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Evaluating an Electronic Measure of Colorectal Cancer Screening at Indian Health Service Facilities, 2008-2010

Diana Redwood, PhD, MPH, Senior Epidemiologist, Alaska Native Epidemiology Center, Alaska Native Tribal Health Consortium, 3900 Ambassador Drive, Anchorage, Alaska, 99508, 907-729-3959; Anil Suryaprasad, MD, Medical Epidemiologist, Centers for Disease Control and Prevention, 1600 Clifton Rd NE, MS G-37, Atlanta, GA 30333, Phone: 404-718-8571; Donald Haverkamp, MPH, Medical Epidemiologist, Centers for Disease Control and Prevention, Division of Cancer Prevention and Control, 5300 Homestead Road NE, Albuquerque, NM 87110, Phone: 505-248-4422;[3] Charlene Wong, MD, Robert Wood Johnson Foundation Clinical Scholars Program, University of Pennsylvania, 423 Guardian Drive, Philadelphia, PA 19104, Phone: 215-573-2583; Ellen Provost, DO, MPH, Director, Alaska Native Epidemiology Center, Alaska Native Tribal Health Consortium, 3900 Ambassador Drive, Anchorage, Alaska, 99508, Phone: 907-729-4567; David Espey, MD Medical Epidemiologist, Centers for Disease Control and Prevention, Division of Cancer Prevention and Control, 5300 Homestead Road NE, Albuquerque, NM 87110, Phone: 505-248-4392

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Abstract:

Background: Colorectal cancer (CRC) is a leading cause of cancer mortality in American Indian and Alaska Native (AIAN) people, and incidence rates vary considerably among AIAN populations throughout the United States. Screening has the potential to prevent CRC deaths by detection and treatment of early disease or removal of precancerous polyps. Surveillance of CRC screening is critical to efforts to improve

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delivery of this preventive service, but existing CRC screening surveillance methods for AIAN are limited. The Government Performance and Results Act (GPRA) CRC screening clinical care measure provides data on CRC screening among AIAN populations.

Purpose: The aim of this study was to evaluate the accuracy of the GPRA measure for CRC screening (sensitivity, specificity, positive predictive value and negative predictive value), determine reasons for CRC screening misclassification (procedures noted as screening when they were actually diagnostic exams), and to suggest opportunities for improving surveillance for CRC screening nationwide for AIAN populations.

Methods: Medical record reviews (paper and electronic) were compared to the GPRA-reported CRC screening status for 1,071 patients receiving care at tribal health facilities. A total of 8 tribal health facilities (2 small, 3 medium, and 3 large) participated in the study from the Pacific Coast, the Southwest, the Southern Plains, and Alaska IHS regions. Screening-eligible patients were identified using queries of the local electronic health record from January 2007 to December 2008, and medical chart reviews were completed at participating facilities from September 2008 to June 2010.

Results: Among 545 patients classified as screened by the GPRA measure, 305 (56%, CI: 52%-60%) had a false positive for screening as compared with medical record review. The overall sensitivity of the GPRA measure for CRC screening was 93% (CI=89%-95%) while specificity was 62% (CI: 59%-66%). The most common reasons for misclassification were for diagnostic or surveillance tests to be recorded as screening (67%), as well as medical record miscoding (18%) due to miscoding, charting errors, screenings performed outside the IHS, testing for a non-screening purpose, and categorization of patients as screened when a test had been ordered but not actually completed.

Conclusions: This study found that the GPRA CRC screening clinical measure overestimates the true screening rate due to the inclusion of diagnostic and surveillance exams, especially colonoscopy, as well as misclassification errors. The results of this study suggest a need to more accurately use the ICD-9 diagnostic code V76.51, which was associated with frequent coding errors. In combination with other programmatic efforts that focus on screening average- risk, asymptomatic American Indian and Alaska Native persons, improving the coding used for CRC screening may help to more accurately detect decreases in AIAN CRC incidence and mortality.

Background

Colorectal cancer (CRC) is a leading cause of cancer mortality in American Indian and Alaska Native (AIAN) people.[1] Among AIAN people overall incidence and death rates from CRC are similar to the United States (U.S.) White population.[2] However, AIAN people are a geographically dispersed, heterogeneous population. Incidence rates of CRC among AIAN groups vary considerably throughout the U.S., with the highest rates found in Alaska (102.6 per 100,000) and the Northern Plains (72.5 per 100,000), and the lowest in the Southwest U.S. (21.0 per 100,000).[3] CRC presents in AIAN people with more advanced disease at diagnosis as compared to non-Hispanic Whites.[3-6]

In the U.S., CRC incidence and death rates for men and women of all races/ethnicities declined from 1997-2006, whereas CRC AIAN rates did not decline, except for incidence rates for AIAN men.[7] Declining national trends in CRC incidence and mortality among adults 50 years and older have been largely attributed to increases in CRC screening.[7-11] Screening has the potential to prevent CRC by detection and removal of precancerous polyps in the colon and rectum, as well as detecting early cancer at less costly, more treatable stages.[8,12-14] The most common screening options include tests that primarily detect cancer (stool tests) and those are more likely to detect cancer and precancerous growths, including flexible sigmoidoscopy and colonoscopy.[15-17] The United States Preventive Services Task Force (USPSTF) recommends routine CRC screening for average-risk men and women, ages 50-75, using annual high-sensitivity guaiac-based fecal occult blood tests (gFOBT) or immunochemical fecal occult blood tests (FIT); flexible sigmoidoscopy every five years combined with high-sensitivity fecal occult blood testing every three years; or colonoscopy every ten years. For adults aged 76 to 85, the USPSTF does not recommend routine screening but acknowledges that there may be considerations that support screening in an individual patient or first-time screening for those who have not previously been screened.[13,18]

Surveillance of CRC screening is critical to efforts to improve delivery of this preventive service. States perform surveillance for selected types of cancer screening through the Behavioral Risk Factor Surveillance System (BRFSS). Using Healthy People 2010 measures, BRFSS data from 2010 showed that 49% of AIAN respondents ages 50-75 had a colonoscopy within ten years compared with 62.5% of U.S. Whites.[19] A similar percentage of AIAN (15%) over age 50 had used a blood stool test within the past year as U.S. Whites (11%).[20] However, BRFSS has recognized limitations in rural AIAN populations due to poor phone penetrance in rural areas, the frequent use of cell phones as a primary household line, and the voluntary nature of its surveys.[21,22] The AIAN screening rate remains far below the Healthy People 2020 target (based on National Health Interview Study data) of 70.5% of adults being up-to-date with the USPSTF CRC screening recommendations.[23]

In 1993, the U.S. Congress enacted the Government Performance and Results Act (GPRA) to improve the program performance of federal agencies. The Indian Health Service (IHS) uses GPRA reporting to provide an assessment of the quality of healthcare delivered in the Indian health system on an annual basis. GPRA mandates the tracking and reporting of IHS clinical care measures to Congress and the Office of

Management and Budget (OMB). The IHS GPRA measures were developed using the Health Effectiveness Data and Information Set (HEDIS) coding guidelines. There are currently 22 clinical GPRA measures reported by IHS, including diabetes, dental access and care, immunizations, cancer screening, behavioral health screening, cardiovascular disease prevention, and HIV screening. Specific benchmarks for each measure are set annually, and are used for quality improvement, performance measurement, public health care, epidemiology, and research. Tribal and Federal programs report IHS GPRA data through the Clinical Reporting System (CRS). This is a software application which extracts data out of the Resource Patient Management System (RPMS), the centralized electronic health record for the Indian Health Service.

The CRC screening measure was added as a GPRA performance measure in 2006, and remains the major source of national CRC screening prevalence data among AIAN. AIAN screening rates reported through GPRA have been increasing nationwide, from 22% in 2006 to 46% in 2012. However, screening rates in 2012 vary considerably by IHS region from 33% in the IHS Phoenix Area to 60% in the IHS Oklahoma Area.[24] Although CRC incidence and mortality can be reduced substantially through screening and early detection, the AIAN CRC screening rate using USPSTF recommendations remains far lower than other screen-detectable cancers including breast and cervical cancer in this population.[24]

The aims of this study were to evaluate the accuracy of the GPRA measure for CRC screening, determine reasons for false positive and false negative GPRA CRC screening misclassification, and suggest opportunities for improving surveillance for CRC screening nationwide for AIAN populations.

Methods

The CRC screening definition used for the IHS GPRA measure is based on diagnostic and procedure codes in the electronic medical record (RPMS). The numerator for the GPRA CRC screening measure included AIAN patients who received fecal occult blood tests or fecal immunochemical test during the report period, flexible sigmoidoscopy or double contrast barium enema (DCBE) in the past 5 years, or colonoscopy in the past 10 years. Use of DCBE as a screening test was included in the GPRA CRC screening measure until 2013 when it was removed to bring the measure in line with changes in the national USPSTF recommendations. Additionally, until 2009, documented refusals in the past year also counted towards meeting the CRC screening clinical GPRA measure. Numerator codes for FOBT or FIT include Current Procedural Terminology (CPT) codes 82270, 82274, 89205, G0107, G0328, G0394, Logical Observation Identifier Names and Codes (LOINC) taxonomy, and site-populated taxonomy: BGP GPRA FOB TESTS. For flexible sigmoidoscopy the allowable codes include Procedure code 45.24, CPT 45330 through 45345, and G0104. For DCBE the allowable codes include CPT or VRad 74280, G0106, and G0120. For colonoscopy the allowable codes include International Classification of Diseases, Ninth Revision (ICD-9) Purpose of Visit (POV) code V76.51, Procedure codes 45.22, 45.23, 45.25, 45.42, 45.43 and CPT codes 44388 through 44394.

The denominator for the GPRA CRC screening measure includes all living active clinical patients (2 or more visits to a health facility within the previous 3 years) aged 51-80 residing in the service area during the reporting period. Denominator exclusions include a documented history of colorectal cancer or total colectomy with POV codes 153.*, 154.0, 154.1, 197.5, V10.05, CPT codes G0213 through G0215, G0231, 44150 through 44151, 44152, 44153, 44155 through 44158, 44210 through 44212, and procedure code 45.8.

In this study medical record review was defined as the gold standard for determining screening status. Medical record review included the review of electronic health records with keyword searches and document review as well as examination of paper records with review of progress notes and relevant reports. Screening tests were defined as tests ordered without presenting symptoms or signs. Non-screening tests were defined as tests ordered for diagnostic or surveillance purposes. Diagnostic testing was defined as testing due to the presence of symptoms or signs. Surveillance testing was defined as follow-up endoscopy for high risk patients, especially those with a history of adenomatous polyps, inflammatory bowel disease, or after colorectal cancer resection.

This analysis focused on two main outcomes, including: 1) the ability of the GPRA measure to serve as a predictor of true screening status as determined by chart review using sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) and 2) reasons for screening status misclassification, including errors due to miscoding, charting errors, screenings performed outside the IHS, testing for a non-screening purpose, and categorization of patients as screened when a test had been ordered but not actually completed.

The study protocol was reviewed and approved by the Indian Health Service National Institutional Review Board (IRB) as well as the Alaska Area IRB, and had relevant tribal clearance in the participating IHS regions.

Outcome Measures and Statistical Analysis

A sample size of 8 IHS facilities was chosen to represent different tribal facility sizes and geographical distribution (see Figure 1). Eight tribal health facilities participated in the study: two sites in the Pacific Coast IHS region, two in the Southwest region, one in the Southern Plains region, and three in Alaska. Screening-eligible patients were identified using queries of the local electronic health record from 2007 to 2008, and medical chart reviews were completed at participating facilities from

Figure 1. Map of Government Performance and Results Act (GPRA) validation study sites, 2008-2010.

September 2008 to June 2010.

Patient records were selected at random from screened and unscreened groups using a 1:1 ratio. A total of 150 patient charts at three large and three medium size facilities and 75 to 100 patient charts at two small facilities were determined to be an appropriate sample size of charts to review to determine true CRC screening rates, assuming 80% power to detect a difference between GPRA classification and medical record classification and an alpha of 0.05. Statistical analysis was performed with SPSS for Windows, Version 20.0 (IBM, Chicago, IL, USA). Proportions and confidence intervals were calculated for categorical data. Binomial tests were used to calculate confidence intervals for the sensitivity and specificity of the GPRA measure using the results of the medical chart review as the gold standard.

Results

General patient demographics and clinical characteristics are shown in Table 1. The mean patient age was 60.3 years and the male to female ratio was approximately 2:3. The majority of patients (42%) were from Alaska, 23% were from the Southwest, 21% were from the Pacific Coast, and 14% were from the Southern Plains. A total of 29 patients (3%) had a family history of colorectal neoplasia, 92 (9%) had a personal history of adenomatous polyps, and 40 (4%) had a personal history of colorectal neoplasia documented in the medical record, all of which contribute to an increased risk of CRC warranting more frequent screening and/or surveillance.

Among 545 patients classified as screened by the GPRA measure, 305 (56%, CI: 52%-60%) had a false positive for screening as compared with medical record review. The overall sensitivity of the GPRA measure for CRC screening was 93% (CI=89%-95%) while specificity was 62% (CI: 59%-66%) (Table 2). Sensitivity and specificity were not significantly different when refusals were removed from the analysis. Of 545 patients screened according to the GPRA measure, 240

were screened according to chart review yielding a positive predictive value of 44% (CI: 40%-48%). Of 526 unscreened per the measure, 507 were unscreened by chart review, yielding a negative predictive value of 99% (CI: 97%-99%).

The most common reason for misclassification was for diagnostic or surveillance tests to be recorded as screening (67%) (Table 1). The next most common reason for misclassification was miscoding as another type of procedure (18%), followed by tests that were ordered but not completed (8%), tests that were not captured as screening by the electronic health record (6%), and tests that were done outside the facility (2%). The use of the code V76.51 was especially prone to error, resulting in 96% of all miscoding occurrences. According to the GPRA measure, the most frequent screening type was colonoscopy. However, on medical record review which corrected GPRA misclassifications, the most frequent actual screening type was fecal occult blood testing. While the majority of fecal occult blood tests (78%) were determined in chart review to be for screening purposes, the majority of colonoscopies (64.9%) were found to be for diagnostic or surveillance purposes. Flexible sigmoidoscopy and double contrast barium enemas (DCBE) were infrequently used tests. There were no significant differences in GPRA misclassification by sex or IHS facility, but there was greater misclassification among patients over age 60, primarily due to a higher proportion of diagnostic and surveillance colonoscopies completed within this age group (data not shown).

Conclusions

To our knowledge, this is the first formal evaluation of an

Table 1. Patient demographics, clinical characteristics, and reasons for Government Performance and Results Act (GPRA) misclassification, 2008-2010

Characteristic	No.	(%)
Total	1071	(100)
Sex		
Male	461	(43.0)
Female	607	(56.7)
Age, y		
45-50	15	(1.4)
51-60	573	(54.1)
61-70	319	(30.1)
71-80	153	(14.4)
Region		
Southern Plains	150	(14.0)
Southwest	241	(22.5)
Pacific Coast	227	(21.2)
Alaska	453	(42.3)
Family history of CRC	29	(2.7)
Personal history of polyps	92	(8.6)
Personal history of CRC	40	(3.7)
GPRA misclassification	305	(56.0)
Refusal misclassification	12	(35.3)
Reasons for misclassification (n=328)		
Tested for non-screening purposes (diagnostic/surveillance)	219	(66.5)
Miscoding	59	(18.0)
Ordered but not done	25	(7.6)
Not captured by EHR	18	(5.5)
Done outside of facility/other	8	(2.4)
Screening indication captured by GPRA measure (n=458)		
DCBE	2	(11.8)
Colonoscopy	325	(35.1)
Flexible sigmoidoscopy	43	(76.7)
FOBT	88	(78.4)

CRC, colorectal cancer; EHR, electronic health record; DCBE, double contrast barium enema; FOBT, fecal occult blood test.

IHS GPRA clinical measure in comparison with medical chart review and RPMS review, and is unique in assessing how many patients captured in the GPRA numbers were truly receiving CRC screening versus diagnostic or follow-up tests. Many IHS tribal health facilities perform periodic data quality assurance audits to compare medical charts to the RPMS record. Additionally, several studies have examined the accuracy of specific diagnostic codes in the RPMS as compared to patient chart review, including conditions such as cervical cancer, obesity, and diabetes mellitus.[25-28]

This study found that the GPRA CRC screening clinical measure overestimates the true screening rate due to the inclusion of diagnostic and surveillance exams, especially colonoscopy procedures, as well as misclassification errors due to miscoding or categorizing patients as screened when a test had been ordered but not actually completed. There are several potential reasons why GPRA measures could be inaccurate: 1) an incorrect code is used such that the patient is not included in the numerator (miscoding), 2) screening information is not documented in RPMS; tests are sent to an outside facility for analysis and the results are not then entered into the facility medical record system; or the information is not yet entered into RPMS (data entry errors), or 3) the name of the test, especially for lab tests, is different than the site GPRA taxonomy and so is not included in the measure (incorrect taxonomy). The use of the code V76.51 was especially prone to error, resulting in the majority of all miscoding occurrences. This ICD-9 code is literally read as "special screening for malignant neoplasm of the colon." With such a broad definition, coders use V76.51 for all of the types of screening tests with their different time intervals. GPRA however misinterprets this code as specifying colonoscopy suitable for 10 years, even if the actual screening was fecal occult blood testing which is only good for one year. These miscoding errors result in the GPRA measure showing patients as screened when in fact their screening is out of date. Overall the GPRA measure has a high sensitivity and negative predictive value, but a relatively low specificity and positive predictive value.

This study was subject to the following limitations. First, AIAN people access healthcare at multiple locations, so a patient's screening status at one facility might under represent their true screening status. However, this study focused on the accuracy of the GPRA measure, not on attempting to characterize screening prevalence. Second, the selected sites might not represent all IHS sites. However, the results at each site were similar, despite varying size and geographical distribution. Third, diagnostic and surveillance testing serve the screening function in most patients, even if not intended for screening, so contribute to understanding overall CRC screening trends in the AIAN population.

The results of this study suggest a need to more accurately use the ICD-9 diagnosis code V76.51, which was associated with frequent coding errors. Because this code does not distinguish one screening modality from another, it is not possible to ascertain the proper timeframe for the measure. Additional training for coders across the Indian Health Service is recommended to help reduce GPRA misclassification errors. In 2012, the V76.51 code was removed from HEDIS, as well as from the GPRA CRC measure for 2013. Miscoding also plays a role in automated RPMS reminders for screening, which can often be out-of-date. Caution is needed in interpreting the GPRA measure in the patient care setting, as many patients had a history of polyps and/or a family history of CRC, both of which require more frequent follow-up than GPRA intervals for the average risk population. Also, screening results could be entered into RPMS only after a screening test has been completed, to reduce the chance of recording tests that are ordered but not completed, or tests that require a change in the initial test order codes. It is also important to periodically audit RPMS reminders to make sure they coincide with actual screening. Addressing these issues could affect billing and reimbursement, provide quality improvement for the medical record, as well as improve the accuracy of GPRA for tracking screening rates at IHS facilities. Lastly, exploring alternative tools to the GPRA measure, such as oversampling AIAN in population-based surveys based on self report may help to better quantify the true CRC screening rate in AIAN populations.

CRC screening has been increasing substantially throughout IHS regions nationwide due to multiple intervention campaigns and greater emphasis by tribal providers on the benefits of early screening. Many providers in the IHS are embracing the idea to encourage universal use of fecal occult blood testing. Various centers are considering

Table 2. Sensitivity and specificity of Government Performance and Results Act (GPRA) measure for detection of CRC screening

	No. (%)	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
Screening including refusals as screened	1071	93 (89 - 95)	62 (59 - 66)	44 (40 - 48)	96 (94 - 98)
Screening with refusals not counted as screened	1071	97 (93 - 99)	61 (58 - 65)	40 (36 - 44)	99 (97 - 99)

newer FOBT approaches such as the immunochemical FOBT that are more sensitive and sometimes require fewer samples for testing than the older guaiac-based FOBT.[29-33] The IHS has also created a strategic plan to increase CRC screening among AIAN populations, which focuses on four priority areas: 1) Health care professional education and practice, 2) Public education and awareness, 3) Health policy, and 4) Screening capacity.[34] Many activities are occurring within each of these areas, including trainings for tribal community health providers, development of health education materials for community members, convening regional IHS CRC summit meetings, conducting stool test research studies in tribal areas, and exploring ways to increase tribal member access to screening in rural and urban areas.[35-38] The impact of these combined efforts may be seen through a possible increase in AIAN CRC screening rate trends. Understanding the factors that impact the GPRA clinical measure for CRC screening, as well as making improvements in the GPRA measure will help IHS and tribal organizations to better evaluate the impact of CRC prevention and control activities.

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Popular Weight Loss Diets in 2013

Rachel Lopez, MPH, RD, CSO National Institutes of Health, Clinical Center rachael.lopez@nih.gov*; Elaine Little, MS, RD, ACL Hospital, Indian Health Service*

While achieving and maintaining a healthy weight is one of the best ways to improve your overall health, it is very important to choose a weight loss plan that is also safe, promotes overall health and meets your nutrient needs. This article discusses the popular diet trends for 2013, including Weight Watchers®, the Paleo Diet, Intermittent Fasting, the Gluten-Free diet, the Vegan diet, and the Mediterranean Diet. This article is not meant to be a comprehensive discussion of all of the available diets, but rather a tool that will help you evaluate the benefits and concerns for each of these diets and to see if any of these diets fit your needs. This article provides an outline of each of these specific diets, including foods to choose and foods to avoid, discusses the health benefits and concerns related to the diet, and gives tips on how to follow the diet healthfully and successfully. References are provided for further information.

WEIGHT WATCHERS® DIET

Overview of the diet

Weight Watchers has been rated as #1 for best weight-loss diets by the *US News and World Report*.[1] The program acknowledges that food is only part of the weight loss equation and therefore also encourages social support via the online community and/or in-person meetings, physical activity and healthy food choices[2]. This program also provides numerous resources, including meal planning tips, recipes, grocery shopping tips, tips for eating out, and links to social support. Weight Watchers also has a line of foods, but dieters who choose this plan do not need to purchase Weight Watchers brand foods in order to follow this diet plan.

The Diet

The Weight Watchers program purports to help people learn to eat healthfully by assigning a daily point limit, individualized according to age, gender, height and baseline weight. All foods are assigned a point value based on the protein, carbohydrate, fat and fiber content. Foods that are lower in calories and higher in fiber, which promotes satiety, are assigned a lower point value. For example, fruits and non-starchy vegetables are "free" (or zero points), so you can eat as many as you like. Foods that are higher in calories, sugar, and/or fat are assigned a higher point value. Fried foods and high-calorie desserts cost more points, so portions must be small and consumed infrequently to avoid exceeding the daily point value. I.e., these higher calorie (higher point) foods should be saved for special occasions.

Foods to choose/Foods to avoid

All foods are "allowed" on the diet plan as long as the total point value of foods and fluids consumed is within the allotted point budget.

Health benefits of the diet

While all foods are allowed on the diet, Weight Watchers encourages dieters to choose fruits, vegetables and whole grains, low-sodium foods, and low-fat foods. Therefore, when foods are chosen as intended, the diet aligns with the 2010 Dietary Guidelines for recommended intake of fat, protein, carbohydrate and sodium.[1]

The diet also suggests a weight loss goal of two pounds per week, which is a safe rate of weight loss. By promoting healthy eating and weight loss, the Weight Watchers diet plan confers not only the health benefits of weight loss, including improved cardiovascular health, decreased risk of diabetes and/or improved blood glucose management, among others, but also aims to improve overall nutrition status.

Health concerns regarding the diet

Since all foods are allowed on the diet, individuals may choose a combination of foods that do not meet their nutrient needs even though the total point value is within their limit. The Weight Watchers program recommends taking a daily multivitamin to make sure the dieters are getting enough calcium, zinc, magnesium, iron, vitamin B12, among other nutrients. A multivitamin may indeed be advisable per a 2008 study in the Nutrition Journal citing that dieters on the Weight Watchers program decreased their intake of riboflavin, niacin, potassium, calcium, magnesium, iron, and zinc, though not necessarily below recommended levels.[3] However, more research on the nutrient intake of dieters would be needed to confirm this advice.

Tips for following this diet

To recap the health benefits of this diet, embrace the variety of healthy "free" foods, including fruits and non-starchy vegetables. Use the program's numerous resources, including recipes, menu planners and support groups, to find an individualized plan that meets your nutrition needs and food preferences.

PALEO DIET

Overview of the diet

The Paleo Diet (a.k.a. "Caveman Diet," "Hunter-Gatherer Diet") is based on the theory that our bodies are genetically programmed to eat like our Paleolithic ancestors. The plan is based on eating plants and wild animals similar to what cavemen are presumed to have eaten around 10,000 years ago, during the Paleolithic era, prior to agriculture.[4] Proponents of the diet claim that our bodies are genetically programmed to eat like our Paleolithic ancestors and this way of eating is the biologically appropriate diet that suits us best, with the proper balance of nutrients to promote health and reduce the incidence of chronic disease.[5] Weight loss is also commonly reported, anecdotally, by those who follow and promote the Paleo diet and lifestyle.

The Diet

Guidelines of the Paleo Diet are simple: if our ancestors were not able to hunt/fish/gather it, it is not permitted. Any and all processed foods are eliminated. This essentially eliminates all grain products, sugar, potatoes, dairy, processed oils, and legumes. In an effort to mimic our ancestors as closely as possible, organic/minimally processed products are recommended. Likewise, wild-caught fish and grass fed meats are strongly encouraged. Vegetables, fruits, nuts and tree nuts are also permitted, usually in unlimited amounts, although some Paleo plans limit servings of fruit and certain types of vegetables (e.g. starchy or nightshade). Juices and alcohol are not permitted, and although there is some variety in plans, most Paleo diet plans restrict caffeine and confine fluids to only water, coconut water, and green tea.

Foods to choose/Foods to avoid

Foods to choose include grass-fed meat, fish, eggs, fresh fruits and vegetables, nuts, seeds, and specific oils such as olive oil, macadamia oil, among others.[6] Avoid all processed foods, legumes, cereal grains, sugar and salt.[6] For a complete list of foods to choose and foods to avoid, see *http://thepaleodiet.com/what-to-eat-on-the-paleo-diet/*.

Health benefits of the diet

Although a very popular diet recently, there are opposing views related to the benefits of the Paleo diet. Supporters of the diet claim that the foods eliminated on this plan are the culprits for modern day chronic diseases such as obesity, heart disease, and diabetes, and that we are not genetically equipped to process them. Loren Cordain, PhD, Colorado State University professor and author of The Paleo Diet, states "Clinical trials have shown that the Paleo Diet is the optimum diet that can lower the risk of cardiovascular disease, blood pressure, markers of inflammation, help with weight loss, reduce acne, promote optimum health and athletic performance."[4]

Health concerns regarding the diet

Due to the fat content of the Paleo diet, and as with any new diet plan, it is recommended to discuss the diet with your medical provider prior to starting, with special attention if there are medical conditions present. This is especially true for individuals with cardiac issues or diabetes, even more so if insulin is part of the medical intervention.

Many health experts question the legitimacy of the plan, and cite a lack of research substantiating Paleo diet claims. Critics of the Paleo diet argue that the optimal diet for the "cave man" differs entirely from the optimal diet of modern day society due to extreme differences in activity level, lifestyle factors, and evolutionary factors for both the human genome and the evolution of the food supply. Christina Warriner, research Associate in the Department of Anthropology at the University of Oklahoma and a Research Affiliate of the Molecular Research Group at the University of Zurich's Centre for Evolutionary Medicine, explains "just about every single species commonly consumed today—whether a fruit, vegetable or animal—is drastically different from its Paleolithic predecessor," again suggesting that the Paleo diet of today differs entirely from the diet of our ancestors.[7]

Furthermore, the Paleo diet plan contradicts decades of research suggesting the benefits of a plant-based diet. "People who eat diets high in whole grains, beans, and low-fat dairy tend to be healthier because these foods are nutrient-rich and there are mountains of research about the health benefits of diets that include, not exclude, these foods," says Keith Ayoob, EDd, RD, an assistant professor at New York's Albert Einstein School of Medicine.[4]

A spokesperson for the Academy of Nutrition and Dietetics (formerly known as the American Dietetic Association) states, "This diet has some great aspects, but the limitations make it another diet that people go on but can't sustain for a number of reasons, including a lack of variety, cost, and potential nutrient inadequacies due to the elimination of certain food groups."[7]

As far as the nutritional adequacy, average intakes on the Paleo diet plan meet government recommendations for protein, and come in well below the daily maximum for sodium. However, average intakes on this plan exceed the government recommendations for fats and fall far below the recommendation for carbohydrates (23% of calories compared to government recommendation of 45-65% of total calories).[5] Dieters are advised to add vitamin D supplements and fish oil supplements (depending on intakes of fish).[5] Some sources also suggest a calcium supplement.[5]

Tips for following this diet

There are substantial benefits to including whole, unprocessed foods and eliminating processed foods and sugars from the diet, and these principles are the basis for most

healthy meal plans. The strict nature of the plan may be a challenge for some, but if one uses the opportunity to experiment with and enjoy the wide variety of produce available it can be much more satisfying. Many plans encourage a 'cheat' meal every so often as well. As with any diet plan, acknowledging a 'cheat' meal as such and getting back on program is key to sustainable weight loss. Using the wide variety of online resources and books for support can also promote success.

INTERMITTENT FASTING

Overview of the diet

Fasting, intermittent fasting (IF), or alternate day fasting (ADF), has long been practiced in some form or another for a variety of reasons (e.g. religious, spiritual reflection, or protest), but has recently gained popularity for its use in general wellness and weight management. In addition to weight loss/maintenance, many people use fasting as a way to cleanse the body of toxins, although some experts say our bodies are entirely able to cleanse themselves without any outside assistance.

The diet

There are various types of fasting programs available today, each varying by length, timing, and allowance of liquids, as well as other variables. Some fasting diets involve drinking nothing but water or eating only raw foods for a period of one or more days, while others restrict food on alternate days. Certain fasting diets only allow liquids like water, juice, or tea, while others dramatically cut calories but do not eliminate food altogether.[8]

Foods to choose/Foods to avoid

The foods to choose and foods to avoid vary according to type and schedule of fasting.

Health benefits of the diet

Proponents of fasting for health reasons have suggested that regular intermittent fasting promotes detoxification, improves insulin sensitivity, increases longevity, reduces inflammations and risk factors for heart disease and diabetes, as well as promotes weight loss.[9] While the ideas and claims in regards to intermittent fasting have not come without controversy and opposing views, much of the recent research has resulted in findings in favor of fasting for metabolic effects.[10] A more recent review of literature published by the American Journal of Clinical Nutrition[11] investigated many of these benefits by reviewing 44 different studies, both human and animal trials. While many studies indicated positive measureable changes in the non-obese population, such as increased fat oxidation and weight loss in fasting subjects, it was unclear as to whether this was an effect of fasting in general or overall caloric deficit. Furthermore, authors concluded that, 'Hunger on fasting days did not habituate over the course of the study, which perhaps indicates the unlikelihood of subjects continuing on this diet for extended periods of time.[11] Whether alternate-day fasting would promote weight loss in an obese population is uncertain.[12] At this time, research has not produced sufficient data to support the theory of detoxification with regard to various types of fasting, as studies have not measured this component, and many health professionals feel the body is perfectly capable of doing this on its own.

Health concerns regarding the diet

While the concept of fasting has existed for quite some time, long term effects of various forms of fasting have not been measured. The above-referenced review of literature and studies that are cited within it, however, do generate a great bit of interest and indicate a need for further research. Fasting for short periods likely would not be a risk for someone who is generally otherwise healthy. However, experts warn that fasting for extended periods can be dangerous, especially for individuals with medical conditions such as diabetes, among other conditions. The body needs a supply of nutrients to function optimally, and deprivation may prove to be harmful. Researchers do not yet know whether the effects of fasting translate into an actual increase in lifespan, because they have not followed people for long enough periods of time. However, the concept of intermittent fasting, such as skipping a meal purposefully on an intermittent basis, may be a relatively safe way to reduce caloric intake in a healthy population. The data however is not sufficient to support this as a weight loss plan, nor is this an accepted practice.[13]

Tips for following this diet

As stated above, the research does not support the use of Intermittent Fasting as a safe or effective weight loss plan. If choosing this plan, it is strongly recommended to discuss with your health care provider first. Experts warn that low-calorie days should be packed with nutrients and that fasters should maintain a proper balance on normal days, too – especially if weight loss/management is the goal. If one does decide to embark on a fasting period, maintaining proper hydration is essential to avoid complications. Again, as with any new diet or lifestyle change, it is strongly recommended to speak with your medical provider prior to starting any fasting program.

GLUTEN-FREE DIET

Overview

Going gluten-free (GF) is a necessary way of life for people diagnosed with celiac disease and gluten intolerance. However, more and more people without celiac disease or gluten sensitivity are turning to GF diets as a means of weight loss. Today, supermarkets have entire aisles dedicated to GF processed food products. Market researcher, Packaged Facts, shows that the gluten-free food and beverage market was worth more than 4 billion dollars in 2012 and growing.[14] The likes of

Oprah Winfrey, Gwyneth Paltrow and Miley Cyrus spur on this trend. This article will focus on the gluten-free diet in terms of a weight loss plan only, not for those who require the diet due to medical reasons.

Gluten is protein found naturally in barley, rye and wheat (bulgur, durum, farina, graham, kamut, semolina and spelt). While oats themselves may not contain gluten they may be contaminated during growing and processing. Gluten is also used as an additive to thicken or stabilize food products. For example, gluten can be found in textured vegetable protein, cereal binding, marinades, and sauces among other ingredients.

The FDA has defined "gluten-free" to be used for food products that contain less than 20 parts per million of gluten. Products labeled as "gluten free" must meet this criteria by August of 2014, but it is only a voluntary claim that manufacturers can use in the labeling of their foods. Therefore, not every gluten-free food will be labeled as such. See *http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm 367654.htm* for more information about labeling.

For packaged foods that are not labeled specifically as "gluten-free," especially those with numerous ingredients, it is important to review each ingredient to confirm that the product is gluten free. For a complete list of gluten-containing ingredients, see *http://celiac.org/live-gluten-free/gluten-free-diet/sources-of-gluten/*.

Foods to choose/Foods to avoid

The key to going GF is to know which foods contain gluten and avoid them. It may be obvious that gluten is found in most breads, bread products, cakes and cookies. It takes due diligence to find the not-so-obvious sources of gluten such as blended seasonings (especially seasoning packets that come with rice or pasta dishes), salad dressings, marinades, sauces, candies, and vegetarian-styled imitation meats, to name a few.

Fortunately, there is an abundance of naturally GF foods. All fruits and vegetables are gluten-free, as are distilled spirits, milk and most cheeses, eggs, poultry, meat and fish. Naturally gluten-free grains and starches include plain rice, quinoa, potatoes, corn, amaranth, sorghum, gluten-free oats and millet, among others. For a more complete list of gluten-free foods, see *http://celiac.org/live-gluten-free/gluten-free-diet/food-options/*.

Health benefits of the diet

A gluten-free diet can be a very nutritious diet. Selecting naturally gluten free, whole foods, such as fruits, vegetables, lean proteins, and GF whole grains, in place of refined sugars and fat-laden processed foods, can lead to healthy weight loss.

Health concerns regarding the diet

Just because a food is gluten-free, does not mean it is a healthy food. While years ago being gluten-free meant eating fewer refined foods, more fresh produce and lean protein, with the aforementioned increase in gluten-free products, the nutrient content of gluten-free foods has changed significantly. Many gluten-free products can be higher in fat, carbohydrates and/or calories and lower in fiber than their common grain alternatives. Whereas whole grain foods, such as breads and cereals, are great sources of B vitamins, iron, and folate, many GF foods are not fortified with these nutrients. Therefore, eating a strict GF diet without a variety of foods rich in B vitamins and iron could lead to anemia, depression and nervous system disorders, due to vitamin deficiencies. Individuals who follow a strict GF diet should consider taking a multivitamin if they are unable to get all of their nutrients from whole foods

A 2008 study by Dalhousie Medical School at Dalhousie University discovered that GF products can cost nearly 2.5 times the non-GF food it is replacing.[14] The higher cost of GF foods may mean that individuals are unable to afford other healthy foods, such as fresh produce and lean proteins.

In regard to weight loss, further research is needed because most of the studies have been conducted on populations with celiac disease or gluten intolerance. While there is a lot of anecdotal evidence on both sides, some studies suggest that the GF diet can help with weight loss[15] while other studies suggest people may actually gain weight eating GF.[16]

Tips for following this diet

In the end, in order to lose weight you need to reduce calories, not gluten. Replacing a gluten-containing snack food with a GF alternative is not the answer. A gluten-free cookie is still a cookie. Dietitians and nutritionists recommend eating more fruits and vegetables, lean proteins and whole grains to everyone. Choosing these foods, in their recommended amounts, will help most people lose weight or maintain a healthy weight, with or without gluten. If choosing a GF diet for weight loss purposes, ensure that you continue to choose nutrient dense, whole, unprocessed foods, and to replace any nutrients you are missing by not eating common grain foods.

VEGAN DIET

Overview

The most common vegetarian diet typically excludes red meat, poultry and fish; however, eggs and dairy products are consumed. The vegan diet is perhaps considered a more extreme form of vegetarianism since it entirely excludes any type of animal derived products and is entirely plant based. The most common reasons for individuals to adopt the vegan diet are health, animal welfare, environment and influence by spouse, parents or healthcare professionals.[17] Based on a nationwide public poll conducted in 2006, approximately 1.4% of Americans identified themselves as vegans.[18]

The Diet:

Given that vegans consume strictly plant-based foods, appropriate well-planned meals are key factors for a successful, healthy vegan diet. The following macro and micro

nutrients demand special considerations. Protein intake should be consumed from a variety of sources such as soy/soy products, wheat, cereals, nuts, beans and legumes. It is recommended that vegans include more than one protein source per meal in order to maximize amino acid (essential/non-essential) balance and overall protein utilization. Calcium requirements are generally met by consuming broccoli, collard greens, kale, and fortified products, such as soy beverages, cereals, and juices while limiting oxalate-rich sources such as spinach and Swiss chard as they may reduce calcium bioavailability. Vitamin D food sources include fortified soy beverages, fortified juices, and fortified breakfast cereals. Dark leafy greens, dried beans and grains are good sources of Iron. It is recommended that vegans consume vitamin C to enhance iron absorption in addition to selecting specific food mode preparations such as fermentation, sprouting and soaking, which may increase iron bioavailability. Iodine requirements can be met by consuming iodized salt and sea vegetables. Vitamin B12 rich sources include fortified cereals, imitation meat products, soy beverages or vitamin B12 supplementation (e.g. Vegetarian Support Formula Nutritional yeast). Good sources of Zinc include nuts, legumes, soy products, beans, seeds, and grains. In order to meet Omega-3 Fatty Acid needs, it is recommended that vegans consume flaxseed, canola oil, walnuts, and docosahexaenoic acid (DHA) fortified cereals and soy beverages.

Foods to choose/Foods to Avoid

Only plant based foods are allowed. All foods containing any ingredient of animal origin are to be avoided on the vegan diet.

Health benefits of the diet

In regards to weight loss, individuals who follow a vegan diet have shown to maintain lower BMIs than non-vegans.[19] This is in line with the fact that choosing plant based foods that are nutrient-dense and high in fiber, such as fruits and vegetables, and whole grains, can be satiating with fewer total calories, allowing individuals to reach a healthy weight.

The vegan diet has also been positively associated with the treatment and/or prevention of certain chronic diseases and some types of cancers. A recent clinical study determined that adequate consumption of specific protective nutrients such as fiber, antioxidants, carotenoids, and vitamins over a one year period may significantly reduce prostate, breast and colon cancers.[20] Turner-McGrievy at. el. (2008) reported that type II diabetics who follow a vegan diet showed glycemic control improvement and reduction of hemoglobin A1c.[21] The vegan diet has been shown to be conducive for decreasing the risk of certain cardiovascular diseases and favorable in promoting HDL metabolism while lowering LDL cholesterol levels.[22]

Health concerns regarding the diet

Given the absolute restriction of animal derived foods, vegans are at higher risk for developing nutritional deficiencies for protein, omega-3 fatty acids (particularly DHA form), iron, zinc, iodide, calcium, vitamin D, and vitamin B12. In one study, individuals with chronic renal disease who followed a vegan diet experienced restrictive protein selection and had lower energy intake than non-vegans.[23] Vitamin D studies have identified higher rates of vitamin D deficiency among vegans than non-vegans.[24] Furthermore, inadequate consumption of calcium, protein and vitamin D among vegans has been associated with unfavorable bone health, which may lead to bone fractures and early osteoporosis onset. Recent studies have found that young adults adopting a vegan lifestyle tend to have a higher risk of developing disordered eating behaviors than omnivores.[25]

Tips for following the diet

When appropriately followed, the vegan diet can be nutritionally complete and a healthy diet that may promote a healthy weight status as well as positive therapeutic effects on the prevention and treatment of several chronic diseases. In order to increase compliance to a vegan regimen, an individual should consider veganism as a way of life with long term commitment in mind. Additionally, comprehensive nutritional knowledge on veganism will facilitate proper food selection, meal planning and food shopping. Cost of vegan food products (i.e. fresh fruits, vegetables) and their availability could hinder an adequately balanced diet, therefore, nutritional supplementation should be considered if there is a risk of nutrient deficiency (i.e., Iron, vitamin B12, vitamin D, Zinc, calcium and omega-3 fatty acids). There are a number of vegan support groups available via internet and locally, however, caution should be taken to ensure the information presented is scientifically valid.

THE MEDITERRANEAN DIET

Overview of the diet

The Mediterranean Diet is not just a food pattern, but a lifestyle. With at least 16 countries bordering the Mediterranean Sea, the diet varies depending on country and/or region, but common characteristics include: abundant plant-origin foods such as fruits, vegetables, legumes, nuts, bread, pasta, and rice; the use of olive oil as the main source of additional fat; moderate consumption of fish, seafood, poultry, dairy products, and eggs; small amounts of red meat; and daily low to moderate intake of wine. Those who adopt this lifestyle combine ingredients from local agriculture, use recipes and cooking methods of various Mediterranean cultures, share meals, traditions, and celebrations, and participate in moderate physical activity. According to the American Heart Association (AHA), "People who follow the average Mediterranean diet

eat less saturated fat than those who eat the average American diet. In fact, saturated fat consumption is well within our dietary guidelines."[26] The AHA also reports that heart disease and death rates are lower in Mediterranean countries and that this may be as a result of both diet and lifestyle factors associated with those living in Mediterranean countries.[26]

The Diet

The Mediterranean diet emphasizes the importance of water consumption, portion size and moderation. Daily physical activity is considered paramount for overall good health and the diet is grounded on the principles of enjoyment and pleasure. Foods, drinks, and meals are meant to be shared with others and savored.[27]

Foods to choose/Foods to avoid

The Mediterranean Diet Pyramid provides some basic guidelines. The base of the pyramid depicts physical activity and socializing and simply states, "Be physically active, enjoy meals with others." The next level of the pyramid is made up of foods to eat daily such as fruits, vegetables and grains. The next level consists of fish and seafood recommended two times a week, followed by the level containing dairy, eggs, and poultry recommended weekly, and the pyramid is topped with red meat and sweets recommended less often.[28] Whole, unprocessed foods are essential to the Mediterranean diet while processed foods should be kept to a minimum, if consumed at all.

Health benefits of the diet

The AHA recognizes that those who follow the Mediterranean diet may be doing their heart health a favor. The combination of the whole foods meal pattern with limited animal proteins and sweets, coupled with daily physical activity are close to what the dietary recommendations are here in the US. The Mayo Clinic reported that an analysis of more than 1.5 million healthy adults showed that those following a Mediterranean diet had reduced risk of death from heart disease and cancer, and reduced incidence of Parkinson's and Alzheimer's diseases.[29]

Health concerns regarding the diet

It is important to recognize that adopting a Mediterranean diet lifestyle does not mean adding extra virgin olive oil and wine to a typical American diet. If one is not careful, a poorly designed Mediterranean diet meal plan could provide far too much fat from nuts, olive oil, dairy and other meat proteins, leading to weight gain. Reduced iron levels could occur as a result of decreased animal protein intake but could be resolved by consuming vegetarian sources of iron, as well as Vitamin C, which helps the body absorb iron. Careful attention to calcium intake, from vegetarian sources of calcium, calcium fortified foods, and/or calcium supplements can prevent calcium deficiency from the decreased intake or dairy products.[30]

Tips for following this diet

Think of the Mediterranean diet not as a diet but as a lifestyle. Learn to enjoy fresh, wholesome meals with family, friends and wine. Find out about new foods and new preparation methods and share the process with others. Stay active naturally and by doing things you enjoy such as walking, yard-work, or taking the elevator instead of the stairs. Use the numerous print and internet resources to help guide you to plan a well-balanced Mediterranean meal plan that utilizes whole foods to benefit your health.

Conclusion

In conclusion, if you are looking for a plan that will help you lose weight, choose one that you can incorporate into your lifestyle to achieve long-term, sustainable benefits. Also consider the other health benefits and/or concerns related to the diet. As always, talk to your health care provider if you have any concerns. Remember that healthy eating has many benefits that span beyond weight loss, so eat well to enjoy a healthy life!

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Popular Weight Loss Diets in 2013

Diet	Foods allowed	Foods not allowed	Health Benefits	Health concerns
Weight Watchers	Foods are assigned a point value. All foods are allowed as long as the total for the day is less than the individual's point limit (determined by age, height, weight, and other factors).	See "foods allowed"	Promotes safe rate of weight loss. When foods are chosen as intended, the diet aligns with the 2010 Dietary Guidelines and promotes weight loss, improved cardiovascular health, decreased risk of diabetes and/or improved blood glucose management, among decreased risk of other chronic diseases.	Since all foods are allowed on the diet, individuals may choose a combination of foods that do not meet their nutrient needs even though the total point value is within their limit. This can lead to an increased risk of chronic diseases. Potential risk of inadequate intake of micronutrients.
Paleo Diet	Grass-fed meat, fish, eggs, fresh fruits and vegetables, nuts, seeds, and specific oils such as olive oil, macadamia oil, among others	All grain products, all processed foods, sugar, potatoes, dairy, processed oils, legumes, dairy, juices, alcohol	Meets government recommendations for protein and sodium. Prioritization of whole foods rather than processed foods can increase intake of nutrient dense, lower calorie foods.	Excludes major food groups, increasing the risk of micronutrient deficiencies. Specific concern for Vitamin D and calcium. High in fat, therefore not appropriate for individuals with specific medical conditions. Contradicts decades of research suggesting the benefits of a plant-based diet.
Intermittent Fasting	Varies according to fasting plan.	Most foods. Varies according to fasting plan.	Research ongoing regarding potential health benefits.	Risk of dehydration on fasting days. Potential for over-eating on non-fasting days. Fasting may not be safe for individuals with pre-existing medical conditions such as diabetes.

Popular Weight Loss Diets in 2013

Diet	Foods allowed	Foods not allowed	Health Benefits	Health concerns
Gluten-free Diet	Plain fruits, vegetables, dairy products (milk, cheese, yogurt), eggs, meat, poultry, fish. Gluten free grains such as plain rice, quinoa, potatoes, corn, amaranth, sorghum, gluten-free oats and millet, among others. (This is not a complete list.)	The following foods and any foods containing these as ingredients: Wheat Rye Barley Barley Malt Bulgur Cereal binding Couscous Durum Einkorn Emmer Filler Faro Flour Graham flour Hydrolyzed vegetable protein Kamut Malt Modified starch Semolina Spelt Textured vegetable protein Triticale Wheat bran Wheat germ Wheat starch (This is not a complete list.)	This is an essential diet for individuals with gluten intolerance and celiac disease. The only way to manage celiac disease is through a gluten-free diet. Choosing healthy, whole, unprocessed foods can increase intake of high-fiber, nutrient dense, low calorie foods to promote weight loss and lower the risk of chronic diseases.	Many gluten-free products can be higher in fat, carbohydrates and/or calories and lower in fiber than their common grain alternatives. Gluten-free foods are often not fortified with nutrients such as B vitamins and iron. Therefore, without attention to nutrient intake, eating a strict GF diet can lead to micronutrient deficiencies.

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Gluten-free Diet	Plain fruits, vegetables, dairy products (milk, cheese, yogurt), eggs, meat, poultry, fish. Gluten free grains such as plain rice, quinoa, potatoes, corn, amaranth, sorghum, gluten-free oats and millet, among others. (This is not a complete list.)	The following foods and any foods containing these as ingredients: Wheat Rye Barley Barley Malt Bulgur Cereal binding Couscous Durum Einkorn Emmer Filler Faro Flour Graham flour Hydrolyzed vegetable protein Kamut Malt Modified starch Semolina Spelt Textured vegetable protein Triticale Wheat bran Wheat germ Wheat starch (This is not a complete list.)	This is an essential diet for individuals with gluten intolerance and celiac disease. The only way to manage celiac disease is through a gluten-free diet. Choosing healthy, whole, unprocessed foods can increase intake of high-fiber, nutrient dense, low calorie foods to promote weight loss and lower the risk of chronic diseases.	Many gluten-free products can be higher in fat, carbohydrates and/or calories and lower in fiber than their common grain alternatives. Gluten-free foods are often not fortified with nutrients such as B vitamins and iron. Therefore, without attention to nutrient intake, eating a strict GF diet can lead to micronutrient deficiencies.

Indian Health Service
National Pharmacy and Therapeutics Committee
Treatment of Opioid Dependence
NPTC Formulary Brief
May 2014

Background:

In May 2014, the IHS NPTC reviewed the treatment of opioid dependence. The discussion included a review of the history of opioid addiction and laws regarding treatment as well as a review of epidemiology of opioid use/abuse in the US. The FDA approved medications for treatment of opioid addiction were also reviewed, which include methadone, naltrexone and buprenorphine. This discussion did not lead to a formulary modification; however, it was felt that a formulary brief would be of benefit to IHS providers.

Discussion:

History of Opioid Addiction: Because of increasing opioid addiction and crime in the early 20th Century, the Harrison Narcotic Act of 1914 began regulating manufacturing, distribution and prescription of opioids. For those with addiction, federally appropriated treatment facilities were established but were not effective in treating addiction. Both law and medical associations began advocating for medication assisted treatment. In 1964, methadone was approved for treatment of opioid dependence. In 1974, the Narcotics Treatment Act recognized the importance of using an opioid to treat opioid dependence but limited methadone treatment to SAMHSA certified "outpatient treatment programs (OTP)". The certification process all but eliminated office based treatment of opioid dependence in the Agency. Naltrexone was approved for treatment of opioid dependence in 1984 but clinical effectiveness was poor in opioid dependence treatment. In the 1990s, the IOM and NIH released a consensus panel statement concluding that FDA regulations were inhibiting physicians' ability to treat addiction (i.e., methadone limited to OTPs) and called for reduction in unnecessary regulation of maintenance pharmacotherapy and expansion of availability. This led the way to the Drug Addiction Treatment Act of 2000 (DATA 2000) which expanded medication assisted opioid treatment to the office based setting using schedule III, IV, or V controlled substances. This was in anticipation of the FDA approval of buprenorphine in 2002 which was listed as a schedule III medication for the treatment of opioid dependence.

Prevalence of Opioid Use and Abuse in the US: There has been an increasing rate of drug overdose deaths in the United States, with a steep increase ever since 2000. Of these, opioids are involved in the most overdose deaths, more than cocaine and heroin combined. The number of ED visits involving use of legal drugs non-medically is similar to the number involving illegal drugs, and among the legal drugs, opioids are the most common, with oxycontin, hydrocodone, and oxycodone as the most common types of opioids.

Characteristics of the Ideal Medication for Treatment of Addiction: The ideal medication for treatment of addiction should relieve symptoms of withdrawal, have low abuse potential (low euphoric effects), low overdose potential, longer duration of action and longer onset of action, should not be able to be injected (utilize an abuse/tamper deterrent dosage form) and should allow return to a productive lifestyle.

FDA approved medications for the Treatment of Opioid Dependence: There are three main types of pharmacotherapy for opioid addiction: agonist (methadone), antagonist (naltrexone), and partial agonist (buprenorphine).

Methadone suppresses withdrawal and decreases cravings but is only dispensed in licensed treatment programs, which limits its availability. It has been demonstrated to decrease heroin use, increase employment, and reduce mortality and HIV transmission. In a 2003 Cochrane Review, those on methadone had higher retention in treatment and decreased heroin use compared to placebo.

Naltrexone has no abuse or overdose potential and dependence/tolerance do not develop, but there is limited usefulness because there is no agonist effect and patients continue to experience cravings, withdrawal and relapse. In a 2011 Cochrane

Review, there was no statistically significant difference between naltrexone and placebo in any primary outcome including retention in treatment, abstinence, or incarceration.

Buprenorphine has effects of a typical opioid agonist so it relieves withdrawal but it has lower overdose potential because it produces a ceiling effect. There is slow dissociation so it is longer acting and reduces magnitude of withdrawal. As an advantage over methadone, it is also available for use in an office base setting and patients can participate in treatment activities and maintain other activities of daily living. Buprenorphine can only be administered for opioid dependence by a licensed provider (a requirement of DATA 2000 as above). In a 2014 Cochrane Review, buprenorphine was statistically significantly superior to placebo in retention in treatment, and it was not inferior to medium dose methadone (40-85mg) in retaining patients in treatment and suppressing illicit opioid use. Buprenorphine/Naloxone was formulated to decrease IV abuse potential, as naloxone is a full opioid antagonist when injected. In a recent survey of Chief Pharmacists in the Agency, roughly 9% responded that buprenorphine is being utilized within their facility.

Findings:

- Opioid dependence is a prevalent and growing problem in the US
- Methadone is an effective medication to treat opioid dependence but can only be dispensed for this purpose in licensed treatment programs
- Buprenorphine (+/- Naloxone) is an effective medication to treat opioid dependence in the office setting but requires physicians to go through a certification program and obtain a special DEA license
- Naltrexone is not effective for treatment of opioid dependence
- Given the administrative and regulatory restrictions on prescribing methadone and buprenorphine for opioid dependence, the NPTC did not vote to add these agents to the National Core Formulary as not all facilities may have the administrative and clinical processes and systems in place to support their use. However, for programs that have qualified and trained providers in dispensing or prescribing these agents, they may be very appropriate for inclusion on local formularies to meet the needs of the patients. The NPTC identifies value in and supports the continued expanded treatment of opioid dependence into the mainstream of medical practice and the important positive public health impact it may have for our patients.

If you have any questions regarding this document, please contact the NPTC at *IHSNPTC1@ihs.gov*. For more information about the NPTC, please visit the NPTC website.

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Indian Health Service
National Pharmacy and Therapeutics Committee
Treatment of Opioid Overdose
NPTC Formulary Brief
May 2014

Background:

In May 2014, the IHS NPTC reviewed the treatment of opioid overdose. The discussion included a review of the epidemiology of opioid overdose, a summary of national initiatives to curb overdose deaths, and a discussion around take home naloxone. Given high numbers of opioid prescriptions and prevalence of overdose, along with the safety and efficacy of naloxone for opioid reversal, naloxone was added to the National Core Formulary.

Discussion:

Drug overdose deaths are the leading cause of injury death in the US in 2013, the majority of which were due to prescription drugs. Naloxone (a pure opioid antagonist) rapidly reverses effects of opioid overdose and was FDA approved in 1971 for this indication. Evzio® (commercially available naloxone auto-injector) was approved in April 2014 as the first drug-device designed to deliver naloxone outside of the healthcare setting by patient, family members, and other caregivers in case of an opioid overdose. It comes with a trainer device, provides verbal instructions on use and is administered IM or SQ.

Take home naloxone distribution programs have been initiated in 17 states and cities including New York City, Baltimore, Boston, San Francisco and Chicago. As of 2008: 21,000 persons were trained and there were 2,600 overdose reversals. Project Lazarus instituted a community-based overdose prevention program in rural North Carolina, where there were some of the highest overdose rates in the country. After initiation of this program, which included use of intranasal naloxone for opioid reversal, the overdose death rate dropped from 46.6 to 29.0 per 100,000 people in 2010.

Take home naloxone should only be issued with comprehensive training on safe administration and overdose management. It is not advised for self-administration and is only for use by witnesses or bystanders. Naloxone can be administered via intramuscular injection (prescribed with a needle) or intranasal route (prescribed with a mucosal atomizing device). Education around take home naloxone also advises on CPR techniques and emphasizes the importance of calling for an ambulance in all cases as soon as possible, even if naloxone has been administered. Naloxone distribution should be targeted to high risk times such as transitions from relative abstinence to greater access, like release from jail or prison to community settings. Naloxone should also be targeted to high risk populations, like patients with a history of prior overdose, injection drug use, or those that have difficulty accessing care (i.e. rural settings.) Those prescription opioid users on high doses, long acting opioids (i.e. methadone), on concurrent sedating medications, with concomitant alcohol use, liver or respiratory disease are also consider high risk and should be considered for take home naloxone.

Proponents of take home naloxone feel that it is effective in reducing heroin overdoses. It has a low risk of adverse events and is relatively inexpensive. Since most overdoses are witnessed, bystander intervention could be life-saving. There are also analogous existing prescriptions by PCPs which include epinephrine pens to be administered for anaphylaxis. Finally, proponents feel this would encourage physicians to discuss the risk of opioid overdose with their patients.

Opponents of take home naloxone feel that this can be interpreted as health professionals condoning injection drug use or that this may encourage heavy drug use. Naloxone is not effective for those that inject or overdose alone. Naloxone is not sufficient in all cases to resuscitate victims and some feel naloxone may delay calling for additional help. Despite the documented overdose reversals with naloxone, there has not been robust statistical evidence to support a decrease in overdose mortality.

Findings:

- Out of hospital use of naloxone appears to decrease opioid overdoses and mortality but more robust data is needed confirm efficacy
- Given high number of opioid prescriptions and prevalence of opioid overdose, along with safety and efficacy of naloxone for opioid reversal, naloxone was added to the National Core Formulary
- Use of Take Home Naloxone can be considered at IHS sites but a comprehensive training and education program should implemented

If you have any questions regarding this document, please contact the NPTC at *IHSNPTC1@ihs.gov*. For more information about the NPTC, please visit the NPTC website.

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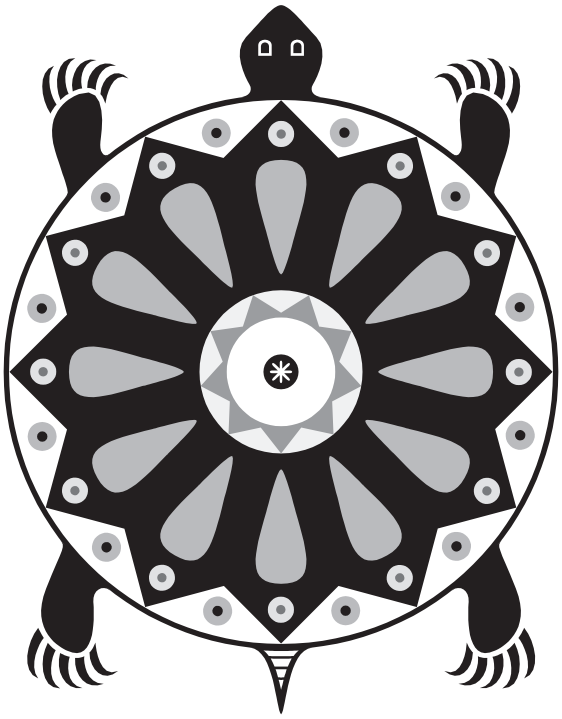

Letter to the Editor

Dear Editors:

We note with great interest the report "ACC/AHA Dyslipidemia Guideline Review" by Clark and Watts that appeared in the February 2014 issue of *The IHS Primary Care Provider* (39:1-4). This report presents conclusions and recommendations of the Indian Health Service's National Pharmacy and Therapeutics Committee (NPTC). While we support the effort to clarify the latest guidelines on lipid lowering therapy,[1] we are extremely concerned to note that the NPTC is endorsing the Pooled Cohort Equations for risk calculation of atherosclerotic cardiovascular disease (CVD) and stating that these equations "were deemed superior to other calculation methods including the Framingham and the Strong Heart calculators." The NPTC unfortunately presents no new data upon which their decision was reached. The working group that developed the Pooled Cohort Equations specifically called for validation studies before their equations could be confidently used in other ethnic groups. Not only were the Pooled Cohort Equations developed without data from American Indians, but the apparent inaccuracy of these equations has already been described in diverse populations,[2] and they have not been tested in American Indians.

The Strong Heart Study (SHS) remains the best source of long-term data on CVD events in a population-based sample of American Indians; its participants from 13 tribes/communities in three diverse geographic areas span a wide range of tribal backgrounds. In addition to establishing that the coefficients for the relationships of coronary heart disease (CHD) with low-density lipoprotein-cholesterol and blood pressure differed in American Indians, we found that a measure of renal disease, an important determinant of CVD among American Indians, greatly improved the predictive value for CHD risk.[3,4] The latter publication includes follow-up CVD mortality and morbidity surveillance data through 2008 and uses estimated glomerular filtration rate, now a standard laboratory measure for renal disease in Indian Health Service care.

The SHS investigators are currently performing an analysis that will evaluate the Pooled Cohort equations in American Indians and that will rigorously compare these equations against alternatives, using the same definition for atherosclerotic CVD that was used in the new guidelines. Until new data specific to American Indians are forthcoming, it would seem prudent that clinical evaluations of cardiovascular risk in American Indians should be based upon the SHS equations.

Sincerely,

The Strong Heart Study Steering Committee

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Response from the Author

In our formulary brief published in the February 2014 edition of *The IHS Primary Care Provider* (39:1-4), the IHS National Pharmacy and Therapeutics Committee (NPTC) summarized our review of the 2013 ACC/AHA Cholesterol Treatment Guideline.[1] The purpose of our publication was to provide concise guidance for practicing primary care physicians serving American Indian and Alaska Native communities regarding the recent substantive changes to lipid management recommendations for the primary and secondary prevention of atherosclerotic cardiovascular disease.

In an accompanying editorial in this issue of The IHS Primary Care Provider, the members of the Steering Committee of the Strong Heart Study (SHS) have expressed concern regarding the NPTC's decision to endorse the use of the Pooled Cohort Equations (PCE) risk calculator advocated by the American College of Cardiology and American Heart Association, particularly relative to other available calculators including the Strong Heart risk calculator. We would like to

address the basis for the NPTC decision.

The issue pertains to controversy over the use of the PCE risk calculator and its role in guiding use of statins in the primary prevention of atherosclerotic cardiovascular disease. As detailed in our February 2014 article, the controversy first referenced in an editorial by Dr. Paul Ridker and Nancy Cook of Harvard Medical School[2] relates to over-estimation of the cardiovascular risk when applied to certain contemporary cohorts. Furthermore, the authors of the ACC/AHA guideline pointed out that the cohort used for development of their risk calculator included Caucasian and African American study participants and thus may not be generalizable to other populations.

We take note of an analysis of heart disease trends and disparities from 1990 through 2009 recently published in the American Journal of Public Health.[3] This analysis confirmed both the higher rates of heart disease-related death in the IHS service population relative to Whites as well as the regional and age differences (with the highest disparities in younger age groups) in heart-disease related death across the IHS service population.

The ACC/AHA full panel report acknowledged a higher rate of atherosclerotic cardiovascular disease in American Indians and Alaska Natives compared to whites and recommended that "future trials should be powered for subgroup analysis by race and ethnicity."[1] Furthermore, it was the expert opinion of the ACC/AHA Risk Assessment Work Group that the "Pooled Cohort Equations may be considered when estimating risk in patients from populations other than African Americans and non-Hispanic Whites."

The NPTC reviewed the use of other available risk calculators, with particular interest paid to the Strong Heart risk calculator, originally published in 2006.[4] This tool was derived using longitudinal data from 1989 through 2001 from a cohort of 4549 American Indians of both genders, ages 45-74 years, and representative of southwestern Oklahoma, the Dakotas, and Arizona. The tool was updated with CVD morbidity and mortality data in the original cohort through December 31, 2007.[5]

In deliberating the potential utility of the various available risk calculators, the NPTC sought input from subject matter experts, including a full-time cardiologist who currently works with the IHS service population.

Several issues were raised relative to the risk calculator controversy. It was noted that the AHA and SHS risk calculators differ in age characteristics of the derivation cohort as well as cardiovascular disease definitions. It was the opinion of the subject matter experts that the older SHS cohort may not be fully representative of the contemporary IHS service population because of improvements in care and regional variations in cardiovascular risk and outcomes.

The NPTC thus deliberated risk calculators each felt to have limitations in generalizability to the current IHS service population. Also considered was the expert opinion of the ACC/AHA Panel regarding the higher prevalence of both cardiovascular disease and cardiovascular disease risk in the AI/AN service population and thus the potential for greater risk reduction and improved outcomes with the more aggressive primary prevention strategy. In the acknowledged absence of adequate scientific data relative to statin therapy for the primary prevention of atherosclerotic cardiovascular disease in the contemporary IHS service population, and based upon the expert opinion of IHS subject matter experts, the NPTC chose to endorse the AHA Pooled Cohort Equations.

The NPTC has great respect for the substantive and ongoing contributions of the Strong Heart Study to improving health in American Indian and Alaska Native communities. We look forward to publication of their analysis of the Pooled Cohort Equations in American Indians and their planned comparisons against alternative risk calculators.

Notwithstanding the various risk calculator controversies, the NPTC feels that the most important point to IHS practicing clinicians regards the potential for improving cardiovascular outcomes in our very high-risk service population. Based on our review of the ACC/AHA cholesterol guideline, it is desirable to undertake a more pro-active approach in the reduction of risk for atherosclerotic cardiovascular disease, including the use of appropriate intensity statin therapy for both primary and secondary prevention.

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MEETINGS OF INTEREST

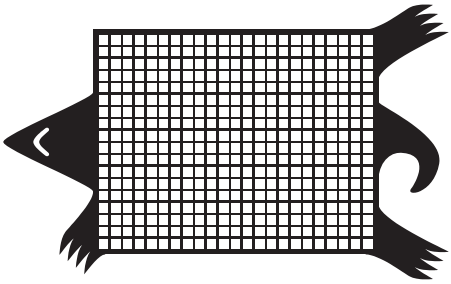
Advancements in Diabetes Seminars
Monthly; WebEx

Join us monthly for a series of one-hour WebEx seminars for health care program professionals who work with patients who have diabetes or are at risk for diabetes. Presented by experts in the field, these seminars will discuss what's new, update your knowledge and skills, and describe practical tools you can use to improve the care for people with diabetes. No registration is necessary. The accredited sponsors are the IHS Clinical Support Center and IHS Nutrition and Dietetics Training Program.

For information on upcoming seminars and/or previous seminars, including the recordings and handouts, click on this link and see Diabetes Seminar Resources: *http://www.diabetes.ihs.gov/index.cfm?module=trainingSeminars*

Available EHR Courses

EHR is the Indian Health Service's Electronic Health Record software that is based on the Resource and Patient Management System (RPMS) clinical information system. For more information about any of these courses described below, please visit the EHR website at *http://www.ihs.gov/CIO/EHR/index.cfm?module=rpms_ehr_training*. To see registration information for any of these courses, go to *http://www.ihs.gov/Cio/RPMS/index.cfm?module=Training&option=index*.



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POSITION VACANCIES

Editor's note: As a service to our readers, The IHS Provider *will publish notices of clinical positions available. Indian health program employers should send brief announcements as attachments by e-mail to* the.provider@ihs.gov. *Please include an e-mail address in the item so that there is a contact for the announcement. If there is more than one position, please combine them into one announcement per location. Submissions will be run for four months and then will be dropped, without notification,, but may be renewed as many times as necessary. Tribal organizations that have taken their tribal "shares" of the CSC budget will need to reimburse CSC for the expense of this service ($100 for four months). The Indian Health Service assumes no responsibility for the accuracy of the information in such announcements.*

Psychiatrist
Zuni Comprehensive Community Health Center; Zuni, New Mexico

The Zuni Comprehensive Community Health Center (Indian Health Service) has an opening for a full-time psychiatrist to see adults and children. We do psychotherapy, crisis work, trauma work, as well as work with families, couples, and groups. You will have the opportunity to impact and design mental health for the community as a whole. We are shielded from managed care. You have an opportunity to provide psychotherapy to your patients and families without worrying about insurance approvals. You are not merely hired as a prescriber, but as a biopsychosocial psychiatrist. In this job, you have a chance to feel good about the care you are providing, in a setting that is personally and professionally stimulating, and in a place where your skills are needed and valued. Additional advantages include market pay, no call, and excellent federal benefits.

We are located on the Zuni reservation. The Zuni Pueblo is one of the oldest continuously inhabited Native American villages in the US, estimated to be at least 800-900 years old. The Zuni are located on their ancestral lands and have one of the most intact Native American cultures in the country. Zuni tradition and the Zuni language are a living and vibrant part of daily life in the community. Zuni is nestled amongst beautiful redrock mesas and canyons. It is considered high desert at 6000 - 7000 feet and is located in the northwestern region of New Mexico, along the Arizona border.

For more information or to apply, contact Michelle Sanchez, Zuni Service Unit Behavioral Health; telephone (505) 782-7312; e-mail *michelle.sanchez2@ihs.gov*.

Staff Clinician
Department of Health and Human Services, National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Division of Intramural Research
Phoenix, Arizona

The Diabetes Epidemiology and Clinical Research Section (DECRS), Phoenix Epidemiology and Clinical Research Branch (PECRB), National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) conducts research in the epidemiology and prevention of type 2 diabetes, its complications, and related conditions, primarily among American Indians in the southwestern United States. The section is recruiting a staff clinician to take part in clinical research activities. The position is located in Phoenix, Arizona on the campus of the Phoenix Indian Medical Center.

The staff clinician will work in an interdisciplinary, collaborative environment and have the following responsibilities: a) medical director of the DECRS research clinics, supervising nurse practitioners and medical assistants, and overseeing clinic schedules and operations; b) principal or associate investigator of randomized clinical trials in prevention of diabetes or its complications; c) principal or associate investigator of epidemiologic investigations of type 2 diabetes and related conditions; and d) associate investigator in a randomized clinical trial of optimizing weight gain in pregnancy and effects on the mother and child. There are outstanding opportunities to collaborate with experts in epidemiology, clinical research, physiology, genetics, and biostatistics. Ample clinical, laboratory, and computing resources are available.

The position requires licensure to practice medicine in one of the United States or D.C. and board eligibility or certification, preferably in internal medicine, pediatrics, family practice, or preventive medicine. Clinical or epidemiological research training and experience are desirable. Salary and benefits will be commensurate with experience and qualifications. Outside candidates and current federal employees (civilian or commissioned corps) are encouraged to apply.

Interested candidates may contact William C. Knowler, MD, DrPH, Chief, DECRS, c/o Ms. Charlene Gishie. To apply, please send a cover letter; CV with publications list; and names and contacts of three references to Ms. Charlene Gishie, National Institutes of Health, 1550 E. Indian School Rd, Phoenix, AZ 85014; e-mail *charlene.gishie@nih.gov*. The deadline to submit an application is March 7, 2014.

NIDDK is a component of the National Institutes of Health (NIH) and the Department of Health and Human

Services (DHHS). All positions are subject to a background investigation. DHHS and NIH are Equal Opportunity Employers.

Family Practice Physicians (2)
Cass Lake IHS Hospital; Cass Lake, Minnesota

Leech Lake Reservation is an open reservation located in Minnesota's Northwoods region. Towering pines fringe many of the lakes found within its boundaries. Wild rice beds, deep forests, and shimmering lakes, two of which are among the largest in the state, abound. There are approximately 1,050 square miles within the reservation, nearly all of which is within the boundaries of the Chippewa National Forest.

When you locate here, you are looking for a quality of life for both your workers and your family. That is why it will be worth your while to find out how much Leech Lake can offer with its natural beauty, friendly communities, good schools, and various civic, cultural, and historical organizations. The area also provides many quality outdoor recreational activities, from fishing and boating in the summer to nordic and alpine skiing in the winter. Though Leech Lake's natural beauty, civic attractions, and recreational activities are things to behold, they pale in comparison to the friendliness of the people of the Leech Lake area.

The population within the reservation boundaries is estimated at 91,800. Nearly fifty-eight percent are between the ages of 16 and 65. The resident American Indian population on the reservation has been estimated at 7,763 by the census. Most of the population is concentrated in eight communities dispersed across the reservation. Adjacent to the reservation, there are three major area economic centers: Bemidji, which is 13 miles to the west of Cass Lake; Grand Rapids, which lays 54 miles to the east of Cass Lake; and Walker, roughly 23 miles to the south of Cass Lake.

The Cass Lake Indian Hospital is owned and operated by the Federal Government as a Public Health Service, Indian Health Service Facility. We have a staff of 120 employees, six of whom are physicians and five nurse practitioners; there is a contracted emergency department service. Additional services include ambulatory clinic, dental, optometry, audiology, laboratory, radiology, physical therapy, and diabetes clinic. Our Facility has 13 beds; we had 223 discharges and 1,398 patient days in FY '05. According to the most recent data, we have 99,503 outpatient visits annually, 5,612 Dental visits, and 2,763 Optometry visits; there are 20,512 registered patients. The Leech Lake Tribe operates mental health, substance abuse, podiatry, and diabetes clinics, as well as seven other clinics staffed by various professionals.

For additional information, contact Antonio Gruimaraes, MD, Clinical Director (family medicine at telephone (218) 335-3200; e-mail antonio.guimaraes@ihs.gov, or Tony Buckanaga, Physician Recruiter, at telephone (218) 444-0486; e-mail *tony.buckanaga@ihs.gov*.

Family Practice Physician
Pharmacist
Laboratory Supervisor
EMT Basic/Intermediate
First Responder
Environment Health Assistant
Master Social Worker
Alamo Navajo School Board, Inc.; Alamo, New Mexico

Alamo Navajo School Board, Inc., Health Division is seeking health care practitioners to come work with their dedicated staff on the Alamo Navajo Reservation. Our clinic is located 140 miles southwest of Albuquerque and sixty miles west of Socorro. We have a multiservice community health center that include medical, dental, onsite pharmacy and lab, optometry, mental health, emergency medical, aftercare, and community health education services. One focus is on diabetes awareness and prevention of the disease, which affects one in every five people in Alamo. In support of the effort, the Health Division in collaboration with the Board and Administration constructed a community wellness center. The facility has a full-size gymnasium, aerobic and weight room, classrooms, kitchen, game room, day care, and an outdoor fitness path.

Alamo Navajo School Board, Inc., provides a highly negotiable and competitive salary; signing bonus; student loan assistance; housing; and an excellent benefits package that consist of a group health insurance/life insurance at no cost for employees and shared cost for dependents; 403(b) Retirement Plan and 457(b) Deferred Contribution Plan; Relocation reimbursement; 13 major holidays off; personal leave; and community wellness center access. Hiring preference will be given to Navajo and Indian Preference. For more information, please contact Hotona Secatero, Director of Personnel, at (575) 854-2543 extension 1309; or e-mail *hsecatero@ansbi.org*.

Clinical Director
Family Medicine Physician
Kodiak Area Native Association; Kodiak, Alaska

The Kodiak Area Native Association (KANA) is searching for an adventurous, highly motivated physician to lead our team that is committed to patient centered care, customer service, quality improvement, and stewardship. KANA is celebrating its 48th year of providing patient and family focused health care and social services to Alaska Natives and other beneficiaries of KANA throughout Kodiak Island. KANA's award winning medical staff is comprised of four physicians who work in conjunction with two midlevel providers, dedicated nurse case managers, and ancillary staff to deliver the highest quality, team-based health care to an active user population of 2,800 patients. Integrated behavioral health and pharmacy services within the primary care setting also facilitate an advanced support system to ensure our patients' needs are met.

The spectacular scenic beauty of Kodiak Island offers a backdrop for an abundance of outdoor and family activities, including world-class fishing, hunting, wildlife viewing, kayaking, and hiking just minutes from your door. Its sometimes harsh climate is balanced by mild temperatures and unparalleled wilderness splendor that provide Kodiak's residents with a unique lifestyle in a relaxed island paradise.

KANA offers competitive compensation and an excellent employee benefits package, including medical, dental, vision, flexible spending accounts, short term disability insurance, life insurance, accidental death and dismemberment insurance, 401k with employer contribution, fitness membership, and paid time off.

If you're interested in hearing more about how you can start your journey to an adventure of a lifetime, please visit our website at *www.kanaweb.org*, give Lindsey Howell, Human Resources Manager, a call at (907) 486-9880, or contact our HR Department at *hr@kanaweb.org*. Alaska's Emerald Isle awaits you!

Clinical Director
Family Practice Physician (2)
Physician Assistant
Family Nurse Practitioner
Clinical Nurse
Tohatchi Health Center; Tohatchi, New Mexico

Tohatchi Health Center is the quality innovation and learning network (QILN) site for Gallup Service Unit. We are located approximately 30 miles north of Gallup, New Mexico, nestled against the Chuska Mountains. Ambulatory services include family medicine, internal medicine, obstetrics and gynecology, optometry, dental, pharmacy (including anticoagulation clinic), podiatry, physical therapy, social services, public health nursing, laboratory, limited radiology, and support services. Our facility provides health care Monday through Friday, 8:00 am to 4:30 pm. Our focus is building our medical home and supporting a patient centered health care system with the patients and communities we serve.

For more information, you can contact CDR Pamela Smiley, RN-SCN, Acting Health Systems Administrator at (505) 733-8100 or e-mail at *pamela.smiley@ihs.gov*.

Primary Care Providers
Koosharem Community Health Center; Richfield, Utah
Kanosh Community Health Center; Kanosh, Utah

The Paiute Indian Tribe of Utah (PITU) has job openings for full-time mid-level practitioners at each location. The tribe operates health clinics in four communities, two of which are newly funded Community Health Centers in Richfield and Kanosh, Utah. Our outreach area encompasses 15 cities in Millard and Sevier Counties with an approximate service population of 25,311. Our goal is to provide excellent health care and services to those with economic, geographic, cultural, and language barriers. Clinical services include family medicine, prenatal and women's health care, dental, optometry, nutrition and dietetics education, and social service programs.

Richfield is located in west central Utah and lies in a valley surrounded by beautiful red rock mountains. Richfield is part of Panoramaland, and is a popular thoroughfare to several nearby national parks and forests. Kanosh is a small farming town located in Millard County; it was named in honor of the Paiute Indian Chief Kanosh. These areas have long been known for their outdoor recreational opportunities, such as hiking, fishing and hunting, mountain biking, and all-terrain vehicle events.

We offer an excellent benefits package that consists of a competitive annual salary, no cost health/dental/life insurance for the entire family, a 401(k) retirement plan with tribal match, 14½ paid holidays, annual (vacation) and sick leave accruals that roll over year to year, ability to earn compensatory time for time over 40 hours weekly, plus eligibility for NHSC or IHS loan repayment.

Interested candidates should submit a PITU application; CV/resume; and copies of medical license, driver's license, highest level of education achieved, and CIB (if applicable) to Paiute Indian Tribe of Utah, Attention: Kim Kelsey, 440 N. Paiute Dr., Cedar City, UT 84721. Job posting closes January 17, 2014, although the position will be remain open until filled. Visit *www.utahpaiutes.org* to download application; call (435) 586-1112, ext. 110; or e-mail *kim.kelsey@ihs.gov* with questions or for more information.

Primary Care (Internal Medicine or Family Practice) Physicians
Phoenix Indian Medical Center; Phoenix, Arizona

The Departments of Family and Internal Medicine at the Phoenix Indian Medical Center have openings for board certified/eligible outpatient family and internal medicine physicians. Our adult primary care services are provided by eleven family physicians, six internists, and two midlevel providers. Our physicians work in multidisciplinary health care teams with the active participation of nurse care coordinators, nutritionists, pharmacists, nurses, clerks, and other staff, all of whom work together to provide a medical home for patients with chronic illnesses. We have an advanced access appointment system and have been using the Electronic Health Record for over six years. Full time 8 and 10 hour per day schedule options are available. Competitive federal salaries and benefits are available, and Commissioned Officer applicants are also welcome. Job applications should be made online at USAJOBS.gov. For more information, please contact Dr. Eric Ossowski, Family Medicine, or Dr. Dorothy Sanderson, Internal Medicine at *dorothy.sanderson@ihs.gov*; telephone (602) 263-1537.

Hospitalist (Family Practice or Internal Medicine) Physicians
Phoenix Indian Medical Center; Phoenix, Arizona

The Phoenix Indian Medical Center (PIMC) is actively seeking board certified/eligible family medicine or internal medicine physicians to staff its inpatient unit. PIMC is an inpatient and outpatient facility located in downtown Phoenix that provides medical care to patients from over 40 tribes. Hospitalists typically round/admit/consult on 8 to 12 patients per shift. Typical admitting diagnoses include diabetic ketoacidosis, hepatic encephalopathy, pneumonia, asthma, pyelonephritis, and cellulitis. Specialty services available to provide consultation on the inpatient service include surgery/wound care, ENT, obstetrics and gynecology, rheumatology, infectious diseases, nephrology, orthopaedics, podiatry, and dermatology. Competitive federal salary and benefits are available, and Commissioned Officers are also welcome to apply. Interested physicians should contact Dr. Dorothy Sanderson at *dorothy.sanderson@ihs.gov*, or telephone (602) 263-1537, ext. 1155.

Family Physician with Obstetrical Skills
Ethel Lund Medical Center; Juneau, Alaska

The SEARHC Ethel Lund Medical Center, Juneau, Alaska is searching for a full-time family physician with OB to join a great medical staff of 14 providers at a unique clinic and hospital setting. Have the best of both worlds by joining our practice where we share hospitalist duties and spend our remaining time in an outpatient clinic with great staff and excellent quality of life. We have the opportunity to practice full spectrum family medicine with easy access to consultants when we need them. Maintain all your skills learned in residency and expand them further with support from our tertiary care center, Alaska Native Medical Center.

Clinic is focused on Patient Centered Medical Homes, quality improvement with staff development from IHI, and using the Indian Health Service HER. Frequent CME and opportunities for growth: teaching students & residents and faculty status at University of Washington available to qualified staff. Loan repayment site for Indian Health Service and National Health Service Corps and State of Alaska SHARP program.

Work in Southeast Alaska with access to amazing winter and summer recreational activities. Live in the state capital with access to theater, concerts, annual musical festivals and quick travel to other communities by ferry or plane. Consider joining a well rounded medical staff of 14 providers at a beautiful clinic with excellent benefits. For more information contact, Dr. Cate Buley, Assistant Medical Director, Ethel Lund Medical Center, Juneau, Alaska 1-907-364-4485; email *cbuley@searhc.org*. Position open March 2014. Look us up online at *www.searhc.org* job vacancies.

Family Medicine Physician
Internal Medicine Physician
Emergency Medicine Physician
Sells Service Unit; Sells, Arizona

The Sells Service Unit (SSU) in southern Arizona is recruiting for board certified/board eligible emergency room physician, family/internal medicine physician, and physician assistants to join our experienced medical staff. The Sells Service Unit is the primary source of health care for approximately 24,000 people of the Tohono O'odham Nation. The service unit consists of a Joint Commission accredited 34-bed hospital in Sells, Arizona and three health centers: San Xavier Health Center, located in Tucson, Arizona, the Santa Rosa Health Center, located in Santa Rosa, Arizona, and the San Simon Health Center located in San Simon, Arizona with a combined caseload of approximately 100,000 outpatient visits annually. Clinical services include family medicine, pediatrics, internal medicine, prenatal and women's health care, dental, optometry, ophthalmology, podiatry, physical therapy, nutrition and dietetics, social work services, and diabetes self-management education.

Sixty miles east of the Sells Hospital by paved highway lies Tucson, Arizona's second largest metropolitan area, and home to nearly 750,000. Tucson, or "The Old Pueblo," is one of the oldest continuously inhabited sites in North America, steeped in a rich heritage of Indian and Spanish influence. It affords all of southern Arizona's limitless entertainment, recreation, shopping, and cultural opportunities. The area is a favored tourist and retirement center, boasting sunbelt attributes and low humidity, with effortless access to Old Mexico, pine forests, snow sports, and endless sightseeing opportunities . . . all within a setting of natural splendor.

We offer competitive salary, relocation/recruitment/retention allowance, federal employment benefits package, CME leave and allowance, and loan repayment. For more information, please contact Peter Ziegler, MD, SSU Clinical Director at (520) 295-2481 or by e-mail at *peter.ziegler@ihs.gov*.

Mid-Level Practitioner
Health Director
Quileute Tribe; La Push, Washington

The Quileute Tribe has a job opening for a full-time mid-level practitioner. Must be a certified physician assistant, licensed in the state of Washington, and must have a valid Washington driver's license. Submit your application, professional license, cover letter, resume and three references by August 16, 2013, although the position will be open until filled.

We are also looking for a health director, who will provide administrative direction, negotiate and administer IHS contracts, develop and administer budgets, write reports, insure

HIPPA compliance, comply with ACA, manage EHR, evaluate staff, and insure third party reimbursements are done. Must have a bachelor's degree related to health administration, and two years of management experience. This position is open until filled.

Telephone (360) 374-4366 or visit our website at *www.quileutenation.org* for a job application and job description. Alternatively, you may contact Roseann Fonzi, Personnel Director, PO Box 279, 71 Main Street, La Push, Washington 98350; telephone (360) 374-4367; fax (360) 374-4368; or e-mail *roseann.fonzi@quileutenation.org*.

Pediatrician
Gallup Indian Medical Center;
Gallup, New Mexico

The Gallup Indian Medical Center is in northwest New Mexico, on the edge of the Navajo Reservation, about 140 miles west of Albuquerque. The Department of Pediatrics has immediate openings for board-certified/eligible pediatricians. Our current seven (7) pediatricians divide their time between outpatient and inpatient, offering comprehensive medical care to children, birth through age 18 years. We provide well-child and preventive care for children with chronic diseases (including asthma and obesity), provide some walk-in care for acute conditions, admit patients to our Pediatric Inpatient Unit, attend high-risk deliveries, and occasionally stabilize certain ill newborns and children for transfer to higher level of care in cooperation with our Women's Health Unit and Emergency Department. We enjoy the services of a dedicated pediatric nurse case manager to assist in referrals. Children in need of pediatric subspecialty care are referred to centers in Albuquerque or Phoenix. Other services represented include Emergency Medicine, Internal and Family Medicine, OB-GYN (with midwifery), General Surgery, Orthopedics, Podiatry, Diabetes Specialist, Optometry and Ophthalmology, Dental, Physical Therapy, Occupational Therapy, and Speech & Language Therapy, as well as comprehensive laboratory and radiology services on-site. Job applications should be made on-line at USA Jobs. For more information, please contact Dr. John Ratmeyer by e-mail at *john.ratmeyer@ihs.gov* or by telephone at 505-722-1000 (page).

Family Practice Physician
Hopi Health Care Center
Polacca, Arizona

The Hopi Health Care Center currently has openings for family practice physicians and family nurse practitioner or physician assistants. The Hopi Health Care Center is a small rural IHS hospital providing full spectrum family practice medical services including ambulatory care, adult/peds inpatient care and low risk obstetrics, and ER care. We currently staff for 12 full time physicians, and 5 full time FNP/PA positions. Our facility is located in northern Arizona, 90 miles NE of Flagstaff and 70 miles N of Winslow, on the Hopi Indian Reservation. Services are provided to both Hopi and Navajo reservation communities. The reservation is located in the heart of the Southwest and within a 90 mile radius to abundant mountain areas, lakes, forests, and archeological sites. The Hopi Health Care Center is a new facility established in 2000 with a full ambulatory care center environment including a dental clinic, physical therapy, optometry, and behavioral health services. We are a designated NHSC site, and qualify for the IHS Loan Repayment Program.

For more information please contact Jon Stucki, MD at (928) 737-6147 or *jon.stucki@ihs.gov*. Additionally, you may contact Darren Vicenti, MD, Clinical Director at (928)737-6141 or *Darren.Vicenti@ihs.gov*. CVs can be faxed to (928)737-6001.

THE IHS PRIMARY CARE PROVIDER

A journal for health professionals working with American Indians and Alaska Natives

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