men not on anti-HTN medications (n=407) had significantly higher average SBP with increasing quartiles of trans fatty acid intake (p for linear trend=0.01) and sodium intake (p for linear trend=0.02). For women not on anti-HTN medications (n=528), after covariate adjustment, average SBP decreased with increasing quartiles of omega 3 fatty acid intake (p for linear trend <0.01). CONCLUSIONS: Prospective evaluation of the sex-specific associations of nutritional factors with HTN and SBP on outcomes is needed along with novel interventions to lower the risk of cardiovascular disease.

Kaur, J. S. (1999). "Native women and cancer." Health Care Women Int 20(5): 445-453.

Literature regarding cancer patterns in American Indians and Alaska Native women is reviewed and attention is paid to promising research initiatives to improve cancer prevention and control as well as approaches to enhance exchange of knowledge through a new national resource center. Lung, breast, and colorectal cancer are the leading cause of cancer deaths in American Indians and Alaska Native women. There continues to be a disproportionate death rate from cervical cancer. Enhanced availability for breast and cervical cancer screening in conjunction with community education is showing promising trends toward reversing the patterns of late diagnosis. Communities can benefit from sharing their collective resources in a new national resource center called "Native C.I.R.C.L.E." housed in the Mayo Cancer Center.

Kuhnley, R. and M. Cueva (2011). "Learning about cancer has brightened my light: cancer education for Alaska Community Health Aides and Community Health Practitioners (CHA/Ps)." J Cancer Educ 26(3): 522-529.

In response to Alaska's Community Health Aides/Practitioners (CHA/Ps) request for cancer information, the "Path to Understanding Cancer" course was developed, implemented, and extensively evaluated. Using a qualitative approach as one evaluation component, 128 of 168 course participants engaged in post-course telephone interviews. Of these, 116 (81%) CHA/Ps felt more comfortable in talking about cancer and 57% had increased cancer screening referrals for patients. Additionally, 28% of 110 CHA/P respondents and 21% of 114 CHA/Ps' family members sought and received cancer screening; they had also made lifestyle changes to reduce cancer risk, including tobacco cessation and healthy changes in nutrition and exercise. Through qualitative design, we gained insight into CHA/Ps' lived experience of cancer and an understanding of ways the course made a difference in patient care as well as cancer risk reduction, cancer screening, and prevention for themselves, their families, and people in their communities.

Lanier, A. P., et al. (1999). "Pap prevalence and cervical cancer prevention among Alaska Native women." Health Care Women Int 20(5): 471-486.

The goals of the Alaska Native Women's Health Project (WHP) were to determine the following: (1) Pap prevalence based on chart review before and during an intervention period; (2) the level of understanding of cancer and cancer screening services with emphasis on cervical cancer; (3) use and satisfaction with current health maintenance services; and (4) improvement in knowledge and cancer screening rates following intervention. A random sample of 481 Alaska Native (Eskimo, Aleut, Indian) women living in Anchorage were interviewed face to face about their understanding of cancer risk factors (tobacco use, sexually transmitted diseases (STDs), reproductive issues), cancer screening examinations (Pap test, breast self-examination (BSE), breast exam by a provider, mammography), and their attitudes about health care and health care services. Sixty-two percent of control women were documented to have had at least one Pap test within the 3-year period prior to the beginning of the study; however, only 9% were documented to have had annual Pap screening. The intervention included distribution of educational materials, counseling on any woman's health issue, special evening clinics, and reminders (mail/phone call) of scheduled Pap appointments.

Lanier, A. P. and E. N. Mostow (1991). "Screening for cancer in remotely populated regions--lessons from mammography and breast cancer." Arctic Med Res Suppl: 462-464.

Lantz, P. M., et al. (2003). "Implementing women's cancer screening programs in American Indian and Alaska Native populations." Health Care Women Int 24(8): 674-696.

The National Breast and Cervical Cancer Early Detection Program provides funding to tribes and tribal organizations to implement comprehensive cancer screening programs using a program model developed for state health departments. We conducted a multiple-site case study using a participatory research process to describe how 5 tribal programs implemented screening services, and to identify strategies used to address challenges in delivering services to American Indian and Alaska Native women. We analyzed data from semistructured interviews with 141 key informants, 16 focus groups with 132 program-eligible women, and program documents. Several challenges regarding the delivery of services were revealed, including implementing screening programs in busy acute-care environments, access to mammography, providing culturally sensitive care, and providing diagnostic/treatment services in rural and remote locations. Strategies perceived as successful in meeting program challenges included identifying a "champion" or main supporter of the program in each clinical setting, using mobile mammography, using female providers, and increasing the capacity to provide diagnostic services at screening sites. The results should be of interest to an international audience, including those who work with health-related programs targeting indigenous women or groups that are marginalized because of culture, geographic isolation, and/or socioeconomic position.

Liao, Y., et al. (2010). "Decreasing disparity in cholesterol screening in minority communities--findings from the racial and ethnic approaches to community health 2010." J Epidemiol Community Health 64(4): 292-299.

BACKGROUND: Highly controlled research projects demonstrated success in preventing and controlling cardiovascular diseases. Community-based programs have yet to demonstrate significant influence. Data on large-scale community-level interventions targeting minority communities are limited. The aim of this study is to measure the impact of the Racial and Ethnic Approaches to Community Health (REACH 2010) project, a community-based intervention to eliminate racial/ethnic disparities in blood cholesterol screening in minority communities. METHODS: Annual survey data from 2001 to 2006 were gathered in 22 communities. Trends in the prevalence of age-standardised blood cholesterol screening were examined for four racial/ethnic groups (black, Hispanic, Asian and American Indian/Alaska Native), stratified by education level, and compared with national data from the Behavioral Risk Factor Surveillance System. RESULTS: The prevalence of cholesterol screening increased among persons in black, Hispanic and Asian REACH communities (p<0.001), whereas prevalence decreased in the total US and Hispanic populations (p<0.001) and remained similar among blacks and Asians nationwide. The relative disparity between the total US population and most REACH communities decreased (p<0.05). Relative disparity in cholesterol screening related to education level decreased (p<0.05) within REACH communities, whereas relative disparity related to education level nationwide remained similar in blacks and increased (p<0.001) in Hispanics. CONCLUSION: The REACH project decreased racial and ethnic disparities in cholesterol screening between REACH communities and the total US population, as well as disparities related to education level within REACH communities.

Liburd, L. C., et al. (2005). "Intervening on the social determinants of cardiovascular disease and diabetes." Am J Prev Med 29(5 Suppl 1): 18-24.

Heart disease, cerebrovascular diseases, and type 2 diabetes ranked first, third, and sixth, respectively, among the leading causes of death and disability in the United States in 2000. Racial and ethnic communities (i.e., African Americans, Hispanic-Latino Americans, Native Americans and Alaska Natives, and Asian Americans and Pacific Islanders) disproportionately suffer from these chronic conditions. Traditional behavior change strategies have had some positive, but limited effects and will not likely be sufficient to eliminate these health disparities at the population level. In this commentary, the authors argue for greater intervention research directed at the social determinants of cardiovascular disease and diabetes if we are to reverse current trends in chronic disease prevalence in communities of

color. The authors also call for new research questions and study designs that will increase our understanding of the social, policy, and historic context in which disparities are created as a necessary first step in developing interventions aimed at social-contextual and psychosocial risk factors. Promising programs supported by the Centers for Disease Control and Prevention's Racial and Ethnic Approaches to Community Health (REACH 2010) program and the Division of Diabetes Translation are highlighted.

Lopez-Alvarenga, J. C., et al. (2010). "Polyunsaturated fatty acids effect on serum triglycerides concentration in the presence of metabolic syndrome components. The Alaska-Siberia Project." Metabolism 59(1): 86-92.

Serum fatty acids (FAs) have wide effects on metabolism: Serum saturated fatty acids (SFAs) increase triglyceride (TG) levels in plasma, whereas polyunsaturated fatty acids (PUFAs) reduce them. Traditionally, Eskimos have a high consumption of omega-3 fatty acids (omega3 FAs); but the Westernization of their food habits has increased their dietary SFAs, partly reflected in their serum concentrations. We studied the joint effect of serum SFAs and PUFAs on circulating levels of TGs in the presence of metabolic syndrome components. We included 212 men and 240 women (age, 47.9 +/- 15.7 years; body mass index [BMI], 26.9 +/- 5.3) from 4 villages located in Alaska for a cross-sectional study. Generalized linear models were used to build surface responses of TG as functions of SFAs and PUFAs measured in blood samples adjusting by sex, BMI, and village. The effects of individual FAs were assessed by multiple linear regression analysis, and partial correlations (r) were calculated. The most important predictors for TG levels were glucose tolerance (r = 0.116, P = .018) and BMI (r = 0.42, P < .001). Triglyceride concentration showed negative associations with 20:3omega6 (r = -0.16, P = .001), 20:4omega6 (r = -0.14, P = .005), 20:5omega3 (r = -0.17, P < .001), and 22:5omega3 (r = -0.26, P < .001), and positive associations with palmitic acid (r = 0.16, P < .001) and 18:3omega3 (r = 0.15, P < .001). The surface response analysis suggested that the effect of palmitic acid on TG is blunted in different degrees according to the PUFA chemical structure. The long-chain omega3, even in the presence of high levels of saturated fat, was associated with lower TG levels. Eicosapentaenoic acid (20:5omega3) had the strongest effect against palmitic acid on TG. The total FA showed moderate association with levels of TG, whereas SFA was positively associated and large-chain PUFA was negatively associated. The Westernized dietary habits among Eskimos are likely to change their metabolic profile and increase comorbidities related to metabolic disease.

Lucas, D. L. and J. M. Lincoln (2007). "Fatal falls overboard on commercial fishing vessels in Alaska." Am J Ind Med 50(12): 962-968.

BACKGROUND: Falls overboard are a major contributor to commercial fishing fatalities in Alaska. The National Institute for Occupational Safety and Health has repeatedly identified falls overboard as a critical issue in commercial fishing safety. This article describes the problem of falls overboard and discusses possible ways to reduce the risk factors. METHODS: Data from the Alaska Occupational Injury Surveillance System on fatal falls overboard in Alaska between 1990 and 2005 were used. An in-depth descriptive analysis of these fatalities was performed to identify areas for intervention. RESULTS: There were 71 fatal falls overboard on commercial fishing vessels in Alaska during the 16-year time period. Falls overboard did not decline significantly during those years. The most common circumstances associated with falling overboard were working with fishing gear, being alone on deck, losing balance or slipping, heavy weather, gear entanglement, and alcohol. The level of involvement of those circumstances varied by region and gear type. SUMMARY: Many fatal falls overboard may be prevented by understanding the circumstances involved and targeting interventions at those specific risk factors. Interventions include creating more enclosed work spaces, managing lines, avoiding fishing alone, wearing personal flotation devices and man overboard alarms, and reducing alcohol use. Subsequent

research should identify further interventions for each circumstance and evaluate the effectiveness of these interventions with the fishing industry.

Martinek, K., et al. (1998). "Development and implementation of a breast and cervical cancer screening program in urban and rural Alaska." Int J Circumpolar Health 57 Suppl 1: 399-405.

Early detection of breast and cervical cancers represents the single best strategy to effect the reduction of associated morbidity and mortality. The State of Alaska identified a need to establish a service delivery system which would assure the availability of breast and cervical cancer screening services for women who are low income, under- and uninsured, and from racial/ethnic minorities. In March 1995 the Alaska Breast and Cervical Cancer Early Detection Program (AK-BCCEDP) began funding breast and cervical cancer screening services through the Centers for Disease Control and Prevention, National Breast and Cervical Cancer Early Detection Program. The purpose of AK-BCCEDP is to establish a comprehensive service delivery strategy which includes screening, tracking, referral, follow-up, public education, quality assurance, surveillance, coalition building/partnering, and evaluation. During the first year of services (March 1, 1995, to February 29, 1996) 651 women were screened for breast and cervical cancer. Higher than expected numbers of breast cancer were detected. Of the 651 women screened, four were diagnosed with invasive breast cancer and three were diagnosed with high-grade squamous intraepithelial lesions.

McIntosh, S. E., et al. (2008). "Mountaineering fatalities on Denali." High Alt Med Biol 9(1): 89-95.

Mount McKinley, or Denali, is the tallest mountain in North America and attracts over 1,000 climbers annually from around the world. Since Denali is located within a national park, the National Park Service (NPS) manages mountaineering activities and attempts to maintain a balance of an adventurous experience while promoting safety. We retrospectively reviewed the fatalities on Denali from 1903 to 2006 to assist the NPS, medical personnel, and mountaineers improve safety and reduce fatalities on the mountain. Historical records and the NPS climber database were reviewed. Demographics, mechanisms, and circumstances surrounding each fatality were examined. Fatality rates and odds ratios for country of origin were calculated. From 1903 through the end of the 2006 climbing season, 96 individuals died on Denali. The fatality rate is declining and is 3.08/1,000 summit attempts. Of the 96 deaths, 92% were male, 51% occurred on the West Buttress route, and 45% were due to injuries sustained from falls. Sixty-one percent occurred on the descent and the largest number of deaths in 1 year occurred in 1992. Climbers from Asia had the highest odds of dying on the mountain. Fatalities were decreased by 53% after a NPS registration system was established in 1995. Although mountaineering remains a high-risk activity, safety on Denali is improving. Certain groups have a significantly higher chance of dying. Registration systems and screening methods provide ways to target at-risk groups and improve safety on high altitude mountains such as Denali.

McLaughlin, J., et al. (2005). "Adipose tissue triglyceride fatty acids and atherosclerosis in Alaska Natives and non-Natives." Atherosclerosis 181(2): 353-362.

Essential polyunsaturated fatty acids (PUFA) of the omega-3 family are believed to protect against cardiovascular disease. A rich source of omega-3 PUFA is found in fish and marine mammals (seal, walrus, whale), which are a large part of the traditional diet of Alaska Natives (Eskimo, American Indians, Aleuts), a group that has been reported to have a lower mortality rate from cardiovascular disease than non-Natives. An autopsy study using standardized methods to evaluate the extent of atherosclerosis and its risk factors, and analyses of stored triglyceride fatty acids was conducted in a sample of Alaska Native subjects and non-Native subjects living in Alaska. Findings indicate that Alaska Natives had less advanced atherosclerosis in coronary arteries, along with higher proportions of omega-3 and lower proportions of omega-6 PUFA in adipose tissue, than did non-Natives. We conclude that

high dietary intake of omega-3 PUFA may account for the lower extent of coronary artery atherosclerosis, contributing to the reported lower heart disease mortality among Alaska Natives.

Mohatt, G. V., et al. (2007). "The Center for Alaska Native Health Research Study: a community-based participatory research study of obesity and chronic disease-related protective and risk factors." Int J Circumpolar Health 66(1): 8-18.

OBJECTIVES: To describe the background, approach and general results of the Center for Alaska Native Health Research (CANHR) study. STUDY DESIGN: This was a cross-sectional Community-Based Participatory Research (CBPR) study with one tribal group to assess risk and protection for obesity and the risk factors related to chronic disease, diabetes and cardiovascular disease. METHODS: A combination of biological, genetic, nutritional and psychosocial measurements were taken on 922 Alaska Native participants in ten communities in Southwestern Alaska. The paper reports on data from 753 adult participants. RESULTS: The prevalence of type 2 diabetes is 3.3% in the sample population. Metabolic syndrome is significantly lower among the males and equal for females when compared with Caucasians in the NHANES III sample. Obesity among adults is now at the national average. Risk factors for chronic disease include a shift to a Westernized diet, stress, obesity and impaired fasting glucose and protective factors include high levels of polyunsaturated fatty acid dietary intake. Articles in this issue present specific results in these areas. CONCLUSIONS: The data strongly indicate that, in general, Yup'ik people in our study are metabolically healthy and that diet and life style provide a delicate combination of protective and risk factors. The results strongly indicate that solution focused research utilizing primary and secondary prevention strategies may provide evidence for how to intervene to prevent further increases of chronic diseases. Research that focuses on relating the intrinsic strengths of indigenous worldviews and practices with basic research may contribute to positive transformations in community health.

Mouratoff, G. J., et al. (1967). "Diabetes mellitus in Eskimos." JAMA 199(13): 107-112.

Murphy, N. J., et al. (1992). "Diabetes mellitus in Alaskan Yup'ik Eskimos and Athabascan Indians after 25 yr." Diabetes Care 15(10): 1390-1392.

OBJECTIVE: To estimate the prevalence of diabetes mellitus and overweight in two populations of Alaska Natives and to compare the results with previous data. RESEARCH DESIGN AND METHODS: Participants' heights, weights, and random plasma glucose levels were determined. Those with a glucose of greater than or equal to 6.72 mM received a follow-up glucose-tolerance test, interpreted by WHO criteria. Overweight was defined by National Center for Health Statistics criteria and also by criteria used in previous studies. The subjects were Eskimo and Athabascan residents greater than or equal to 40 yr of age in 15 villages in southwestern Alaska. RESULTS: Diabetes prevalence was 4.7% for Eskimos and 10.0% for Indians. Among Eskimo men and women, the prevalence of overweight was 34 and 56%, respectively, among Indian men and women, it was 29 and 55%, respectively. Comparisons with past data indicate that the prevalence of diabetes has increased from 1.7% in 1962 for Eskimos and 1.8% in 1969 for Indians. CONCLUSIONS: The prevalence of diabetes appears to have increased among Eskimos and Indians in Alaska. Overweight appears to be a significant problem in both groups.

Murphy, N. J., et al. (1995). "Dietary change and obesity associated with glucose intolerance in Alaska Natives." J Am Diet Assoc 95(6): 676-682.

OBJECTIVE: To investigate frequency of food intake, body weight, and glucose intolerance in Alaska Natives. DESIGN: Height, weight, and random blood glucose levels were measured and a frequency-of-food-intake questionnaire was obtained. This questionnaire classified persons as consumers of indigenous foods or nonindigenous foods within three food groups. Those with a random

blood glucose measurement > or = 6.72 mmol/L received an oral glucose tolerance test. SETTING: Community screening in 15 villages in Alaska. SUBJECTS: Nutrition screenings were done for 1,124 Alaska Native residents aged 20 years or older. An oral glucose tolerance test was done for 202 subjects. OUTCOMES MEASURED: Subjects were classified as consumers of indigenous or nonindigenous foods within three food groups. A diagnosis of non-insulin-dependent diabetes mellitus (NIDDM) was made on the basis of World Health Organization criteria. A determination of overweight was made on the basis of National Center for Health Statistics criteria. STATISTICAL ANALYSIS: A chi 2 test with Yates correction, t test, and linear regression, with two-sided P values. RESULTS: Athabascan Indians had twice the rate of NIDDM as Yup'ik Eskimos with significantly higher frequency of nonindigenous food intake, plus lower frequency of indigenous carbohydrate and fat intake. Subjects < or = 30 years old consumed significantly more nonindigenous protein and fat and low-nutrient-density carbohydrates than those > or = 60 years old. Persons who had glucose intolerance reported significantly greater consumption of nonindigenous protein and less seal oil. Incidence of overweight was significantly higher than was found 25 years ago. Participants with glucose intolerance were significantly more overweight than others. CONCLUSION: A pattern of increased frequency of nonindigenous protein, low-nutrient-density carbohydrate, and fat intake with less indigenous carbohydrate and fat consumption was found in subjects < or = 30 years old and in association with the higher rate of NIDDM found in the Athabascan Indians. Persons with glucose intolerance were significantly more overweight than others. APPLICATIONS: Although the nutritional value of indigenous foods for reducing disease risk should be promoted, nutrition education, especially among young adults, should also include building skills to select and prepare nonindigenous foods to attain a healthful diet. Although snacking is a concern, dietary fat was the most significant factor in obesity and NIDDM.

Muus, K. J., et al. (2009). "Body mass index and cancer screening in older American Indian and Alaska Native men." J Rural Health 25(1): 104-108.

CONTEXT: Regular screenings are important for reducing cancer morbidity and mortality. There are several barriers to receiving timely cancer screening, including overweight/obesity. No study has examined the relationship between overweight/obesity and cancer screening among American Indian/Alaska Natives (AI/ANs). PURPOSE: To describe the prevalence of fecal occult blood testing (FOBT) and prostate-specific antigen (PSA) testing among AI/AN men within the past year by age and rurality, and determine if body mass index (BMI) is associated with screening. METHODS: A national cross-sectional survey was administered face-to-face to 2,447 AI/AN men at least 55 years of age in 2004-2005. Participants were asked when they last had FOBT and PSA testing. BMI was derived from self-reported height and weight, and rurality of residence was defined by rural-urban commuting area codes. We assessed the association of cancer screening and BMI with logistic regression models, adjusting for demographic and health factors. FINDINGS: Prevalence of up-to-date FOBT and PSA testing were 23% and 40%, respectively. Older men were more likely than younger men to have FOBT and PSA testing. BMI was not associated with receipt of FOBT or PSA testing. CONCLUSIONS: This is the first study to examine obesity and health care in AI/ANs. As in other populations, FOBT and PSA testing were suboptimal. Screening was not associated with BMI. Studies of AI/AN men are needed to understand the barriers to receiving timely screenings for prostate and colorectal cancer.

Narva, A. S. (2008). "Reducing the burden of chronic kidney disease among American Indians." Adv Chronic Kidney Dis 15(2): 168-173.

American Indians (AIs) and Alaska Natives (ANs) have experienced a dramatic rise in type 2 diabetes and associated complications, including chronic kidney disease (CKD) over the past half century. At the end of 2005, the national prevalence of end-stage renal disease (ESRD) in AIs/ANs was 2.5 times greater than that for white Americans, with rates significantly higher among communities of

the southwest United States. Evidence of CKD among AIs/ANs with diabetes includes abnormal protein excretion in 30% and estimated glomerular filtration rate (eGFR) <60 mL/min/m(2) in 17%. In order to address the growing burden of CKD, the Indian Health Service established the Kidney Disease Program to improve the screening of and the management of diabetics with CKD. Routine reporting of eGFR, yearly monitoring of protein excretion, utilization of renin-angiotensin system (RAS) antagonists, and aggressive control of blood pressure were implemented in association with enhanced patient and provider education. By 2006, 82% of hypertensive diabetics were receiving a RAS antagonist. Implementation of these efforts has been associated with a 31% decrease in ESRD incidence among AIs/ANs with diabetes. This program of improvements in CKD care implemented by a federal agency serving a high-risk population with limited resources may be a useful model for others.

Naylor, J. L., et al. (2003). "Diabetes among Alaska Natives: a review." Int J Circumpolar Health 62(4): 363-387.

This review summarizes the published information on diabetes mellitus and gestational diabetes among Alaska Natives. The most recently published age-adjusted prevalence was 28.3/1000 in 1998. There is evidence of a steadily increasing prevalence, documented both by cross sectional screening studies and patient registry methods. The overall incidence rates in 1986-1998 of lower extremity amputation (6.1/1000) and renal replacement therapy (2.1/1000) appear to be lower than those in other Native American populations in the United States. Incidence of stroke and MI in 1986-1998 varied widely by ethnic group and gender with Eskimo women having the highest rate of stroke (19.6/1000), and Aleut men the highest rate of MI (14/1000). The overall mortality among diabetic Alaska Native people in 1986-1993 (43.2/1000) was somewhat lower than that in other US diabetic populations, with heart disease being the most common cause of death. A high rate of gestational diabetes (6.7%) was reported in one region in 1987-88, but this appeared to decline following nutritional education intervention. In screening studies, the prevalence of abnormal glucose tolerance has been found to be positively associated with body mass index and negatively associated with daily seal oil or salmon consumption and higher levels of physical activity. Observations on the prevalence and relationships among other factors in the insulin resistance syndrome are summarized. Suggestions for prevention of diabetes and further studies are presented.

Nobmann, E. D., et al. (1999). "Associations between dietary factors and plasma lipids related to cardiovascular disease among Siberian Yupiks of Alaska." Int J Circumpolar Health 58(4): 254-271.

The diet of northern Native people has been postulated to protect against cardiovascular disease. We asked whether nutrient and food intakes of Eskimos were correlated with their plasma cholesterol, LDL, HDL, triglycerides and LDL-HDL ratio. Frequency of consumption of 91 foods among 64 Siberian Yupik adults was measured during home-based interviews. Intake of monounsaturated fat by men was negatively correlated with LDL. Foods and nutrients that contribute to the LDL-HDL ratio explained 42% of its variation among all subjects. Inclusion of the body mass index (BMI) explained 59% of the variation in the LDL-HDL ratio. Coefficients were negative for alpha-tocopherol, fresh bird, evaporated milk and cheese, and positive for BMI, syrup and pizza. BMI had a positive effect on the LDL-HDL ratio among younger adults, women and the entire sample, but did not contribute to explaining the variation among older adults or men. This emphasizes the importance of weight control among younger Siberian Yupik women. While coefficients were both positive and negative for traditional and western foods, the presence of traditional foods that were negatively correlated in the regression supports the hypothesis that consumption of traditional foods is important for maintaining cardiovascular health among Siberian Yupiks.

Patten, C. A. (2012). "Tobacco cessation intervention during pregnancy among Alaska Native women." J Cancer Educ 27 Suppl 1: S86-90.

This paper describes a community-based participatory research program with Alaska Native people addressing a community need to reduce tobacco use among pregnant women and children. Tobacco use during pregnancy among Alaska Native women is described along with development of a community partnership, findings from a pilot tobacco cessation intervention, current work, and future directions. Among Alaska Native women residing in the Yukon Kuskokwim Delta region of western Alaska, the prevalence of tobacco use (cigarette smoking and/or use of smokeless tobacco) during pregnancy is 79%. Results from a pilot intervention study targeting pregnant women indicated low rates of participation and less than optimal tobacco abstinence outcomes. Developing alternative strategies to reach pregnant women and to enhance the efficacy of interventions is a community priority, and future directions are offered.

Patten, C. A., et al. (2008). "Evaluation of a Tobacco Educational Intervention for Pregnant Alaska Native Women." J Health Dispar Res Pract 2(3): 33-50.

Tobacco cessation interventions developed and evaluated for Alaska Native women do not exist. As part of routine clinical care provided at a prenatal visit, a brief tobacco educational intervention for Alaska Native pregnant women (N=100; mean +/- SD age = 25.9+/-6.2 years; mean 6.3+/-2.6 months gestation) was piloted at the Y-K Delta Regional Hospital in Bethel, Alaska. This retrospective study reports on the evaluation of this clinical program. The intervention was consistent with the clinical practice guidelines (i.e., 5 A's - ask, advise, assess, assist, arrange), with an average duration of 20.2 +/- 6.8 minutes. The self-reported tobacco abstinence rate following the intervention was 11% at the last prenatal visit and 12% at delivery. Delivering a tobacco cessation intervention at a prenatal visit is feasible, but there is a need to identify more effective interventions for Alaska Native pregnant women.

Patten, C. A., et al. (2009). "Focus groups of Alaska Native adolescent tobacco users: preferences for tobacco cessation interventions and barriers to participation." Health Educ Behav 36(4): 711-723.

Tobacco cessation interventions developed for Alaska Native adolescents do not exist. This study employed focus group methodology to explore preferences for tobacco cessation interventions and barriers to participation among 49 Alaska Natives (61% female) with a mean age of 14.6 (SD = 1.6) who resided in western Alaska. Using content analysis, themes from the 12 focus groups were found to be consistent across village, gender, and age groups. Program location or site (e.g., away from the village, hunting, fishing), a group-based format, and inclusion of medication and personal stories were reported to be important attributes of cessation programs. Motivators to quit tobacco were the perceived adverse health effects of tobacco, improved self-image and appearance, and the potential to be a future role model as a non-tobacco user for family and friends. Parents were perceived as potentially supportive to the adolescent in quitting tobacco. The findings will be used to develop tobacco cessation programs for Alaska Native youth.

Patten, C. A., et al. (2010). "Feasibility of a tobacco cessation intervention for pregnant Alaska Native women." Nicotine Tob Res 12(2): 79-87.

BACKGROUND: Among Alaska Native women residing in the Yukon-Kuskokwim (Y-K) Delta region of Western Alaska, about 79% smoke cigarettes or use smokeless tobacco during pregnancy. Treatment methods developed and evaluated among Alaska Native pregnant tobacco users do not exist. This pilot study used a randomized two-group design to assess the feasibility and acceptability of a targeted cessation intervention for Alaska Native pregnant women. METHODS: Recruitment occurred over an 8-month period. Enrolled participants were randomly assigned to the control group (n = 18; brief face-to-face counseling at the first visit and written materials) or to the intervention group (n = 17)

consisting of face-to-face counseling at the first visit, four telephone calls, a video highlighting personal stories, and a cessation guide. Interview-based assessments were conducted at baseline and follow-up during pregnancy (>or=60 days postrandomization). Feasibility was determined by the recruitment and retention rates. RESULTS: The participation rate was very low with only 12% of eligible women (35/293) enrolled. Among enrolled participants, the study retention rates were high in both the intervention (71%) and control (94%) groups. The biochemically confirmed abstinence rates at follow-up were 0% and 6% for the intervention and control groups, respectively. DISCUSSION: The low enrollment rate suggests that the program was not feasible or acceptable. Alternative approaches are needed to improve the reach and efficacy of cessation interventions for Alaska Native women.

Petersen, W. O., et al. (2002). "Outcomes of training nurses to conduct breast and cervical cancer screening of Native American women." Holist Nurs Pract 16(2): 58-79.
        Native WEB (Women Enjoying the Benefit) is a unique training program for nurses employed by the Indian Health Service (IHS), tribal clinics, and other clinics with large, underserved populations. It teaches nurses breast and cervix cancer screening techniques and trains them to administer and maintain high-quality screening programs that include patient outreach, education, and training. We review American Indian (AI)/Alaska Native (AN) women's need for screening services, identify some of the obstacles to screening, and present our evaluation of the Native WEB's impact on clinics, nurses, and patients. Findings show that Native WEB training is associated with increased screening activity at all three levels.

Provost, E. M. (1996). "Cervical cancer screening on the Yukon-Kuskokwim Delta, Southwest Alaska. A population-based study." Cancer 78(7 Suppl): 1598-1602.
        BACKGROUND: Alaska Native women suffer excess morbidity and mortality due to cervical cancer. This population-based study analyzed data from a regional Pap smear registry to describe the 2-year prevalence of cervical cancer screening for the women who live in remotely located villages in the Yukon-Kuskokwim Delta region. METHODS: All women older than 18 years of age who lived in one of the villages of the Yukon-Kuskokwim Delta were included (n = 6916). A 2-year Pap prevalence rate for each village was estimated by counting the number of women who had at least one Pap smear between September 1, 1992, and August 31, 1994, using the computer-based Pap registry located at the regional medical center in Bethel, Alaska. Population estimates for each village were obtained from a database maintained by the local office of the State of Alaska's Public Health Nurses. RESULTS: The overall 2-year Pap prevalence rate for the population was 62%. By age group, 2-year prevalence rates were as follows: women 18 to 44 years, 64%; women 45 to 64 years, 58%; and women 65 years and older, 52%. CONCLUSION: This study demonstrated that there is a significant need to improve access to and use of cervical cancer screening in this region to achieve national and state objectives. Village-based clinic staff are underutilized for cancer prevention service delivery; with additional training and supervision, staff members may serve as a means to improve this preventive health care service.

Redwood, D., et al. (2011). "Collaboration to increase colorectal cancer screening among low-income uninsured patients." Prev Chronic Dis 8(3): A69.
        BACKGROUND: Colorectal cancer (CRC) is the second leading cause of cancer-related deaths in the United States. CRC screening allows for prevention through the removal of precancerous lesions and early detection of cancer. COMMUNITY CONTEXT: Ride for Life Alaska (RFL), a nonprofit organization that raises funds to fight cancer, and the Anchorage Neighborhood Health Center (ANHC), which is Alaska's largest community health center, joined efforts to provide CRC screening and outreach to an ethnically diverse group of low-income underinsured or uninsured patients residing in and around Anchorage, Alaska. METHODS: RFL and ANHC worked with gastroenterologists, medical practices, and

pathology services to contribute pro bono and reduced-fee services for CRC screening. Information to patients was distributed through signs in the clinic, flyers, and the ANHC website. OUTCOMES: CRC screening was increased in this population. During 2007-2009, there were 2,561 immunochemical fecal occult blood tests given to patients, and 1,558 were completed (61%); 24% were positive. Sixteen gastroenterologists, 4 medical practices, and 2 laboratories provided 111 follow-up colonoscopies and pathology services to patients identified through the CRC screening program who did not have other funding resources available for follow-up care. INTERPRETATION: This program provides a model for leveraging scarce screening resources by drawing on multiple partners to increase CRC screening. Recommendations for those seeking to initiate similar programs are to have memoranda of agreement in place and a clear scope of work for all participating people and organizations to avoid delays in program implementation; hire a screening care coordinator to manage patient care and collaborate with medical practices; and identify program champions who have the energy and persistence to craft such partnerships.

Redwood, D., et al. (2009). "Development of a flexible sigmoidoscopy training program for rural nurse practitioners and physician assistants to increase colorectal cancer screening among Alaska Native people." J Health Care Poor Underserved 20(4): 1041-1048.
        At the Alaska Native Medical Center in Anchorage, colorectal cancer screening rates improved dramatically with the initiation of a dedicated flexible sigmoidoscopy screening program staffed by mid-level providers. We describe the development and implementation of a program to train rural nurse practitioners and physician assistants in flexible sigmoidoscopy.

Redwood, D., et al. (2012). "The last frontier: innovative efforts to reduce colorectal cancer disparities among the remote Alaska Native population." Gastrointest Endosc 75(3): 474-480.
        BACKGROUND: The Alaska Native (AN) population experiences twice the incidence and mortality of colorectal cancer (CRC) as does the U.S. white population. CRC screening allows early detection and prevention of cancer. OBJECTIVE: We describe pilot projects conducted from 2005 to 2010 to increase CRC screening rates among AN populations living in rural and remote Alaska. DESIGN: Projects included training rural mid-level providers in flexible sigmoidoscopy, provision of itinerant endoscopy services at rural tribal health facilities, the creation and use of a CRC first-degree relative database to identify and screen individuals at increased risk, and support and implementation of screening navigator services. SETTING: Alaska Tribal Health System. PATIENTS: AN population. INTERVENTIONS: Itinerant endoscopy, patient navigation. MAIN OUTCOME MEASUREMENTS: AN patients screened for CRC, colonoscopy quality measures. RESULTS: As a result of these ongoing efforts, statewide AN CRC screening rates increased from 29% in 2000 to 41% in 2005 before the initiation of these projects and increased to 55% in 2010. The provision of itinerant CRC screening clinics increased rural screening rates, as did outreach to average-risk and increased-risk (family history) ANs by patient navigators. However, health care system barriers were identified as major obstacles to screening completion, even in the presence of dedicated patient navigators. LIMITATIONS: Continuing challenges include geography, limited health system capacity, high staff turnover, and difficulty getting patients to screening appointments. CONCLUSIONS: The projects described here aimed to increase CRC screening rates in an innovative and sustainable fashion. The issues and solutions described may provide insight for others working to increase screening rates among geographically dispersed and diverse populations.

Roubideaux, Y., et al. (2008). "Relation between the level of American Indian and Alaska Native diabetes education program services and quality-of-care indicators." Am J Public Health 98(11): 2079-2084.
        OBJECTIVES: We examined the relation between the level of diabetes education program services in the Indian Health Service (IHS) and indicators of the quality of diabetes care to determine if

more-comprehensive diabetes services were associated with better quality of diabetes care. METHODS: In this cross-sectional study, we used the IHS Integrated Diabetes Education Recognition Program to rank program services into 1 of 3 levels of comprehensiveness, ranging from lowest (developmental) to highest (integrated). We compared quality-of-care indicators among programs of differing levels with the 2001 IHS Diabetes Care and Outcomes Audit. Quality indicators included patients having recommended yearly examinations, education, and laboratory tests and achieving recommended levels of intermediate outcomes of care. RESULTS: Most of the 86 participating programs were classified at or below the developmental level; only 9 programs (11%) were ranked at higher levels. After adjusting for patient characteristics, program factors, and correlation of patients within programs, we associated programs that were more comprehensive with higher completion rates of yearly lipid and hemoglobin A1C tests (P < .05). CONCLUSIONS: System-wide improvements in diabetes education are associated with better diabetes care. The results can help inform the development of diabetes education programs.

Roubidoux, M. A. (2012). "Breast cancer and screening in American Indian and Alaska Native women." J Cancer Educ 27 Suppl 1: S66-72.

Data relative to breast cancer among American Indian and Alaska native (AI/AN) women are limited and vary by regions. Despite national decreases in breast cancer incidence and mortality rates, declines in these measures have not yet appeared among AI/AN women. Health disparities in breast cancer persist, manifest by higher stage at diagnosis, and lower screening rates compared to other racial and ethnic groups. Disproportionately more AI/AN are younger at diagnosis. Screening beginning at age 40, improving access, annual rescreening, community education and outreach, and mobile mammography for rural areas are ways to improve these disparities in breast cancer.

Roubidoux, M. A., et al. (2003). "Relationship of mammographic parenchymal patterns to breast cancer risk factors and smoking in Alaska Native women." Cancer Epidemiol Biomarkers Prev 12(10): 1081-1086.

The purpose is to determine breast cancer risk factors and correlates of mammographic parenchymal patterns among Alaska Native women. A retrospective review was performed of mammograms and mammogram records among 528 sequential screening mammogram examinations performed in Anchorage, Alaska. Mammogram density was classified by American College of Radiology (Breast Imaging Reporting and Data System) density patterns 1-4 (fat-->dense) and by percent density. Clinical data, including risk factors, ethnic group (Indian, Aleut, or Eskimo), and smoking status were obtained. Results were analyzed by univariate and multivariate analyses. Of 528 women, 164 were Indian, 155 were Aleut, and 209 were Eskimo. Mean age at first birth was lower and parity higher compared with published data in white women. Breast cancer risk factors were similar across ethnic groups. In multivariate analysis, patient age, parity, hormone replacement therapy, hysterectomy, and history of biopsy were associated, and smoking was not associated with density scores. Aleut and Indian women were less likely to have high-density mammograms than were Eskimo women (P = 0.0448). No significant differences were found between ethnic group for conventional breast cancer risk factors. Mammogram density was associated with age at screening, parity, hormone replacement therapy, hysterectomy, history of biopsy, and ethnicity but not smoking status. Eskimo women had higher mammogram density than Aleuts or Indians.

Schumacher, M. C., et al. (2008). "Prevalence and predictors of cancer screening among American Indian and Alaska native people: the EARTH study." Cancer Causes Control 19(7): 725-737.

PURPOSE: The purpose of this study was to examine the prevalence rates for cervical, breast, and colorectal cancer screening among American Indian and Alaska Native people living in Alaska and in the Southwest US, and to investigate predictive factors associated with receiving each of the cancer

screening tests. METHODS: We used the Education and Research Towards Health (EARTH) Study to measure self-reported cancer screening prevalence rates among 11,358 study participants enrolled in 2004-2007. We used prevalence odds ratios to examine demographic, lifestyle and medical factors associated with receiving age- and sex-appropriate cancer screening tests. RESULTS: The prevalence rates of all the screening tests were higher in Alaska than in the Southwest. Pap test in the past 3 years was reported by 75.1% of women in Alaska and 64.6% of women in the Southwest. Mammography in the past 2 years was reported by 64.6% of women aged 40 years and older in Alaska and 44.0% of those in the Southwest. Colonoscopy or sigmoidoscopy in the past 5 years was reported by 41.1% of study participants aged 50 years and older in Alaska and by 11.7% of those in the Southwest US. Multivariate analysis found that location (Alaska versus the Southwest), higher educational status, income and the presence of one or more chronic medical condition predicted each of the three screening tests. Additional predictors of Pap test were age (women aged 25-39 years more likely to be screened than older or younger women), marital status (ever married more likely to be screened), and language spoken at home (speakers of American Indian Alaska Native language only less likely to be screened). Additional predictors of mammography were age (women aged 50 years and older were more likely to be screened than those aged 40-49 years), positive family history of breast cancer, use of smokeless tobacco (never users more likely to be screened), and urban/rural residency (urban residents more likely to be screened). Additional predictors of colonoscopy/sigmoidoscopy were age (men and women aged 60 years and older slightly more likely to be screened than those aged 50-59 years), family history of any cancer, family history of colorectal cancer, former smoking, language spoken at home (speakers of American Indian Alaska Native language less likely to be screened), and urban/rural residence (urban residents more likely to be screened). CONCLUSION: Programs to improve screening among American Indian and Alaska Native people should include efforts to reach individuals of lower socioeconomic status and who do not have regular contact with the medical care system. Special attention should be made to identify and provide needed services to those who live in rural areas, and to those living in the Southwest US.

Stefanich, C. A., et al. (2005). "Development, adaptation, and implementation of a cardiovascular health program for Alaska native women." Health Promot Pract 6(4): 472-481.

Southcentral Foundation's Traditions of the Heart program is an innovative cardiovascular disease prevention program for women designed to build on the strengths of the Alaska Native culture as a way to support and encourage positive lifestyle behaviors that focus on healthy eating, active living, stress management, and tobacco cessation. After conducting assessments of existing intervention programs and formative data collection, we adapted two existing programs, Native Nutrition Circles and A New Leaf... Choices for Healthy Living, to develop the Traditions of the Heart program. We implemented and evaluated a pilot intervention study to determine the program's acceptance among Alaska Native women. We used the evaluation results to further refine our study protocol. This article describes the adaptation of these programs to the cultural needs and strengths of Alaska Native women and the results of the formative evaluation used to improve the program design. The complete pilot study outcomes will be published separately.

Thomas, T. K., et al. (2001). "Is it safe on deck? Fatal and non-fatal workplace injuries among Alaskan commercial fishermen." Am J Ind Med 40(6): 693-702.

BACKGROUND: Commercial fishing in Alaska accounts for an occupational fatality rate that is 28 times the rate for all U.S. workers. Most deaths are attributed to vessel sinking or capsizing. However, many deaths and most non-fatal injuries are not related to vessel loss. This paper describes injuries that occur on the dock or on the fishing vessel. METHODS: Data from fishing fatalities and non-fatal injuries between 1991-1998 were analyzed using the Alaska Occupational Injury Surveillance System and the

Alaska Trauma Registry. RESULTS: There were 60 workplace deaths unrelated to vessel loss; most from falls overboard, others from trauma caused by equipment on deck. There were 574 hospitalized injuries, often from falls on deck, entanglement in machinery, or being struck by an object. SUMMARY: Fishing boats are hazardous working environments. Further efforts are required to prevent falls overboard and on deck, and to redesign or install safety features on fishing machinery and equipment.

Vaid, I., et al. (2011). "WISEWOMAN: addressing the needs of women at high risk for cardiovascular disease." J Womens Health (Larchmt) 20(7): 977-982.

In the United States, the cardiovascular health of women is affected by the disparate impact of cardiovascular diseases (CVDs) on many minority ethnic and racial groups. Women with low income also endure a disproportionate impact of the burden of CVD. The Centers for Disease Control and Prevention's (CDC's) Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN) Program was authorized by Congress in 1993 to extend the preventive health services offered to participants of the National Breast and Cervical Cancer Early Detection Program (NBCCEDP). These are low-income, uninsured, and underinsured women. The intent was to expand services of an existing federal program to address cardiovascular health concerns in this vulnerable, high-risk population. CDC funds 19 state health departments and 2 tribal organizations (both in Alaska) to implement WISEWOMAN. In the first 2 years of the current 5-year funding cycle, which began in June 2008, the WISEWOMAN grantees succeeded in providing almost 78,000 screenings, of which 46% were to women of minority racial and ethnic groups. The individual successes are important, and the WISEWOMAN Program also has achieved success in the broader arenas of healthcare and the communities in which WISEWOMAN is implemented. WISEWOMAN impacts clinical systems of care, provider education, physician extenders, and the broader community and will continue to play an important role in connecting low-income, uninsured, and underinsured women with clinical systems of care and other community resources that will result in the prevention, treatment, and management of their CVD risk.

Van Camp, R. O. (1990). "Heart Day. An experience in cardiovascular risk factor detection in a rural Alaskan population." Alaska Med 32(4): 141-145.

This is a summary of the results of a project to influence cardiovascular risk factors in a rural population using a community based clinic with very limited financial and staffing resources. The project, which was well received by the community, was successful in influencing community-wide awareness of cardiovascular risk factors and in screening many people who would otherwise not receive medical care. A significant number of correctable risk factors for cardiovascular disease were discovered.

von Friederichs-Fitzwater, M. M., et al. (2010). "A value-based approach to increase breast cancer screening and health-directed behaviors among American Indian women." J Cancer Educ 25(4): 582-587.

American Indian/Alaska Native (AI/AN) women have the lowest cancer-screening rate of any ethnic or racial group; AI/AN women in all regions are less likely than non-Hispanic white women to be diagnosed with localized breast cancer; and those AI/AN women presenting with breast cancer have the lowest 5-year survival rate compared to other ethnic groups. This study found that cultural beliefs are more of a factor in mammography screening behavior than other barriers such as access; and that a more holistic educational intervention designed by AI/AN women prompted individual intent and actions to seek mammograms among AI/AN women >40 and to change unhealthy eating and sedentary lifestyles.

Watson-Johnson, L. C., et al. (2011). "Mammography adherence: a qualitative study." J Womens Health (Larchmt) 20(12): 1887-1894.

BACKGROUND: Regular mammography accounts for half of the recent declines in breast cancer mortality. Mammography use declined significantly in 2008. Given the success of regular breast cancer screening, understanding why mammography use decreased is important. We undertook a focus group study to explore reasons women who were previously adherent with regular mammography no longer were screened. METHODS: We conducted 20 focus groups with white non-Hispanic, black non-Hispanic, Hispanic, Japanese American, and American Indian/Alaska Native women, and segmented the groups by age, race/ethnicity, and health insurance status. A conceptual framework, based on existing research, informed the development of the focus group guide. Discussion topics included previous mammography experiences, perceptions of personal breast cancer risk, barriers to mammography, and risks and benefits associated with undergoing mammography. Atlas.ti was used to facilitate data analysis. RESULTS: All focus groups (n=128 women) were completed in 2009 in five cities across the United States. Half of the groups were held with white non-Hispanic women and the remainder with other racial/ethnic groups. Major barriers to routine mammography included (1) concerns about test efficacy, (2) personal concerns about the procedure, (3) access to screening services, (4) psychosocial issues, and (5) cultural factors. For uninsured women, lack of health insurance was the primary barrier to mammography. CONCLUSIONS: Multilevel interventions at the health-care provider and system levels are needed to address barriers women experience to undergoing regular mammography screening. Ultimately, breast cancer screening with mammography is an individual behavior; therefore, individual behavioral change strategies will continue to be needed.

Weber, D. (2012). "That others may live: lessons learned from the 2011 Denali climbing season." Wilderness Environ Med 23(2): 104-105.

Witmer, J. M., et al. (2004). "Heart disease prevention for Alaska Native women: a review of pilot study findings." J Womens Health (Larchmt) 13(5): 569-578.
BACKGROUND: Although historically Alaska Native women have had a relatively low incidence of cardiovascular disease (CVD), this pattern has changed dramatically in recent years. Alaska Native leaders have identified decreasing cardiovascular risk as an intervention priority. METHODS: From October 2000 to April 2001, Southcentral Foundation, an Alaska Native-owned and managed health corporation in Anchorage, conducted a pilot randomized controlled trial of a heart disease prevention program tailored for Alaska Native women. The aim was to assess feasibility and cultural acceptability and to develop enrollment procedures. Of 76 women who enrolled, 44 were randomized to the intervention group. Thirty-seven of 44 attended at least two intervention sessions, 23 completed prequestionnaires and postquestionnaires, and 27 returned for 12-month follow-up screening. Thirty of 32 control group participants returned for 12-month follow-up screening. The intervention included 12 weekly sessions on lifestyle change and goal setting. At baseline and 12 months, participants' height, weight, resting blood pressure, fasting lipid levels, and blood glucose were measured. At sessions 1 and 12, participants completed assessments regarding diet, physical activity, tobacco use, and psychosocial status. RESULTS: At 12 weeks, significant improvements were noted in moderate walking and physical activity self-efficacy. Also observed was substantial movement from the contemplation and preparation stages to the action stage regarding physical activity and heart-healthy eating. CONCLUSIONS: Although the small sample size precludes drawing conclusions about the intervention's effect, participants reported lifestyle and psychosocial changes. The pilot study resulted in protocol changes that improved the design and implementation of a subsequent large-scale study.

Young, T. K., et al. (2007). "Prevalence of obesity and its metabolic correlates among the circumpolar inuit in 3 countries." Am J Public Health 97(4): 691-695.

OBJECTIVES: We investigated the prevalence of obesity and the metabolic correlates of different levels of body mass index (BMI) and waist circumference among the Inuit in 3 countries. METHODS: Data from 4 surveys of Inuit in Canada, Greenland, and Alaska conducted during 1990-2001 were pooled, with a total sample size of 2545 participants. These data were compared with data from a Canadian population of predominantly European origin. RESULTS: Using the World Health Organization criteria for overweight and obesity, we found that the crude prevalence of overweight among Inuit men and women was 36.6% and 32.5%, respectively, and obesity was 15.8% and 25.5%, respectively. Inuit prevalences were similar to those of the highly developed countries of Europe and North America. As levels of obesity increased, as measured by BMI or waist circumference, the mean values of various metabolic indicators-lipid, glucose, and insulin levels and blood pressure-also increased. However, at each level of BMI or waist circumference, the Inuit had lower blood pressure and lipid levels than did Euro-Canadians. CONCLUSIONS: Our data indicate that universal criteria for obesity may not reflect the same degree of metabolic risk for populations such as the Inuit and suggest that ethnic-specific criteria are needed.

Appendix D. Additional Literature Review Key Word Searches

To expand the available national literature and contextualize emergent themes identified during the key informant interviews, a second literature review was conducted during September, 2013. Key words were searched on PubMed, and article titles were reviewed for relevancy. Abstracts of all potentially relevant articles were reviewed, and only those pertinent were read and incorporated into the report. The following key word searches garnered the specified number of articles:

"CDSS" "evaluation" "screening" – 7, 1 incorporated
"provider communication" "screening" rate – 4, 1 incorporated
"provider" "screening guidelines" following – 3, 1 incorporated
"team-based care" "screening" – 3, 0 incorporated
"support staff" "provider" "screening" – 3, 1 incorporated
"tobacco screening" – 23, 2 incorporated
"colorectal cancer screening" "barrier" – 64, 3 incorporated
"screening" "one on one education" – 9, 4 incorporated
"cancer screening" "telephone outreach" – 7, 1 incorporated
"preventive screening" "barrier" – 7, 1 incorporated

This search generated 130 additional articles. After a review of abstracts, 15 articles were read and incorporated into the body of the report.

In addition, specific guidelines, recommendations, and screening rates were referenced from the USPSTF (3), CPSTF (4), healthcare.gov (1), and Alaska DHSS (2) websites. Systematic reviews were consulted from each of the CPSTF relevant screening categories:
- Cardiovascular Disease - 1
- Tobacco – 0 published
- Cancer - 3

In response to DHSS comments on a draft of this report, additional key word searches were conducted in PubMed on Oct. 8, 2013. Titles and abstracts of all potentially relevant articles were reviewed, and only those pertinent were read and incorporated into the report where appropriate. The following key word searches garnered the specified number of articles:
"comment card" – 2, 1 incorporated

Appendix E. Additional Literature Review Results: Annotated Bibliography

(2012). "Updated recommendations for client- and provider-oriented interventions to increase breast, cervical, and colorectal cancer screening." Am J Prev Med 43(1): 92-96.

      The Community Preventive Services Task Force (Task Force) recommends increasing screening for breast cancer through use of group education, one-on-one education, client reminders, reducing client out-of-pocket costs, and provider assessment and feedback; increasing screening for cervical cancer through use of one-on-one education, client reminders, and provider assessment and feedback; and increasing screening for colorectal cancer through use of one-on-one education, client reminders, reducing structural barriers to screening, and provider assessment and feedback. The Task Force found insufficient evidence to determine the effectiveness of increasing screening for breast cancer through use of client incentives, mass media, or provider incentives; for cervical cancer screening through use of group education, client incentives, mass media, reducing client out-of-pocket costs, reducing structural barriers, or provider incentives; and for colorectal cancer screening through use of group education, client incentives, mass media, reducing client out-of-pocket costs, or provider incentives. Details of these findings, and some considerations for use, are provided in this article.

Amonkar, M. M., et al. (1999). "Barriers and facilitators to providing common preventive screening services in managed care settings." J Community Health 24(3): 229-247.

      Despite increasing emphasis on disease prevention and health promotion, and ample evidence demonstrating the effectiveness of preventive services, such services are underutilized in the United States. The current trend of health care toward health maintenance organizations and other managed care systems opens the door, perhaps to more effective control of heart disease, cancers and other chronic diseases through preventive care. This warrants attention to the barriers/facilitators to the provision/utilization of preventive screening services in such settings. Overall goal of this study was to assess barriers/facilitators to the provision/utilization of preventive services in managed care organizations (MCOs). This was accomplished by a) identifying barriers/facilitators to the provision/utilization of three common preventive screening services (cholesterol screenings, mammograms, and Pap smears); and b) profiling typical MCO recipients of these three preventive screening services. A self-administered, mail questionnaire was used to obtain information from a national sample of 1,200 Directors of MCOs associated with preventive care. A total of 175 usable responses were received resulting in a 17.3 percent net response rate. The strongest barrier to the provision of all three screening services is the inability of them to generate short term savings for the MCO. Other barriers include high disenrollment rates, conflicting recommendations about effectiveness (for mammograms and cholesterol screenings), and patients' fears of getting a positive result (for mammograms and Pap smears). The improved health status as a result of early intervention, high consumer awareness (for mammograms and Pap smears), and long term savings are important facilitators to the provision/utilization of these screening services. Comparing barriers and facilitators across the three services shows the stronger barriers affecting the provision/utilization of mammograms. For all three screening services, typical managed care recipients are those in the high income groups with greater education levels. However, with the increasing enrollment of Medicaid beneficiaries into managed care, MCOs may find themselves selectively targeting these high risk low income and less educated individuals to receive the preventive screening services. Study findings should be useful to health planners, policymakers and researchers at all levels in their efforts to encourage and promote healthier lifestyle choices among U.S. residents. Future studies should address receipt of preventive services by Medicaid and Medicare beneficiaries in managed care settings.

Baron, R. C., et al. (2008). "Client-directed interventions to increase community demand for breast, cervical, and colorectal cancer screening a systematic review." Am J Prev Med 35(1 Suppl): S34-55.

Most major medical organizations recommend routine screening for breast, cervical, and colorectal cancers. Screening can lead to early detection of these cancers, resulting in reduced mortality. Yet not all people who should be screened are screened, either regularly or, in some cases, ever. This report presents the results of systematic reviews of effectiveness, applicability, economic efficiency, barriers to implementation, and other harms or benefits of interventions designed to increase screening for breast, cervical, and colorectal cancers by increasing community demand for these services. Evidence from these reviews indicates that screening for breast cancer (mammography) and cervical cancer (Pap test) has been effectively increased by use of client reminders, small media, and one-on-one education. Screening for colorectal cancer by fecal occult blood test has been increased effectively by use of client reminders and small media. Additional research is needed to determine whether client incentives, group education, and mass media are effective in increasing use of any of the three screening tests; whether one-on-one education increases screening for colorectal cancer; and whether any demand-enhancing interventions are effective in increasing the use of other colorectal cancer screening procedures (i.e., flexible sigmoidoscopy, colonoscopy, double contrast barium enema). Specific areas for further research are also suggested in this report.

Bright, T. J., et al. (2012). "Effect of clinical decision-support systems: a systematic review." Ann Intern Med 157(1): 29-43.

BACKGROUND: Despite increasing emphasis on the role of clinical decision-support systems (CDSSs) for improving care and reducing costs, evidence to support widespread use is lacking. PURPOSE: To evaluate the effect of CDSSs on clinical outcomes, health care processes, workload and efficiency, patient satisfaction, cost, and provider use and implementation. DATA SOURCES: MEDLINE, CINAHL, PsycINFO, and Web of Science through January 2011. STUDY SELECTION: Investigators independently screened reports to identify randomized trials published in English of electronic CDSSs that were implemented in clinical settings; used by providers to aid decision making at the point of care; and reported clinical, health care process, workload, relationship-centered, economic, or provider use outcomes. DATA EXTRACTION: Investigators extracted data about study design, participant characteristics, interventions, outcomes, and quality. DATA SYNTHESIS: 148 randomized, controlled trials were included. A total of 128 (86%) assessed health care process measures, 29 (20%) assessed clinical outcomes, and 22 (15%) measured costs. Both commercially and locally developed CDSSs improved health care process measures related to performing preventive services (n= 25; odds ratio [OR], 1.42 [95% CI, 1.27 to 1.58]), ordering clinical studies (n= 20; OR, 1.72 [CI, 1.47 to 2.00]), and prescribing therapies (n= 46; OR, 1.57 [CI, 1.35 to 1.82]). Few studies measured potential unintended consequences or adverse effects. LIMITATIONS: Studies were heterogeneous in interventions, populations, settings, and outcomes. Publication bias and selective reporting cannot be excluded. CONCLUSION: Both commercially and locally developed CDSSs are effective at improving health care process measures across diverse settings, but evidence for clinical, economic, workload, and efficiency outcomes remains sparse. This review expands knowledge in the field by demonstrating the benefits of CDSSs outside of experienced academic centers. PRIMARY FUNDING SOURCE: Agency for Healthcare Research and Quality.

Brouwers, M. C., et al. (2011). "What implementation interventions increase cancer screening rates? a systematic review." Implement Sci 6: 111.

BACKGROUND: Appropriate screening may reduce the mortality and morbidity of colorectal, breast, and cervical cancers. However, effective implementation strategies are warranted if the full benefits of screening are to be realized. As part of a larger agenda to create an implementation

guideline, we conducted a systematic review to evaluate interventions designed to increase the rate of breast, cervical, and colorectal cancer (CRC) screening. The interventions considered were: client reminders, client incentives, mass media, small media, group education, one-on-one education, reduction in structural barriers, reduction in out-of-pocket costs, provider assessment and feedback interventions, and provider incentives. Our primary outcome, screening completion, was calculated as the overall median post-intervention absolute percentage point (PP) change in completed screening tests. METHODS: Our first step was to conduct an iterative scoping review in the research area. This yielded three relevant high-quality systematic reviews. Serving as our evidentiary foundation, we conducted a formal update. Randomized controlled trials and cluster randomized controlled trials, published between 2004 and 2010, were searched in MEDLINE, EMBASE and PSYCHinfo. RESULTS: The update yielded 66 studies new eligible studies with 74 comparisons. The new studies ranged considerably in quality. Client reminders, small media, and provider audit and feedback appear to be effective interventions to increase the uptake of screening for three cancers. One-on-one education and reduction of structural barriers also appears effective, but their roles with CRC and cervical screening, respectively, are less established. More study is required to assess client incentives, mass media, group education, reduction of out-of-pocket costs, and provider incentive interventions. CONCLUSION: The new evidence generally aligns with the evidence and conclusions from the original systematic reviews. This review served as the evidentiary foundation for an implementation guideline. Poor reporting, lack of precision and consistency in defining operational elements, and insufficient consideration of context and differences among populations are areas for additional research.

Carcaise-Edinboro, P. and C. J. Bradley (2008). "Influence of patient-provider communication on colorectal cancer screening." Med Care 46(7): 738-745.
        BACKGROUND: Screening reduces incidence and mortality from colorectal cancer (CRC). Despite improved access, screening is suboptimal and disparate among minority groups. Quality of patient-provider communication may impact CRC screening. OBJECTIVES: We examined the relationship between patient-provider communication and socioeconomic variables on the receipt of CRC screening using data from the Medical Expenditure Panel Survey. SUBJECTS: All persons age 50 years or older (N = 8488). MEASURES: Dependent measures were receipt of CRC screening, fecal occult blood testing, and colonoscopy or sigmoidoscopy. Independent variables included demographic characteristics, patient language, and patient-provider communication measures from the Consumer Assessment of Health Plan survey. RESULTS: Patients who felt they had sufficient time with their healthcare provider were more likely to be screened for CRC. Receiving adequate explanation of healthcare needs from provider was a significant predictor of fecal occult blood testing screening. In addition, persons with less than a high school education, the uninsured, or those with low income were associated with reduced likelihood of receiving CRC screening. Asians and Hispanics had a significantly reduced likelihood of receiving screening in comparison with whites; however, after adjusting for language, no significant differences for race or ethnicity were observed. CONCLUSIONS: Adequate time with a healthcare provider and receiving sufficient explanation of the healthcare processes by providers may improve screening rates. Patient-provider communication may be improved by addressing language needs of non-English speaking patients. Overall improved communication may increase CRC screening rates in underserved populations.

Chen, H. Y., et al. (2012). "Cervical cancer screening in the United States, 1993-2010: characteristics of women who are never screened." J Womens Health (Larchmt) 21(11): 1132-1138.
        BACKGROUND: Regular Pap test screening has contributed to decreasing cervical cancer incidence and mortality over the past decades, yet half of the women diagnosed with cervical cancer have never had a Pap test. Our study aims to examine the cervical cancer screening rate, identify

socioeconomic and demographic risk factors associated with adult women who have never had a Pap test, and examine the relationship of screening with use of related health services. METHODS: Using Behavioral Risk Factor Surveillance System data (1993-2010), a multivariable survey logistic regression model was fitted to estimate odds ratios for associations between risk factors and the outcome of never screened. RESULTS: Between 1993 and 2010, 81.3% of respondents reported they had a Pap test within 3 years; 6.2% were never screened. For women who had a recent checkup, 5.5% were never screened. Among women who had a hysterectomy, 69.4% had a Pap test within 3 years. The multivariable analysis showed that age, race/ethnicity, education, annual household income, never married, and currently uninsured were significantly (p<0.001) associated with never screened. CONCLUSIONS: Screening programs accompanied by adequate treatment options should target women at high risk for never being screened, which could decrease cervical cancer incidence and mortality.

Davis, T. C., et al. (2013). "Contrasts in rural and urban barriers to colorectal cancer screening." Am J Health Behav 37(3): 289-298.
   OBJECTIVES: To contrast barriers to colon cancer (CRC) screening and Fecal Occult Blood Test (FOBT) completion between rural and urban safety-net patients. METHODS: Interviews were administered to 972 patients who were not up-to-date with screening. RESULTS: Rural patients were more likely to believe it was helpful to find CRC early (89.7% vs 66.1%, p < .0001), yet were less likely to have received a screening recommendation (36.4% vs. 45.8%, p = .03) or FOBT information (14.5% vs 32.3%, p < .0001) or to have completed an FOBT (22.0% vs 45.8%, p < .0001). CONCLUSIONS: Interventions are needed to increase screening recommendation, education and completion, particularly in rural areas.

Dietrich, A. J., et al. (2013). "Telephone outreach to increase colon cancer screening in medicaid managed care organizations: a randomized controlled trial." Ann Fam Med 11(4): 335-343.
   PURPOSE: Health Plans are uniquely positioned to deliver outreach to members. We explored whether telephone outreach, delivered by Medicaid managed care organization (MMCO) staff, could increase colorectal cancer (CRC) screening among publicly insured urban women, potentially reducing disparities. METHODS: We conducted an 18-month randomized clinical trial in 3 MMCOs in New York City in 2008-2010, randomizing 2,240 MMCO-insured women, aged 50 to 63 years, who received care at a participating practice and were overdue for CRC screening. MMCO outreach staff provided cancer screening telephone support, educating patients and helping overcome barriers. The primary outcome was the number of women screened for CRC during the 18-month intervention, assessed using claims. RESULTS: MMCO staff reached 60% of women in the intervention arm by telephone. Although significantly more women in the intervention (36.7%) than in the usual care (30.6%) arm received CRC screening (odds ratio [OR] = 1.32; 95% CI, 1.08-1.62), increases varied from 1.1% to 13.7% across the participating MMCOs, and the overall increase was driven by increases at 1 MMCO. In an as-treated comparison, 41.8% of women in the intervention arm who were reached by telephone received CRC screening compared with 26.8% of women in the usual care arm who were not contacted during the study (OR = 1.84; 95% CI, 1.38, 2.44); 7 women needed to be reached by telephone for 1 to become screened. CONCLUSIONS: The telephone outreach intervention delivered by MMCO staff increased CRC screening by 6% more than usual care among randomized women, and by 15.1% more than usual care among previously overdue women reached by the intervention. Our research-based intervention was successfully translated to the health plan arena, with variable effects in the participating MMCOs.

Kawamoto, K., et al. (2005). "Improving clinical practice using clinical decision support systems: a systematic review of trials to identify features critical to success." BMJ 330(7494): 765.

OBJECTIVE: To identify features of clinical decision support systems critical for improving clinical practice. DESIGN: Systematic review of randomised controlled trials. DATA SOURCES: Literature searches via Medline, CINAHL, and the Cochrane Controlled Trials Register up to 2003; and searches of reference lists of included studies and relevant reviews. STUDY SELECTION: Studies had to evaluate the ability of decision support systems to improve clinical practice. DATA EXTRACTION: Studies were assessed for statistically and clinically significant improvement in clinical practice and for the presence of 15 decision support system features whose importance had been repeatedly suggested in the literature. RESULTS: Seventy studies were included. Decision support systems significantly improved clinical practice in 68% of trials. Univariate analyses revealed that, for five of the system features, interventions possessing the feature were significantly more likely to improve clinical practice than interventions lacking the feature. Multiple logistic regression analysis identified four features as independent predictors of improved clinical practice: automatic provision of decision support as part of clinician workflow (P < 0.00001), provision of recommendations rather than just assessments (P = 0.0187), provision of decision support at the time and location of decision making (P = 0.0263), and computer based decision support (P = 0.0294). Of 32 systems possessing all four features, 30 (94%) significantly improved clinical practice. Furthermore, direct experimental justification was found for providing periodic performance feedback, sharing recommendations with patients, and requesting documentation of reasons for not following recommendations. CONCLUSIONS: Several features were closely correlated with decision support systems' ability to improve patient care significantly. Clinicians and other stakeholders should implement clinical decision support systems that incorporate these features whenever feasible and appropriate.

Klabunde, C. N., et al. (2007). "Improving colorectal cancer screening in primary care practice: innovative strategies and future directions." J Gen Intern Med 22(8): 1195-1205.

Colorectal cancer (CRC) screening has been supported by strong research evidence and recommended in clinical practice guidelines for more than a decade. Yet screening rates in the United States remain low, especially relative to other preventable diseases such as breast and cervical cancer. To understand the reasons, the National Cancer Institute and Agency for Healthcare Research and Quality sponsored a review of CRC screening implementation in primary care and a program of research funded by these organizations. The evidence base for improving CRC screening supports the value of a New Model of Primary Care Delivery: 1. a team approach, in which responsibility for screening tasks is shared among other members of the practice, would help address physicians' lack of time for preventive care; 2. information systems can identify eligible patients and remind them when screening is due; 3. involving patients in decisions about their own care may enhance screening participation; 4. monitoring practice performance, supported by information systems, can help target patients at increased risk because of family history or social disadvantage; 5. reimbursement for services outside the traditional provider-patient encounter, such as telephone and e-mail contacts, may foster enhanced screening delivery; 6. training opportunities in communication, cultural competence, and use of information technologies would improve provider competence in core elements of screening programs. Improvement in CRC screening rates largely depends on the efforts of primary care practices to implement effective systems and procedures for screening delivery. Active engagement and support of practices are essential for the enormous potential of CRC screening to be realized.

Nelson, E. C., et al. (1991). "The patient comment card: a system to gather customer feedback." QRB Qual Rev Bull 17(9): 278-286.

Continuous patient feedback can give important information to hospitals about the quality of care they provide. The Patient Comment Card (PCC), a brief form that can be used to gather open-ended comments from patients and to measure quality, was developed during a two-year period and was

extensively evaluated in a series of three pilot tests involving more than 2,000 patients discharged from five hospitals. Evaluation results demonstrate that the questionnaire elicits useful comments from patients and can generate statistically reliable scores and valid quality measures. However, in a field trial in four hospitals, low response rates (15%-27%) reflected, first, lack of follow-up of non-respondents, and second, the fact that most of the PCC quality scores were upwardly biased; these inflated scores were likely to reflect the low response rate. Tools such as the PCC should be used judiciously, given the possible abuses and misinterpretations of hospital quality scores.

Perkins, A., et al. (2013). "Attitudes toward colorectal cancer screening in the digital age: a survey of practices and attitudes among screening-eligible Alabamians." South Med J 106(8): 462-467.
        OBJECTIVES: To ascertain barriers to colorectal cancer screening in an environment of changing recommendations, payment structures, and information access, and to develop strategies for overcoming these barriers by undertaking a population survey of colorectal cancer (CRC) screening knowledge and attitudes in Alabama. METHODS: An 80-item questionnaire focused on cancer screening, specifically CRC screening, was developed and pretested. A random sample of Alabama residents was generated using random-digit dial methods and interviews of 615 participants aged 50 and older were conducted in March 2012 and April 2012. Screened and unscreened groups were compared using chi statistics. RESULTS: Sixty-one percent of Alabamians who participated in this survey reported being screened for CRC, the majority (95%) of these by colonoscopy. Both screened and unscreened participants reported using the Internet for health information more often if they were younger than 65 years. Those screened often reported feeling well informed regarding the guidelines, often to have discussed CRC screening with their family physician, and often to have had other cancer screenings. All of the respondents, screened and unscreened, reported financial considerations to be the most significant barriers to screening. CONCLUSIONS: Although educating the general population could be helpful, a physician championing screening is key. Home stool testing is underused in Alabama in part because physicians are not fully aware of its utility. As financial barriers diminish, it is important to offer multiple effective modalities when available, and insurance reform, which includes payment for preventive care, may improve screening rates.

Sabatino, S. A., et al. (2012). "Effectiveness of interventions to increase screening for breast, cervical, and colorectal cancers: nine updated systematic reviews for the guide to community preventive services." Am J Prev Med 43(1): 97-118.
        CONTEXT: Screening reduces mortality from breast, cervical, and colorectal cancers. The Guide to Community Preventive Services previously conducted systematic reviews on the effectiveness of 11 interventions to increase screening for these cancers. This article presents results of updated systematic reviews for nine of these interventions. EVIDENCE ACQUISITION: Five databases were searched for studies published during January 2004-October 2008. Studies had to (1) be a primary investigation of one or more intervention category; (2) be conducted in a country with a high-income economy; (3) provide information on at least one cancer screening outcome of interest; and (4) include screening use prior to intervention implementation or a concurrent group unexposed to the intervention category of interest. Forty-five studies were included in the reviews. EVIDENCE SYNTHESIS: Recommendations were added for one-on-one education to increase screening with fecal occult blood testing (FOBT) and group education to increase mammography screening. Strength of evidence for client reminder interventions to increase FOBT screening was upgraded from sufficient to strong. Previous findings and recommendations for reducing out-of-pocket costs (breast cancer screening); provider assessment and feedback (breast, cervical, and FOBT screening); one-on-one education and client reminders (breast and cervical cancer screening); and reducing structural barriers (breast cancer and FOBT screening) were reaffirmed or unchanged. Evidence remains insufficient to determine effectiveness for the remaining

screening tests and intervention categories. CONCLUSIONS: Findings indicate new and reaffirmed interventions effective in promoting recommended cancer screening, including colorectal cancer screening. Findings can be used in community and healthcare settings to promote recommended care. Important research gaps also are described.

Schillo, B. A., et al. (2011). "The relation between media promotions and service volume for a statewide tobacco quitline and a web-based cessation program." BMC Public Health 11: 939.

BACKGROUND: This observational study assessed the relation between mass media campaigns and service volume for a statewide tobacco cessation quitline and stand-alone web-based cessation program. METHODS: Multivariate regression analysis was used to identify how weekly calls to a cessation quitline and weekly registrations to a web-based cessation program are related to levels of broadcast media, media campaigns, and media types, controlling for the impact of external and earned media events. RESULTS: There was a positive relation between weekly broadcast targeted rating points and the number of weekly calls to a cessation quitline and the number of weekly registrations to a web-based cessation program. Additionally, print secondhand smoke ads and online cessation ads were positively related to weekly quitline calls. Television and radio cessation ads and radio smoke-free law ads were positively related to web program registration levels. There was a positive relation between the number of web registrations and the number of calls to the cessation quitline, with increases in registrations to the web in 1 week corresponding to increases in calls to the quitline in the subsequent week. Web program registration levels were more highly influenced by earned media and other external events than were quitline call volumes. CONCLUSION: Overall, broadcast advertising had a greater impact on registrations for the web program than calls to the quitline. Furthermore, registrations for the web program influenced calls to the quitline. These two findings suggest the evolving roles of web-based cessation programs and Internet-use practices should be considered when creating cessation programs and media campaigns to promote them. Additionally, because different types of media and campaigns were positively associated with calls to the quitline and web registrations, developing mass media campaigns that offer a variety of messages and communicate through different types of media to motivate tobacco users to seek services appears important to reach tobacco users. Further research is needed to better understand the complexities and opportunities involved in simultaneous promotion of quitline and web-based cessation services.

Sutfin, E. L., et al. (2012). "Screening and brief intervention for tobacco use by student health providers on college campuses." J Am Coll Health 60(1): 66-73.

OBJECTIVE: This study assessed college students' reports of tobacco screening and brief intervention by student health center providers. PARTICIPANTS: Participants were 3,800 students from 8 universities in North Carolina. METHODS: Web-based survey of a stratified random sample of undergraduates. RESULTS: Fifty-three percent reported ever visiting their student health center. Of those, 62% reported being screened for tobacco use. Logistic regression revealed screening was higher among females and smokers, compared to nonsmokers. Among students who were screened and who reported tobacco use, 50% reported being advised to quit or reduce use. Brief intervention was more likely among current daily smokers compared to current nondaily smokers, as well as at schools with higher smoking rates. Screening and brief intervention were more likely at schools with lower clinic caseloads. CONCLUSIONS: Results highlight the need to encourage college health providers to screen every patient at every visit and to provide brief intervention for tobacco users.

Thompson, N. J., et al. (2000). "A randomized controlled trial of a clinic-based support staff intervention to increase the rate of fecal occult blood test ordering." Prev Med 30(3): 244-251.

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BACKGROUND: Colorectal cancer is the second most common fatal malignancy in the United States. Early detection using fecal occult blood tests has been shown to reduce mortality, but these tests are underutilized among those eligible for this screening. Attempts to increase use of fecal occult blood tests in eligible populations have focused on the provider, patient, or system. But none have examined whether a support-staff intervention is effective in achieving this aim. We therefore conducted a randomized controlled trial to test the impact of authorizing support staff to order fecal occult blood tests in a general internal medicine clinic organized into four teams. METHODS: A total of 1,109 patients were included in the study, 545 of whom were in the two teams randomized to treatment. Univariate and multivariate regression analyses were used to evaluate the impact of the intervention. RESULTS: The intervention resulted in significantly more fecal occult blood test ordering in the treatment group than in the control group for all patients (52% vs 15%, P < 0.001). Treatment fecal occult blood test cards were returned as frequently as the control cards for all patients (44% vs 48%, P = 0.571). CONCLUSION: Delegation of selected screening tasks to support staff can enhance patient access to preventive care.

Villani, J. and K. Mortensen (2013). "Patient-provider communication and timely receipt of preventive services." Prev Med.
OBJECTIVE: To estimate the association between how patients rate their health care provider's communication and the receipt of six clinical preventive services recommended by the U.S. Preventive Services Task Force (USPSTF) and the Advisory Committee on Immunization Practices (ACIP). METHODS: This study used national data from the 2009 Medical Expenditure Panel Survey (MEPS). The samples (sizes vary by service) included individuals aged 18years and older who have a usual source of care (USC). The outcomes indicated whether or not individuals received screening for breast cancer, cervical cancer, colon cancer, high cholesterol, hypertension, or were vaccinated against influenza per clinical guidelines. Multivariate logistic regression models were created for each dependent variable. The main independent variables consisted of ratings of four patient-provider communication behaviors. RESULTS: In unadjusted analyses, respondents who rated their providers' communication higher reported greater utilization of preventive services. After controlling for confounding variables, only receipt of mammograms remained significantly associated with better communication (p<0.05). Screening for cervical cancer, colon cancer, high cholesterol, and influenza vaccination approached significance with better communication (p<0.10). CONCLUSIONS: Patient-provider communication is associated with receipt of regular mammograms. Clinicians should consider their medical dialogue with patients as a stimulus for appropriate screenings and vaccinations.

Wagholikar, K. B., et al. (2013). "Formative evaluation of the accuracy of a clinical decision support system for cervical cancer screening." J Am Med Inform Assoc 20(4): 749-757.
OBJECTIVES: We previously developed and reported on a prototype clinical decision support system (CDSS) for cervical cancer screening. However, the system is complex as it is based on multiple guidelines and free-text processing. Therefore, the system is susceptible to failures. This report describes a formative evaluation of the system, which is a necessary step to ensure deployment readiness of the system. MATERIALS AND METHODS: Care providers who are potential end-users of the CDSS were invited to provide their recommendations for a random set of patients that represented diverse decision scenarios. The recommendations of the care providers and those generated by the CDSS were compared. Mismatched recommendations were reviewed by two independent experts. RESULTS: A total of 25 users participated in this study and provided recommendations for 175 cases. The CDSS had an accuracy of 87% and 12 types of CDSS errors were identified, which were mainly due to deficiencies in the system's guideline rules. When the deficiencies were rectified, the CDSS generated optimal recommendations for all failure cases, except one with incomplete documentation. DISCUSSION AND CONCLUSIONS: The crowd-sourcing approach for construction of the reference set, coupled with

the expert review of mismatched recommendations, facilitated an effective evaluation and enhancement of the system, by identifying decision scenarios that were missed by the system's developers. The described methodology will be useful for other researchers who seek rapidly to evaluate and enhance the deployment readiness of complex decision support systems.

Wallace, A. E., et al. (2006). "Women's primary care providers and breast cancer screening: who's following the guidelines?" Am J Obstet Gynecol 194(3): 744-748.

OBJECTIVE: Screening mammography for woman ages 50 to 69 years has resulted in early breast cancer detection and reduced mortality rates. However, the providers who are responsible for women's preventive health care differ in breast cancer screening guideline adherence. We compared screening practices across provider specialty and training degree types. STUDY DESIGN: Using a retrospective cohort design, we examined 472 patient records that represented 16 million preventive health care visits among women ages 50 to 69 years from the 2000 National Ambulatory Medical Care Survey. We calculated relative risk ratios for breast examination and mammography during preventive visits across provider specialty and training types. RESULTS: Among specialists, gynecologists are more likely than internists or general/family practitioners to follow breast cancer screening guidelines. Across training degree types, mid-level providers are more likely than medical doctors or osteopaths to adhere to guidelines. CONCLUSION: Regardless of specialty type or training degree, women's health care providers should adhere to breast cancer screening guidelines during preventive care visits.