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First Evidence-Based Criteria for Diagnosis of Gestational Diabetes

Neil Murphy, MD, Southcentral Foundation and Alaska Native Medical Center, Anchorage, Alaska

In March 2010 the International Association of Diabetes and Pregnancy Study Groups (IADPSG) published the first evidence-based criteria for diagnosis of gestational diabetes (GDM). All prior diagnostic criteria for GDM were based on consensus derived from post hoc analysis of observational data.

Background

The Criteria Issue

The classic O'Sullivan criteria were based on blood glucose values from an index pregnancy among women who subsequently developed diabetes later in life. The glucose testing method at that time was the Somogyi-Nelson method, which utilized whole blood. In addition to glucose, the Somogyi-Nelson also measured reducing sugars in the blood. The O'Sullivan criteria were later refined by Carpenter and Coustan to reflect the current use of enzymatic methods, which measured glucose alone.

Hence the two main criteria used in North America are based on women who subsequently developed glucose intolerance later in life, and the current O'Sullivan-based criteria do not screen for either obstetric or neonatal outcomes.

Does treatment of GDM actually improve clinical outcomes?

From Dr. O'Sullivan's work in the 1960s until quite recently, there were not randomized clinical trial (RCT) data that showed that treatment of GDM improved obstetric or neonatal outcomes. In 2005, Crowther et al reported an RCT that showed that treatment of gestational diabetes reduces serious perinatal morbidity and may also improve the woman's health-related quality of life (*NEJM* 2005).

In 2009, Landon et al reported an RCT that showed that although treatment of mild gestational diabetes mellitus did not significantly reduce the frequency of a composite outcome that included stillbirth or perinatal death and several neonatal complications, it did reduce the risks of fetal overgrowth, shoulder dystocia, cesarean delivery, and hypertensive disorders (*NEJM* 2009).

The IADPSG reviewed data from a large multicenter, multinational, randomized controlled trial, the Hyperglycemia and Adverse Pregnancy Outcome (HAPO) study (*NEJM* 2008). The HAPO study reported on a heterogeneous, multicultural, ethnically diverse cohort of about 25,000 pregnant women in the third trimester.

Although not directly comparable, the IADPSG felt that the Crowther and Landon data were highly complementary to the HAPO data.

New IADPSG Recommendations

The IADPSG consensus group made the following recommendations:

1. Rule out overt diabetes at the initial prenatal visit
2. Perform a one-step diagnostic test on all pregnant patients at 24 - 28 weeks who were not previously know to have diabetes and who do not currently manifest GDM.

The criteria for the initial screen to rule out diabetes are based on currently existing American Diabetes Association (ADA) diagnostic criteria (Table 1).

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Table 1. Threshold values for diagnosis of overt diabetes in pregnancy

Measure of glycemia	Consensus threshold
FPG	≥ 126 mg/dl
A_1C	≥ 6.5%
Random plasma glucose	≥ 200 mg/dl + confirmation

One of these must be met to identify the patient as having overt diabetes in pregnancy. If a random plasma glucose is the initial measure, the tentative diagnosis of overt diabetes in pregnancy should be confirmed by FPG or A_1C using a DCCT/UKPDS-standardized assay. A standardized Hgb A_1C assay should be used (see References below).

The third trimester GDM criteria in Table 2 are based on HAPO study data.

Table 2. Threshold values for diagnosis of gestational diabetes mellitus

Glucose measure	mg/dl
FPG	> 92
1-h plasma glucose	> 180
2-h plasma glucose	> 153

One or more of these values from a 75-g OGTT must be equaled or exceeded for the diagnosis of GDM.

Practice Strategies

Initial screen to rule out overt diabetes

In Indian Country this initial screen should be performed on *all* pregnant patients, if the initial visit occurs prior to 24 weeks. Logistically this can involve just adding a random glucose and an A_1C to the existing prenatal lab panel performed at the facility.

It is desirable to detect overt diabetes in pregnancy as early as possible to provide an opportunity to optimize pregnancy outcome. However, there is variability in time of enrollment for prenatal care beyond the control of health care providers. Accordingly, no limit is placed on the timing of initial assessment for detection of overt diabetes in pregnancy. However, if enrollment is at 24 weeks' gestation or later and overt diabetes is not found, the initial test should be followed by a 75-g OGTT.

Management of initial screen to rule out overt diabetes

If the patient meets the criteria in Table 1 at her initial visit, then the patient should receive nutritional counseling from a dietary professional and exercise counseling for preexisting diabetes. The patient should begin finger stick capillary glucose monitoring in a fasting state and after each meal and follow-up with a health care provider with a log of her capillary glucose results. Her treatment and follow-up should be that currently recommended for preexisting diabetes.

If the patient does not meet the criteria in Table 1 and her fasting plasma glucose > 92 mg/dl but <126 mg/dl, then diagnose as GDM. The patient should receive nutritional counseling from a dietary professional and exercise counseling for GDM. The patient should begin finger stick capillary glucose monitoring in a fasting state and after each meal and follow-up with a health care provider with a log of her capillary glucose results. Treatment and follow-up as for GDM.

If the patient does not meet the criteria in Table 1 and her fasting plasma glucose < 92 mg/dl, then test for GDM from 24 to 28 weeks' gestation with a 75-g OGTT.

Testing 24 weeks and after

After 24 weeks test all Native American women not previously diagnosed with overt diabetes or GDM in this pregnancy with a 2-hour 75-gram oral glucose tolerance test (OGTT)

24 - 28 weeks' gestation: diagnosis of GDM
2-h 75-g OGTT: perform after overnight fast on all women not previously found to have overt diabetes or GDM during testing earlier in this pregnancy
Overt diabetes: if fasting plasma glucose >126 mg/dl
GDM: if one or more values equals or exceeds thresholds indicated in Table 2
Normal: if all values on OGTT less than thresholds indicated in Table 2

Management after 24 weeks

If the patient meets the criteria in Table 1, then the patient should receive nutritional counseling from a dietary professional and exercise counseling for preexisting diabetes. The patient should begin finger stick capillary glucose monitoring in a fasting state and after each meal, and follow-up with a health care provider with a log of her capillary glucose results. Treatment and follow-up as for preexisting diabetes.

If the patient meets the criteria in Table 2, then the patient should receive nutritional counseling from a dietary professional and exercise counseling for GDM. The patient should begin finger stick capillary glucose monitoring in a fasting state and after each meal and follow-up with a health care provider with a log of her capillary glucose results. Treatment and follow-up as for GDM.

Indeterminate results of initial testing

It was recognized that any assessment of glycemia in early pregnancy would also result in detection of milder degrees of hyperglycemia short of overt diabetes. Recently, it was reported that higher first-trimester FPG levels (lower than those diagnostic of diabetes) are associated with increased risks of subsequent diagnosis of GDM, and adverse pregnancy outcomes.

However, there have *not* been sufficient studies performed to know whether there is benefit of generalized testing to diagnose and treat GDM before the usual window of 24 - 28 weeks' gestation. Therefore, the IADPSG Consensus Panel does *not* recommend routinely performing OGTTs before 24 - 28 weeks' gestation. It is recommended that an FPG value in early pregnancy > 92 mg/dl but <126 mg/dl be classified as GDM.

Postpartum

At six weeks postpartum, all GDM patients should be testing for diabetes outside of pregnancy as per the ADA recommendations in Table 3. The exception is the A_1C, which may still be affected by the physiologic changes of pregnancy; hence the A_1C should only be used after 12 weeks postpartum for a new diagnosis of diabetes outside of pregnancy.

ACOG Committee Opinion Number 435, "Postpartum Screening for Abnormal Glucose Tolerance in Women Who Had Gestational Diabetes Mellitus," notes that the American Diabetes Association recommends repeat testing at least *every 3 years* for women who had a pregnancy affected by GDM and normal results of postpartum screening. For women who may have subsequent pregnancies, screening more frequently has the advantage of detecting abnormal glucose metabolism before pregnancy and provides an opportunity to ensure preconception glucose control. Women should be encouraged to discuss their GDM history and need for screening with all of their health care providers.

Diagnosis and Classification of Diabetes Mellitus after pregnancy

Table 3. Criteria for the diagnosis of diabetes

1. A_1C ≥6.5%. The test should be performed in a laboratory using a method that is NGSP certified and standardized to the DCCT assay.*
OR
2. FPG ≥126 mg/dl. Fasting is defined as no caloric intake for at least 8 h.*
OR
3. 2-h plasma glucose ≥200 mg/dl during an OGTT. The test should be performed as described by the World Health Organization, using a glucose load containing the equivalent of 75 g anhydrous glucose dissolved in water.*
OR
4. In a patient with classic symptoms of hyperglycemia or hyperglycemic crisis, a random plasma glucose ≥200 mg/dl.

*In the absence of unequivocal hyperglycemia, criteria 1 - 3 should be confirmed by repeat testing.

Postpartum categories of "increased risk of diabetes" outside of pregnancy

The following categories of "increased risk of diabetes" in Table 4 should only be applied outside of pregnancy, i.e., not applicable during pregnancy.

Table 4. Categories of increased risk for diabetes

FPG: 100 mg/dl to 125 mg/dl: Impaired fasting glucose (IFG)
2-h PG in the 75-g OGTT: 140 mg/dl to 199 mg/dl: Impaired glucose tolerance (IGT)
A_1C 5.7 - 6.4% (Using a standardized A_1C assay (see References below))

Postpartum "increased risk of diabetes" Management

Individuals with pre-diabetes or increased risk for diabetes should be informed of their increased risk for diabetes as well as cardiovascular disease, and counseled about effective strategies, such as weight loss and physical activity, to lower their risks. As with glucose measurements, the continuum of risk is curvilinear, so that as A_1C rises, the risk of diabetes rises disproportionately. Accordingly, interventions should be most intensive and follow-up should be particularly vigilant for those considered to be at high risk and who carry other risk factors, such as obesity and family history.

Discussion

The new GDM criteria derived from the HAPO study represent the first GDM criteria based on randomized controlled data. Although not directly comparable, the IADPSG felt that the HAPO data were highly complementary to two other RCTs from Crowther and Landon that showed the treatment of mild GDM improved obstetric and neonatal outcomes.

It is felt that use of the IADPSG criteria will increase the number of pregnant patients who are treated for GDM to approximately 17%, depending the local prevalence of obesity and glucose intolerance. This will increase use of existing dietician and clinical resources.

On the other hand, one could argue that the use of diagnostic criteria for GDM based on consensus derived from post hoc analysis of observational data, when RCT data are available, is not a position defensible by the tenets of evidence-based practice. In addition, as the obesity and

diabetes epidemic continues to roll through Indian Country, perhaps this change may be one way those of us caring for American Indian and Alaska Native women can impact the course of that epidemic.

As of August 2010, the Alaska Area revised its Area-wide Diabetes in Pregnancy Guidelines to incorporate the IADPSG criteria. Other Indian health Areas are encouraged to review the HAPO data and make similar changes. A link to the 2010 Alaska Area revised Diabetes in Pregnancy Guidelines on the Indian Health Service MCH website is presented in the References below.

Summary

This nexus of comparable RCT data represents an opportunity for Indian Country to re-evaluate its glucose intolerance screening in pregnancy programs. While it may take many years for our national professional organizations to review the HAPO data and IADPSG recommendations and make national recommendations, it seems prudent for each individual IHS Area and/or facility to review their screening and diagnostic methods and make appropriate changes at this time.

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Alaska Area 2010 revised Diabetes in Pregnancy Guidelines
http://www.ihs.gov/MedicalPrograms/MCH/W/documents/DMPreg.doc

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American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes Care*. 2010 Jan;33 Suppl 1:S62-9.

National Glycohemoglobin Standardization Program certified methods for A1c testing*
This website has a list of currently certified methods. *http://www.ngsp.org/prog/index3.html*

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When using the A_1C for diagnosis, it is important to know that 2010 ADA Clinical Practice recommendations specify that the ". . . diagnostic test should be performed using a method that is certified by the National Glycohemoglobin Standardization Program (NGSP) and standardized or traceable to the Diabetes Control and Complications Trial reference assay." Point-of-care A_1C assays are not sufficiently accurate at this time to use for diagnostic purposes. The Indian Health Service national Diabetes Program is developing a guideline to address this issue.

CCC Editorial Comment
Jean Howe, MD, MPH

The care of pregnant women with diabetes and gestational diabetes is an increasing part of the workload of maternity care providers. Having evidence-based guidance for the diagnosis and management of diabetes in pregnancy is essential to our success in these efforts. The HAPO study provides such information for the diagnosis of gestational diabetes. The IADPSG recommendations incorporate this research into screening strategies and also reflect the current standards for diagnosis of overt diabetes. The work of Crowther and Landon show that glucose control in pregnancy matters. Our challenge is to integrate this new information into our day-to-day practice. It is great to see Alaska Area lead the way in this.

Because of the high rates of diabetes in American Indian and Alaska Native populations, most sites providing care to AI/AN women already screen early in pregnancy. The most common current practice is to use a 1-hour glucola and proceed to the 3-hour glucose tolerance test (GTT) if the one-hour result is elevated.

With the IADPSG screening recommendations, some women will be diagnosed with overt diabetes in early pregnancy (with an A_1C of 6.5 or higher, a fasting glucose of 126 or higher, or a random glucose of 200 or higher with confirmation). There is support from IADPSG to use a fasting glucose to diagnose gestational diabetes when the fasting glucose is between 92 and 125 without the need for a 2-hour

OGTT. If a woman has a non-diagnostic random blood glucose or A_1C, but appears to be at increased risk (for example with an A1C of 5.7 to 6.4, a random glucose of 140 to 199, or with a history of GDM in a prior pregnancy), it may be prudent to do a fasting glucose screen to avoid a delay in the diagnosis of GDM until later in the pregnancy.

Screening for overt diabetes early in pregnancy is important. High glucose levels are associated with higher rates of congenital anomalies, miscarriage, and stillbirth. Identifying women with diabetes as early as possible and achieving prompt glucose control should be a priority for all sites providing care to AI/AN pregnant patients. Identifying these women prior to pregnancy and achieving glucose control prior to conception is even better. Gestational diabetes management is also important, and we should seek to identify GDM early and work with our patients to manage all diabetes well.

It is estimated that the new criteria will result in 17% or more of our prenatal patients being diagnosed with diabetes or gestational diabetes, making additional resources an urgent priority at some sites. But as pregnancy represents a unique time in a woman's life -- with frequent visits to health care providers and increased motivation to be as healthy as possible -- this may be one of our best opportunities to positively impact the health of both the mother and the baby -- indeed, the whole family.

Resources

IHS MCH Website – Sample Guidelines from Alaska: *http://www.ihs.gov/MedicalPrograms/MCH/W/documents/DMPreg.doc*

IHS Diabetes Website: *http://www.ihs.gov/MedicalPrograms/Diabetes/*

Centers for Disease Control Diabetes in Pregnancy Resource Page: *http://www.cdc.gov/Features/DiabetesPregnancy/*

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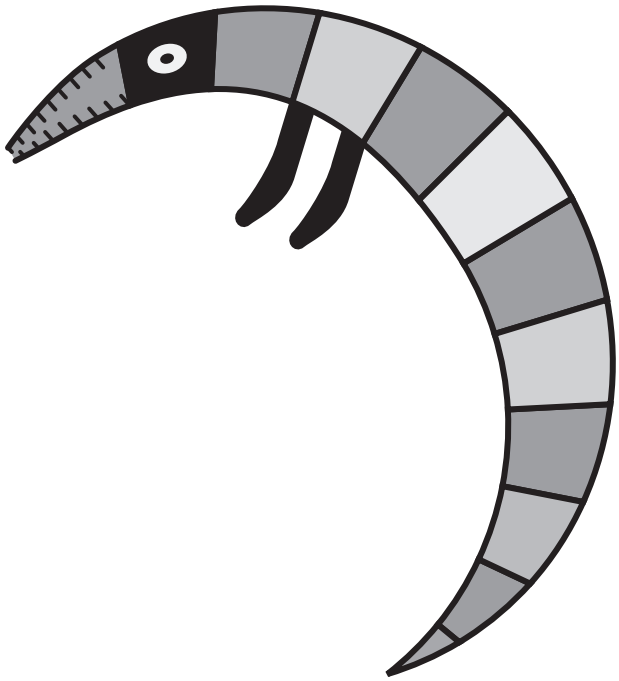

A Case Study in Effective Delivery of Health Care for People with Diabetes in a Rural Setting

Karen Glucksberg, ARNP, PNP, Dennehotso Health Clinic, Dennehotso, Arizona, and Molly Jayne Bangert, BSN, RN, CDE, Kayenta Service Unit, Kayenta, Arizona

Diabetes is an exponentially enlarging health problem in the US. According to the 2007 CDC National Diabetes Fact Sheet, "23.6 million persons or 7.8% of the population in the US have diabetes; 17.9 million persons are diagnosed and 5.7 million are undiagnosed. Approximately 1.6 million new cases of diabetes among people aged 20 years or older were diagnosed in the US in 2007."[1] Diabetes looms even larger over the Navajo Nation. Year 2007 IHS population data show that "16.3% of American Indians and Alaska Native (AI/AN) adults have diagnosed diabetes. There was a 68% increase in diabetes from 1994 to 2004 in AI/AN youth aged 15 - 19 years. Thirty percent of AI/AN have prediabetes. There was a 58% increase in diabetes prevalence among AI/AN aged 20 - 29 from 1990 to 1998, as compared with 9.1% increase in the US general population."[2]

The problem of rising diabetes rates is common knowledge. How to deal with the issue is complex. There are a variety of factors impacting the delivery of diabetes care in the US. Different locales change the health care landscape in terms of cost, availability of medical personnel, time allotment for seeing a complex disease entity, general focus on cure vs. prevention, the economic resources of a community, etc. Although, one might assume better care in large, urban areas vs. smaller towns and rural areas due to concentration of medical personnel and resources, varying problems cause substandard care for diabetic patients throughout the country. Some of the popular news sources and scientific journals reflect this. An article in *The New York Times National* Aug 20, 2007 states the following: "According to the federal Centers for Disease Control and Prevention, only 7% [of diabetics] are getting all the treatments they need. Dr. Michael Brownlee, director of the JDRF International Center for Diabetic Complications Research at the Albert Einstein College of Medicine, states 'I can only conclude that people are not aware of their risks and what could be done about them.' In part, the fault for the missed opportunities to prevent complications and death lie with the medical system. Most people who have diabetes are treated by primary care physicians who had little instruction on diabetes while they were in medical school. Then the physician typically spends ten minutes with diabetes patients, far too little time for such a complex disease, specialists say. It is, in part the fault of proliferating ads for DM drugs that emphasize blood sugar control and in part the fault of public health campaigns that give the impression that diabetes is a matter of an out-of-control diet and sedentary lifestyle and the best way to deal with it is to lose weight."[3]

Drs. Egade and Michael reported in an article written in 2002, "Routine care for patients with Type II Diabetes is provided mainly by primary care physicians such as internists and family physicians. However, data from several studies indicate that the quality of diabetes care in primary care is less than optimal. Suggested reasons include deficiencies in physician knowledge, lack of belief in the value of aggressive treatment of diabetes and problems with patient compliance, including the lack of fostering patient autonomy. Other suggested factors include the complicated nature of diabetes care and the substantial time requirements of high quality diabetes care."[4]

The *New York Times* published a series of articles in 2006 focusing on diabetes in New York City highlighting the fact that it is a problem of crisis proportions. "Instead of receiving comprehensive treatment, New York's diabetics suffer substandard care. They don't test their blood as often as they should because they can't afford the equipment. Patients wait months to see the endocrinologist -- who provides critical diabetes care -- because lower pay has drawn too few doctors to the specialty. And insurers limit diabetes benefits for fear they will draw the sickest, most expensive patients to their rolls. There is a bias against effective care for chronic illnesses."[5] Physician time limitation was noted earlier. "A major contributor to shortfalls in delivery of recommended health care services is lack of physician time . . . There are not enough primary care physicians to meet the recommended care guidelines within the current model of a single physician providing all required preventative, chronic disease, and acute care to patients in his or her practice."[6] It appears that substandard care is spread around without predelection for any particular group of people or geographic area. So what are the factors that allow excellent care for diabetics to exist?

In fact, diabetes is a complex, multifactor disease to be attacked from many angles: weight control, foot exams, eye exams, dental exams, blood pressure management, diet, exercise, laboratory monitoring, immunizations, and education. For diabetes care to be effective, there needs to be a team approach with a cadre of health care professionals at various levels of education and expertise, along with trained

community members, to make inroads in lifestyle change. The following is a description of a team approach to diabetes care over a four-year period and the results of that care.

Dennehotso Clinic is a satellite clinic in the Kayenta Service Unit of the Navajo Area Indian Health Service, twenty-five miles from Kayenta, the main health center. It is a rural Navajo community that, according to 2000 census figures, has a population of 1,626 persons.

There are many barriers to care at Dennehotso. The clinic is isolated, roads are sometimes impassable due to heavy rains, and homes are widely dispersed. The community is impoverished. Access to the clinic is often sporadic for some patients who must rely on family or friends to give them a ride. Some patients walk. Functioning cars are at a premium. Gas is expensive. Clinic visits are weighed against other necessary functions in daily life.

Resources at the clinic are limited. The clinic is small, with a modest budget, limited equipment, and a small staff. The pharmacy stocks commonly needed medications, but special items must be requested from the main facility. The laboratory performs basic procedures. Point-of-care testing includes urine dipsticks and hemoglobin A_1C, but all routine chemistries must be run at the Kayenta Health Center. Special tests needed are centrifuged and transported to Kayenta to be sent out to the contract laboratory. Basic equipment includes an EKG machine and a Smart Printer for downloading blood glucose meters. The staff at Dennehotso clinic is comprised of a midlevel provider (NP), a nurse (rotating) from Kayenta, a nursing assistant, a pharmacy technician, a lab technician, and a medical records technician/medical receptionist. Due to staff limitations, our staff is cross-trained in various duties such as intake, translation, and education. Each staff member is held accountable for certain functions in an emergency.

Until 2004, care offered to patients with diabetes at Dennehotso was sporadic and offered in an urgent care setting. The care was haphazard and unstructured. The formalized Diabetes Day started in August 2004. It was held on a monthly basis with well recognized physicians from the Kayenta Health Center. A full time nutritionist became part of the team, followed by a Certified Diabetes Educator. A diabetes health technician and nutrition health technician educator rounded out this team. Chart reviews for accepted standards of care were incorporated into each encounter. The staff was taught to initiate labs and screening exams without direct orders. Laboratory tests, blood pressure, immunizations, and medications were monitored and readjusted according to standardized ADA/GPRA goals. Education was a major focus, incorporating lifestyle changes, meter teaching, insulin administration and knowledge regarding the diabetes disease process. Consistency of care was the foundation.

The monthly group at Dennehotso clinic is comprised of persons with longstanding diabetes and sporadic newly diagnosed diabetics. The group changes according to when the person's next scheduled visit is, but the patients are generally the same over time. On DM Day, group dynamics evolved in an ad hoc fashion born of necessity. Even though appointments were made, everyone tended to come at the same time -- generally in the morning. They congregated in a single small waiting area, and since there's only one exam room for private medical consultation and one room for private nutrition/diabetes education, everyone waited together. Since it is a small community most people know each other. Staff began talking to patients in the waiting room to occupy time and to teach pieces of information. Since the certified diabetes educator was familiar with group education models, she saw the opportunity to turn the situation into formalized group teaching.

Waiting room interactive education sessions included exercise sessions using resistence bands, presentations on foot health, and group meter education. Another interactive teaching exercise occurs with a DM Education ball (or a Nutrition Education Ball) in which participants throw the ball to each other, and wherever the hands grasp the ball, there is a question related to diabetes or nutrition that the person must answer. We stage healthy diabetic ice cream socials: learning how to make sorbet (with rock salt, ice, milk, and fruit mixed in plastic baggies) and demonstrations on how to make cheap but good skin cream, since dry skin is an issue for diabetic patients, along with cost. All these activities promote group interaction and diabetes education.

The results of providing standardized care with consistent providers teaching the principles in a loosely constructed group format from 8/04 - 8/07 demonstrated important changes in terms of concrete measurements. Seventy-one patients (73 % female, 27 % male) were tracked during this period. There was a 9% improvement in A_1C measurements less than 7%; a 10% improvement in A_1C values greater than 11%; a 12% improvement in A_1C values less than 8%; and a 19% improvement in documented A_1C values.

A McNemar test for change was performed on the A_1C values. The <7 change was significant at $p < .05$; the >11 change was significant at $p < .05$; and the <8 was significant at $p < .05$. " Studies in the United States and abroad have found that improved glycemic control benefits persons with either Type I or Type II diabetes. In general, every percentage point drop in A_1C blood test results can reduce the risk of microvascular complications (eye, kidney, and nerve disease) by 40%"[7]

Contributing factors leading to improved diabetes care were increased diet instruction (18% to 61%) and increased exercise instruction (7% to 55%) due to the availability of an RN CDE and nutrition education services. Further contributing factors include visual feedback from use of smartprinters, and improved monitoring of blood pressure, diabetes medications, and lab test results. Comprehensive diabetic foot exams increased from 10% to 65%, and dilated eye exams increased from 39% to 59%. However, dental exams decreased from 32% to 23% (dental and eye screening

are not available at the Dennehotso Clinic). Influenza immunizations increased from 65% to 79%, and pneumococcal immunization increased from 79 % to 97%.

How do we use the knowledge gained from the past several years going forward in Dennehotso? We now have a full time DM team with a strong leader. We have consistent, dedicated internists who have carved out a blueprint for delivery of diabetes care that has been fairly successful and can be more easily followed in the future. We are able to capture our own data more accurately and consistently. We adapted our limited inventory/space, utilizing resources at hand and have been able to provide excellent care, improve GPRA scores, and adherence to DM standards of care, thereby showing that diabetic patients can receive high quality care in a primary care setting without advanced technology, equipment, and specialists. We have also incorporated a group dynamic (basically out of necessity) that we now want to expand into a formal group curriculum.

The Dennehotso community posesses several characteristics to create a dynamic, successful group, but we need to further expand and formalize the group care model. We have a community that already has a strong group identity. Ties are based on ethnicity, language, shared history, and interrelated family and clan ties, so the concept of group is easily woven into the clinic fabric at Dennehotso. "The benefits of using groups in teaching or helping people learn new behaviors are several: mutual support/feeling that one is not alone in dealing with diabetes, improved task accomplishment, socialization, improved learning, increased motivation, insight development, attitude change, experiencial learning, problem solving/skill development, and sharing of perceptions."[8]

Our ad hoc group was effective. The underlying concept that group education is beneficial is corroborated by studies in the literature. "In the early 1990s, Dr. Scott, a geriatrician at the University of Colorado Health Science Center, developed a group visit model, the primary goal of which was to increase the quality of care to geriatric patients. This group visit model of care proved successful in many ways. Several randomized controlled trials conducted by Kaiser Permanente in 1991 and 1995 demonstrated fewer emergency room visits and fewer repeat hospitalizations . . . A 2005 Kaiser study of diabetes patients who attended group visits showed improved clinical outcomes (lower A_1C levels, lower LDL levels) and physician adherence to the use of clinical practice guidelines."[9] In a randomized controlled clinical trial by Trento et al, they determined that two years after beginning the study " . . . the A_1C levels were lower in patients seen in groups than in control subjects. Levels of HDL were increased with patients seen in groups and BMI and fasting triglyceride levels were lower. Patients participating in group visits had improved knowledge of diabetes and quality of life and experienced more appropriate health behaviors."[10] A further study done by Kaiser Permanente of Northern California followed a group of persons with diabetes " . . . who received their ambulatory diabetes management care in a cluster visit setting for a six month period [and who] showed a marked improvement in glycemic control, much higher levels of satisfaction with diabetes care and significant improvement in three of eight measures of self efficacy and three of seven health practices compared with control subjects"[11]

We intend to utilize the information we have gained and culled in the past several years to strengthen the focus of our Diabetes Clinic. We plan to build on the group education format, but will introduce more forward approaches to patient self-management using the MAPS tool. "The conversation map tools engage people in an interactive verbal and visual learning experience. Through the group dynamic and interactive discussions, it is postulated that people would be less guarded in asking questions and sharing information, allowing deeper insight into the person's perceptions. This allows providers to have a deeper insight into the patient's life."[12] Consequently providers should be more able to identify an individualized approach to assisting patients in attaining goals. In enhancing group based care, we also need to formalize teaching modules for presentation, which we have not done in the past.

We will bring out our JVN program for visual screening, which is overseen by the diabetes health technician. We will try to incorporate the personnel from the Special Diabetes Program, since they deal with the same population but on a community level. They would provide an added dimension to the program.

So we took a small isolated clinic on the Navajo Nation and delivered excellent care that is comparable to the rest of the country. It was rewarding and challenging. Not the least of the challenge was delivering care to a clientele who still have a perceived or actual distrust of most things not Navajo due to a long history of injustices and broken trust. Many Navajo people have preconceived notions that their health care is substandard because of their ethnicity, impoverishment, and limited choice in access to care. Sometimes they feel they don't get the medical world's best providers and, possibly, they feel no one really cares. This, we hope, is a small contribution to trust.

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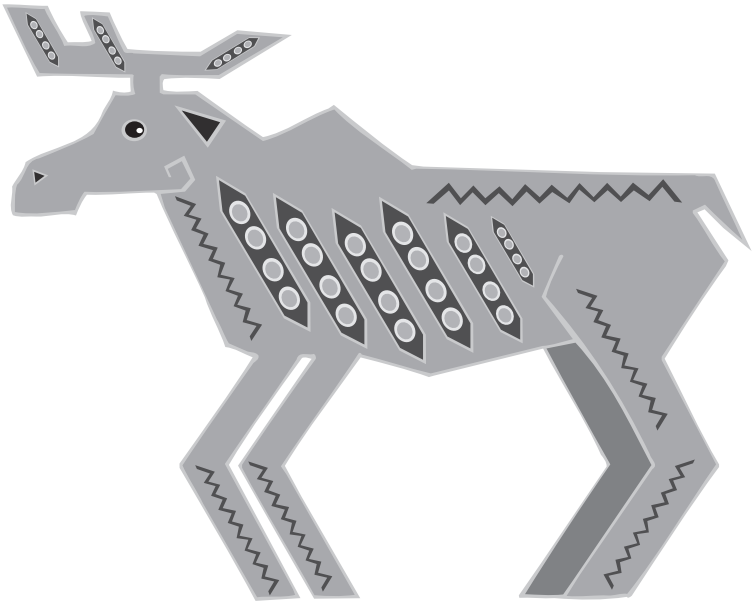
Acknowledgements: Dr. Trung Pham and Dr. Anne Newland for their excellent suggestions expanding the scope and direction of this article; and Geoffrey Patrissi, CIV USN, who graciously performed McNemar test on A_1C values.



Implementation and Evaluation of a Pharmacy-Managed Influenza Clinic

Charles R.W. Latimore, PharmD, LT US Public Health Service, Pharmacy Practice Resident, Gallup Indian Medical Center, Gallup, New Mexico; and Cindy Smith, PharmD, MPH, CAPT US Public Health Service, Director of Pharmacy, Gallup Indian Medical Center, Gallup

Introduction

Many people become ill due to the influenza virus every year. Morbidity and mortality are attributed to either exacerbations in chronic diseases or secondary to an increase in the rates of bacterial pneumonia.[1] Typically, 90% of deaths due to seasonal influenza occur among those who are aged 65 years or older.[2] This year was particularly alarming for the public, as there was much media publicity regarding children dying due to the H1N1 influenza or "swine flu."

Basic sanitary precautions (e.g., hand washing) and immunization are important factors in reducing the number of cases of influenza.[3] Pharmacists, particularly those in the Commissioned Corps, can play an important role in the community by serving as vaccinators. A pharmacy-managed influenza clinic allows pharmacists the opportunity to serve their community, while at the same time, highlights the openness of the Public Health Service (PHS) to allow pharmacists to expand into unconventional roles.

Methods

Vaccine supplies were requested months prior to the start of the influenza clinic in quantities based on the previous year's vaccination requirements. Standing orders and protocols were developed to allow for licensed pharmacists to administer vaccinations. The administration and clinical department chiefs then agreed to allow the pharmacists at Gallup Indian Medical Center (GIMC) to be the primary health care providers responsible for administering the influenza vaccines to the patients who presented to clinic this year.

Several weeks prior to the start of the vaccination clinic, an immunization certification course sponsored by the state board of pharmacy was held for those pharmacists who were not yet licensed to administer vaccines. A competency form was developed to assess the technique of all pharmacists planning to participate in this year's clinic (Appendix 1). Once a pharmacist completed all of the requirements, their information was sent to the state board for processing.

Actual execution of the clinic required several changes in the schedule for the pharmacists. The clinic was open from 9 am until 7 pm, and the clinic managers arrived one hour prior to opening to restock the supplies and draw up the early morning doses. Depending on the workflow of the clinic or main pharmacy, a manager could pull willing vaccinators from the main pharmacy or vice versa. A new shift called "Flu Pharmacist" was created to serve as a placeholder in the schedule. The "Flu Pharmacist" was required to work from 10am until 7pm and either vaccinate or cover for a pharmacist who wanted to participate.

Patients followed a logical flow through the different areas of the clinic. Patients would receive several documents including a vaccine information sheet (VIS) and sign an informed consent (Appendix 2). They would take the forms to the patient registration area to verify that they had a chart at GIMC and that their contact information was correct. Next they would present this to the greeter (technician) and stand in line until called for vaccine administration. A pharmacist would then verify that there were no contraindications and confirm that the patient understood the risks and benefits involved. The shot was given, and the patients were then counseled to wait in the recovery area. They were to follow up in their primary care clinic for a second shot if indicated.

Results

The clinic started in mid-September and lasted until early November 2009. Almost 700 of the 998 employees were vaccinated in a three-day vaccination blitz that occurred a week before the clinic opened to the public. Initially, the clinic vaccinated anyone who was six months of age or older who did not have any contraindications to vaccine administration. In the first seven days of being open to the public, GIMC's pharmacy department administered 2,400 doses of seasonal influenza vaccine. When the clinic ended in early November, approximately 7,000 doses of seasonal influenza and 869 doses of H1N1 had be administered to the public. Occasionally the clinic could only stay open for several days at a time due to the high demand and limited supply of both the seasonal and H1N1 vaccine.

Pharmacists would rotate through the clinic at one-hour intervals to limit the impact the clinic would have on normal pharmacy operations. Many volunteered to work longer hours or come in on weekends to help process refill requests. Surprisingly, the error rate did not increase dramatically during the winter months despite the increased workload and employee illness.

Providers, patients, and hospital administration were extremely satisfied with the influenza clinic. The workload

was reduced in the different adult and pediatric clinics because those who wanted to come in only for the immunization could have taken many of the appointment slots. This gave the other providers more time to work on more serious conditions and freed up the clerical staff as well.

GIMC's hospital administration saw this clinic as an easy way to cut costs while providing a much needed service. Because most of the staff that worked in the clinic were Commissioned Corps officers, no overtime had to be paid, nor contractors hired. With the creation on the Flu Pharmacist position, the clinic would not depend on nurses to staff the clinic from 5 to 7 pm as it had done in the past; based on the GS scale, two newly hired nurses without any experience (level 4, step 1) would have cost the hospital approximately $3,000 in overtime to work those hours. An experienced contracted nurse manager could have cost the hospital as much as $30,000 to run the clinic full-time for eight to nine weeks.

Conclusion

Much of the impact the pharmacy-managed flu clinic had remains unquantifiable due to the uniqueness of this year's H1N1 epidemic. An increase in patient load seen throughout GIMC definitely put a strain on the many services offered at the hospital, but many more cases of pneumonia or chronic disease exacerbations were possibly avoided due to the vaccination efforts. As a result, establishing an influenza clinic can save a hospital's resources and provide a means for professional growth for the pharmacy staff.

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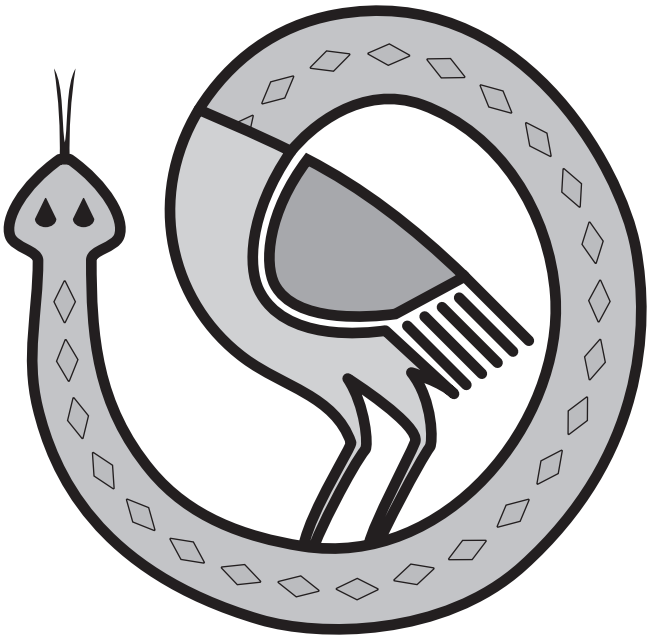

Appendix 1

GALLUP SERVICE UNIT

PHARMACY DEPARTMENT

PHARMACY/NURSING EMPLOYEE COMPETENCY FORM

FLU CLINIC COMPETENCIES – ADULT & PEDIATRIC PATIENTS

EMPLOYEE NAME (ORIENTEE): _____ DATE COMPETENCY ASSESSMENT INITIATED: _____

DEPARTMENT _____ EMPLOYEE GS LEVEL _____

Competency Statement: Administers Influenza Vaccine to Adult & Pediatric patients per CDC Guidelines and GIMC Directive.

INSTRUCTIONS: Employee to complete initial self-assessment using assessment codes.
Preceptor/validator to assess competency after training and/or observation using assessment Codes and assessment method codes.
Preceptor/validator to initial and date validation when employee is able to successfully perform competency independently.
Supervisor to sign and date (see end of this document)
Comments as pertinent.
Full signature is required for all validation initials (see end of this document)
Refer to CDC Guidelines, www.immunize.org, and Manufacturer's instructions for procedure guidelines

ASSESSMENT CODES	
Preceptor Assessment	**Method of Assessment**
0 = no experience	**VF** = Verbal Feedback
1 = minimum experience	**T** = Written Test
2 = perform with assistance	**RD** = Return Demonstration
3 = perform independently	**CS** = Case Study
4 = expert – can teach	**DO** = Direct Observation

CRITICAL ELEMENTS	SELF ASSESSMENT	PRECEPTOR ASSESSMENT	ASSESSMENT METHOD	PRECEPTOR'S VALIDATION DATE	INIT	COMMENTS
1. Identifies the patient using two patient identifiers						
2. Ensures that consent form has been signed						
3. Identifies adults & children in need of influenza vaccination based on meeting any of the CDC criteria on the current Vaccine Information Statement (VIS)						
4. Screens all patients for contraindications and precautions to influenza vaccine as described on the CDC Vaccine Information Statement						
5. Ensures that all patients (or in the case of a minor child, parents or legal guardian) have been provided with a copy of the most current federal Vaccine Information Statement (VIS).						

Appendix 1

GALLUP SERVICE UNIT

PHARMACY DEPARTMENT

PHARMACY/NURSING EMPLOYEE COMPETENCY FORM

FLU CLINIC COMPETENCIES – ADULT & PEDIATRIC PATIENTS

6. For CHILDREN: Administers injectable trivalent inactivated influenza vaccine (TIV) IM using a 23 – 25g, 7/8 – 1 ½ inch needle, depending on age, in the vastus lateralis muscle (see IM injection handout) as follows: • 0.25 mL for children 6 – 35 months • 0.5 mL for all others age 3 years and older Children 9 years of age and younger who are receiving influenza vaccine for the first time should receive two doses (separated by at least 4 weeks for TIV)						
CRITICAL ELEMENTS	**SELF ASSESSMENT**	**PRECEPTOR ASSESSMENT**	ASSESSMENT METHOD	**PRECEPTOR'S VALIDATION DATE**	**INIT**	**COMMENTS**
7. For ADULTS: Administers 0.5 mL of injectable trivalent inactivated influenza vaccine (TIV) IM using a 21 – 22g, 1 – 1 ½ inch needle, in the deltoid muscle.						
8. Documents each patient's vaccine administration information in the following places: • Medical – Record: - the date the vaccine was administered - the manufacturer and lot number - the vaccination site and route, & Dosage - the signature and title of the person administering the vaccine - If the vaccine was not given, records the reason(s) for non-receipt of the vaccine (e.g., medical contraindication, patient refusal)						
9. Is prepared for management of a medical emergency related to administration of the vaccine by having equipment and medications available						
10. Reports all adverse reactions to influenza vaccine to the appropriate supervisory staff.						

Employee, Preceptor/Competency Validator, and Supervisor must sign with a full signature including full name, title, and date.

Date Completed _____

Employee _____

Validator _____

Supervisor _____

Appendix 2

Patient Name: _____
Date of Birth: _____
Chart Number: _____

Date:

GIMC FLU CLINIC

Medicare

CLINIC CODE 12

CHIEF COMPLAINT: 2009-2010 INACTIVATED SEASONAL INFLUENZA VACCINATION

S: Need Influenza Immunization

O: Annual Flu Immunization

A: Potential for Spread of Communicable Disease and Loss of Work

SCREENING QUESTIONAIRE:		
Has the person to be vaccinated already received a flu vaccine this year?.....	YES	NO
Is the person being vaccinated allergic to eggs or Thimerosol (mercury – containing preservative used in vaccines)?	YES	NO
Has the person to be vaccinated ever had a serious reaction to the influenza vaccine in the past? (Shortness of breath, hives, difficulty breathing, etc.).....	YES	NO
Is the person to be vaccinated sick today? (Fever, chills, body aches, etc.)	YES	NO
Has the person to be vaccinated every been paralyzed by Gullain-Barre Syndrome?.....	YES	NO

I have received and read the information sheet **(Inactivated Seasonal Influenza VIS 2009-2010 dated 8/11/2009)** for the flu vaccination and have had the opportunity to ask questions. I understand the benefits and risks of the flu vaccination and request that it be given to me or the person named below for whom I am authorized to make this request.

Patient Signature: _____ Date:_____
(Person to receive vaccination or person authorized to make the request – parent or legal guardian)

Thank you

FOR VACCINATOR USE

INFLUENZ VACCINE LOT #		**TIME ADMINISTERED**		R DELTOID IM 0.5mL GIVEN		L DELTOID IM 0.5mL GIVEN
MANUFACTURER		@		R THIGH IM 0.25ML GIVEN		L THIGH IM 0.25mL GIVEN
EXPIRATION DATE						

VACCINATOR SIGNATURE		**DATE**	**PROVIDER NUMBER**

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Sources of Needs Assessment Data That Can Be Used to Plan CE Activities

The new focus in planning continuing education activities is the identification of gaps in provider knowledge, competence, or performance that can be addressed with your activity. Ideally, these gaps should apply specifically to the American Indian and Alaska Native population and the providers who serve them. Where can you obtain data that help you identify these gaps? From time to time, we will publish items that either give you such data or show you where you can find them. When you are asked about the sources of your needs assessment data in your CE planning process, it will be easy enough to refer to these specific resources.

Dr. Murphy's article about criteria for the diagnosis of gestational diabetes provides new medical knowledge that is evidence-based and relevant to the population we serve. It would be easy to use this as the basis for a continuing education activity at your facility to incorporate these into your diabetes standards of care.

This is a page for sharing "what works" as seen in the published literature, as well as what is being done at sites that care for American Indian/Alaskan Native children. If you have any suggestions, comments, or questions, please contact Steve Holve, MD, Chief Clinical Consultant in Pediatrics at sholve@tcimc.ihs.gov.

IHS Child Health Notes

Quote of the month

"That fellow seems to me to possess but one idea, and that is a wrong one."

Samuel Johnson

Articles of Interest

Identifying children at low risk for bacterial conjunctivitis. Arch Pediatr Adolesc Med. 2010;164(3):263-267. *http://archpedi.ama-assn.org/cgi/content/full/164/3/263*

Of 368 patients enrolled, 194 (53%) were males and the median patient age was 3 years. Conjunctival cultures were negative in 130 patients (35.3%). Age 6 years or older, presentation in April through November, no or watery discharge, and no glued eye in the morning were the clinical factors found to be independently associated with a negative conjunctival culture. If 3 factors were present, 76% of patients had a negative culture. If all 4 factors were present, 92% of patients had a negative culture. The authors suggest that a combination the 4 clinical findings above (age < 6 years, no purulent discharge, no glued eye in the morning and presentation in April through November) make the diagnosis of bacterial conjunctivitis extremely unlikely. Even three findings made the likelihood of bacterial conjunctivitis less than 25%.

Editorial Comment

This could be like the Ottawa Ankle Rules: an algorithm that doesn't tell you who has bacterial conjunctivitis but one that can let you know with reasonable certainty those who don't have bacterial conjunctivitis. This could lead to a reduction in unnecessary antibiotic therapy.

Infectious Disease Updates
Rosalyn Singelton, MD, MPH
Influenza Vaccine Recommendations for 2010 - 2011

ACIP now recommends that all people 6 months and older receive annual influenza vaccination. During the 2009 H1N1 pandemic, American Indian and Alaska Native (AI/AN) people experienced a 4-fold higher death rate from H1N1 compared to non-AI/AN populations. The recently released 2010 ACIP influenza vaccine recommendations include two important changes. First, ACIP now recommends that **all** people 6 months and older receive annual influenza vaccination. Second, because of increased risk of influenza morbidity and mortality, the 2010 ACIP recommendations include AI/AN people in groups prioritized to receive influenza vaccine during vaccine shortages or delays. The RPMS Immunization package now includes an option to forecast influenza vaccine for all ages.

The 2010 - 11 seasonal influenza vaccine includes the 2009 H1N1 strain and is expected to be available by early September. Since 2 doses of 2009 H1N1 vaccination are required to provide full protection in children < 9 years of age, the 2010 - 2011 influenza vaccine recommendations state that children who did not receive any 2009 H1N1 vaccine will need 2 doses of the 2010 - 2011 seasonal influenza vaccine, regardless of prior seasonal influenza doses.

Unfortunately, we have been unable to incorporate this nuance into the RPMS influenza forecasting for 2010 - 11, and the influenza forecasting will only look at seasonal flu vaccine in previous years. Therefore, children < 9 years who did not get any H1N1 last season but did get 2 doses of seasonal flu will NOT be forecast in RPMS to receive a 2nd seasonal flu dose this year; however, per ACIP recommendations, they need a 2nd dose. So, in addition to the immunization forecast in RPMS, providers need to check the H1N1 history to determine if a child might need a 2nd dose.

For children < 9 years of age, sites should do the following:

- Review immunization history for H1N1 vaccine
- If no H1N1 was given, then the child will need a 2nd dose of seasonal influenza vaccine 4 weeks after his or her first dose
- If the child received at least 1 dose of H1N1, follow the influenza forecasting in the RPMS Immunization package regarding 1 or 2 doses

For all other age groups, follow the influenza forecasting in the immunization package.

Recent literature on American Indian/Alaska Native Health
Jeff Powell, MD, MPH

Richardson L, Rockhill C, Russo J, et al. Evaluation of the PHQ-2 as a brief screen for detecting major depression among adolescents. *Pediatrics*. 2010;125;e1097-e1103;originally published online Apr 5, 2010; DOI:10.1542/peds.2009-2712. *http://www.pediatrics.org/cgi/content/full/125/5/e1097*

With the coming of fall, the yearly ritual of sports pre-participation examinations, and students' return to schools, this month seemed a fitting time to focus on adolescent depression screening. The above study by Richardson and colleagues is important because it is the first study to specifically validate a commonly used screening tool for major depression, The Patient Health Questionnaire - 2. While the study was conducted in a large sample of mostly Caucasian, insured youth living in the Pacific northwest, this is a significant contribution to a vitally important topic facing all American Indians/Alaska Native (AI/AN) child health providers.

While published data are limited, the increased psychosocial risk and mental health needs of AI/AN youth are widely acknowledged. The increased prevalence of depression is often reflected painfully by clusters of suicide (the overall completed suicide rate for AI/AN youth is more than three times national rates). Appropriately, there have been many calls for vigilant depression screening and treatment in AI/AN communities. (For an overview of indigenous child mental health, see Stork et al., 2009).

Richardson et al. evaluated the PHQ-2 as brief initial screen for major depression in youth aged 13 - 17 years. In briefest summary, an important "headline" from this work is that this rigorously conducted, well designed evaluation has shown the PHQ-2 to be a good screening tool for adolescent depression. Sensitivity (PHQ-2 score of 3 or greater) in comparison to the study gold-standard DISC-IV depression interview was 74%, and specificity was 76 percent. In other words, use of PHQ-2 alone in this study sample would have missed 26 percent of respondents with depression, while over-identifying 24 percent. Alone, these results are important to allow validation of this widely-used tool. Digging more deeply into the details of this study and further considering the study population raise several clinically relevant elements.

As for methods, the investigators mailed 4,000 questionnaires (containing the PHQ-2) to youth who had health visits within the group health medical system in the previous year. Sixty percent responded to the brief surveys, some by telephone interview. At this stage, an age-matched, randomly selected cohort was invited to participate in a more comprehensive evaluation. Respondents who had a high (presumed "positive" screen $\geq$ 3) PHQ-2 score were over-selected in order to provide robust comparison to controls who had lower PHQ-2 scores. In all, 89 percent of those contacted at this stage participated, 242 "depressed" respondents and 202 controls. In addition to the PHQ-2 screening tool, this study assessed participants with further measures: the PHQ-9 depression screening tool, the Columbia Impairment Scale (CIS), the Screen for Child Anxiety Related Emotional Disorders (SCARED), and the Brief Pediatric Symptom Checklist (PSC - 17). Again, the gold standard used for major depression was the Diagnostic Interview Schedule for Children (DISC-IV). The additional tools were used to evaluate the PHQ-2 in relation to other commonly used primary care screening tools, several of which have the ability to identify other commonly occurring mental health concerns.

The complete screening evaluation leads to some interesting implications. The authors clearly indicate that a cut point score of 3 or more (out of a total score of 6) provides the most overall accuracy. However, they do very appropriately point out that in some settings, using the lower threshold score of 2 may be advantageous. By providing a complete picture of sensitivity and specificity at each cutoff score, this allows primary care clinicians to decide what is best for their setting. If using a cutoff score of 2, sensitivity might be expected increase to 89.5 percent, whereas specificity would decrease to just under 57 percent. In other words, this initial screen would incorrectly classify as normal (or "miss") a little more than 10 percent of depressed youth. For the "positive" respondents, 43 percent would be falsely characterized as possibly depressed. One effective approach to this dilemma (offered by the authors) is to follow up all PHQ-2 scores of 2 or greater with a PHQ-9 (which has much higher established specificity). This approach makes perhaps even more sense in many AI/AN communities, where the pre-test probability of depression is much higher. Recalling medical school statistics, a higher prevalence of depression in the community (by some estimates double or triple the US all races) would increase the positive predictive value of a given PHQ 2 score.

Regarding false positives in this study, the authors thoughtfully provided a characterization of all screening test results for the 26 percent of PHQ-2 "positive" (3 or greater in this study) scorers. Interestingly, the large majority of these youth misidentified as possibly depressed actually had some signs of depressive symptoms (below the threshold of major depression) or had screening results showing another disorder (an anxiety disorder or externalizing disorder). In other words, the PHQ-2 false positive group was shown to be at considerable psychosocial risk.

To sum up, this study provides very important validation of the efficacy of the PHQ-2 as an adolescent screening tool. On one level, using the standard cutoff score of 3 or more offers good accuracy. However, using a more stringent cutoff (i.e., lower threshold score of 2) in a multi-tiered screening approach with the PHQ-9 may offer an even more robust approach to identifying at-risk AI/AN youth.

Further insights and consideration of the use of a lower PHQ cutoff for communities with higher prevalence of depression and suicide are being sought from the study authors. I will include their responses in a future issue of CHN.

References

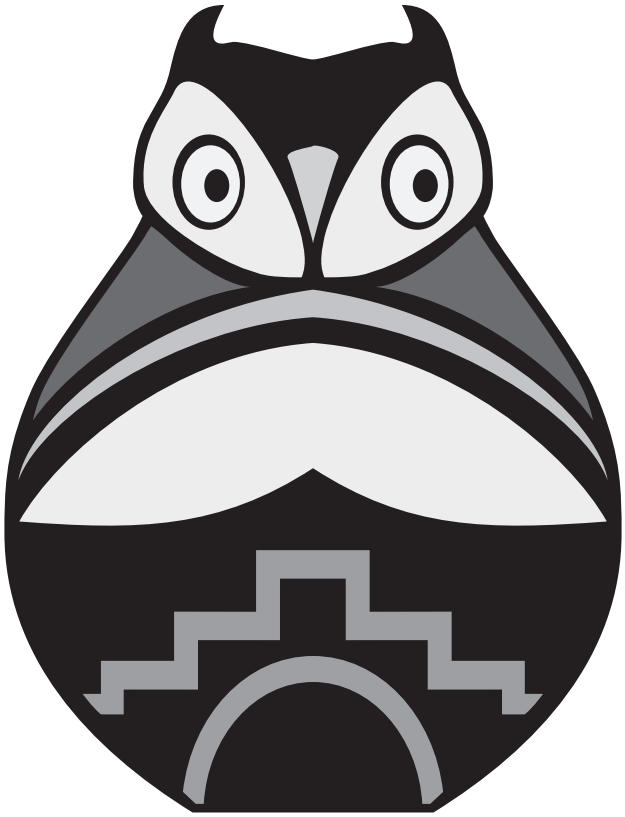
Behavioral and Mental Health Challenges for Indigenous Youth: Research and Clinical Perspectives for Primary Care. Storck M, Beal T, Bacon J, Olsen P. Pediatr Clin N Am. 56 (2009)1461–1479.

For more information about and copies of the PHQ - 9 depression screen visit:
http://www.teenscreen.org/programs/primary-care?gclid=CLbPzNHvoqMCFcpd2godz3wZ4Q

The PHQ-2 is composed of the first two questions within the PHQ 9:
How often have you been bothered by the following symptoms during the last two weeks?

1) Feeling down, depressed or hopeless
2) Little interest or pleasure in doing things

Points are assigned as follows for each answer: Not at all (0), Several Days (1), More than Half the Days (2), Nearly Every Day (3).



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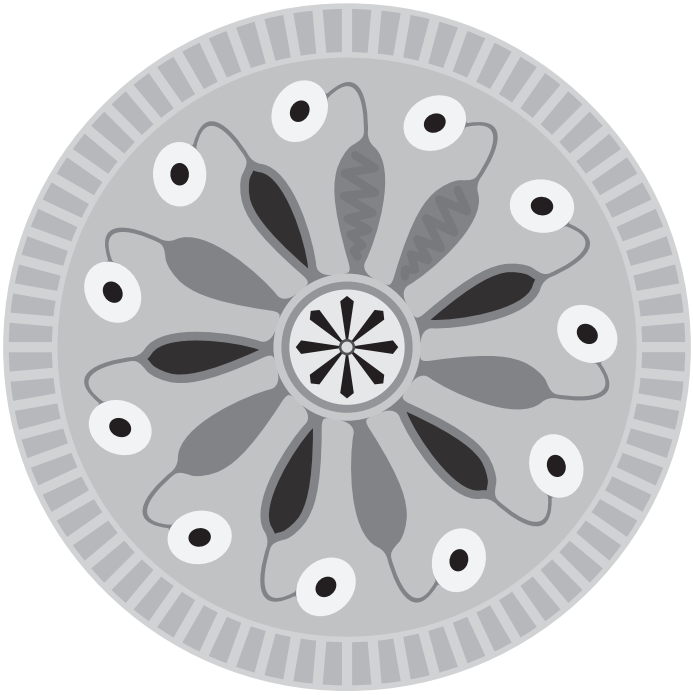
For information on upcoming seminars and/or previous seminars, including the recordings and handouts, click on this link and see Diabetes Seminar Resources: *http://www.diabetes.ihs.gov/index.cfm?module=trainingSeminars*

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*.

Tenth Annual Tribal Clinical Cancer Update
October 20, 2010; Portland, Oregon

The Northwest Tribal Comprehensive Cancer Program will be presenting the Tenth Annual Northwest Tribal Clinicians' Update at the Northwest Portland Area Indian Health Board in Portland, Oregon from 8 am to 5 pm Wednesday, October 20, 2010, and live via WebEx. The topic this year is "Tools for Clinical Cancer Management." The conference will provide information on breast, cervical, and colorectal cancer; RPMS/EHR – Tools for Current Cancer Screening recommendations, Tracking, and Documentation; Life during Cancer Treatment; Cachexia and Wasting in Cancer; Physical Activity During and After Cancer Treatment; and Cancer Survivorship. There is no registration fee for Indian Health Service or tribal employees. The conference is suited for clinical staff with an interest in cancer. Program registration is available at *http://www.surveymonkey.com/s/2010ClinicalUpdateRegistration*. The conference is sponsored by The Indian Health Service Clinical Support Center, which is accredited by the Accreditation Council for Continuing Medical Education (ACCME), and the American Nurses Credentialing Center Commission on Accreditation (ANCC) to sponsor continuing medical education for physicians and nurses. For more information, please contact Eric Vinson at (503) 416-3295 or e-mail *evinson@npaihb.org*.



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 john.saari@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.

Emergency Department Physician
Family or Pediatric Nurse Practitioner
Physician Assistant
Sells Service Unit; Sells, Arizona

The Sells Service Unit (SSU) in southern Arizona is recruiting for a board certified/board eligible physician (family practice, internal medicine, or emergency medicine) to join our experienced medical staff and work in our emergency department. We are also recruiting for a family/pediatric nurse practitioner or physician's assistant for our school health program and a family nurse practitioner for the Sells Hospital outpatient department.

The SSU 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, the Santa Rosa Health Center, located in Santa Rosa, and the San Simon Health Center located in San Simon, 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.

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Internal Medicine/Family Practice Physician
White Earth IHS Health Center; Ogema, Minnesota

We are recruiting for two positions for our beautiful White Earth Health Center. We are located in northeast Minnesota. We are a freestanding outpatient-only facility with no hospital or ER responsibilities. We are open Monday through Friday, 8:00 am - 4:30 pm. In addition to our main clinic in Ogema, we also have two satellite clinics located in two other reservation communities. We are very honored and humbled to serve primarily the White Earth Band of the Anishinaabe People. Our clinic is looking for energetic, creative physicians who have a passion for delivering excellent primary care. Our schedule also gives our providers the opportunity to live a full life outside of the clinic with no evening, weekend, or holiday responsibilities. The White Earth Clinic is a Federal IHS facility, and we accept either a Minnesota State license or out of state (unrestricted license to practice medicine).

Ogema is approximately 220 miles northwest of Minneapolis and 60 miles east of Fargo, North Dakota. There are literally hundreds of lakes and resorts located around our area. Detroit Lakes, Minnesota, a city of 8,000, is located 20 miles from the clinic. Approximately half of our employees reside in Detroit Lakes, with the other half living in small towns and on lakes in the area around the clinic. Fishing, hunting, cross country and downhill skiing, hiking, boating, swimming, and biking are just a few of the activities that are enjoyed by the people who live in our area. Detroit Lakes has recently been named one of the top ten lakes for boating in the nation by a leading outdoor magazine.

We offer a very competitive salary with loan repayment and bonuses definitely available for negotiation. We are excited and willing to offer a very attractive package to the physician who would fit into our vision of world class health care for the native people.

For more information please feel free to contact Zane Rising Sun, MD, Clinical Director, or Bryce Redgrave, CEO, at (218) 983-4300. (8/10)

Family Physician
SouthEast Alaska Regional Health Consortium; Juneau, Alaska

The SEARHC Ethel Lund Medical Center in Juneau, Alaska is searching for a full-time family physician with obstetrics to join a great medical staff of 14 providers (ten physicians and four midlevels) at a unique clinic and hospital setting. Have the best of both worlds by joining our practice where we share hospitalist duties one week every 6 - 8 weeks, 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.

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, collegial medical staff at a beautiful clinic with generous benefits. For more information, contact Dr. Cate Buley, Assistant Medical Director, Ethel Lund Medical Center, Juneau, Alaska; telephone (907) 364-4485; e-mail *cbuley@searhc.org*; or go to *www.searhc.org* to learn more. (8/10)

Family Practice Physician
Yakama Indian Health Center; Toppenish, Washington

The Yakama Indian Health Center is recruiting for two positions in family practice, pediatrics, or internal medicine to join our staff of four physicians, three ARNP, and two PA-C. We are a modern facility with on-site pharmacy services, an open access appointment system, electronic health records, a moderately busy outpatient practice, and a user population of 10,000 members of the Confederated Tribes and Bands of the Yakama Nation.

Located 150 miles southeast of Seattle in the Yakima Valley, Toppenish has a lot to offer both the outdoor enthusiast and the urban sophisticate. Hunt, fish, or golf during the day, then attend a Broadway musical at the Capitol Theatre in Yakima. Skiing at White Pass or Crystal Mountain is only an hour away, and the Yakama Nation Museum and Cultural Heritage Center in downtown Toppenish stays open seven days a week.

Base salaries depend upon experience, and range from $155,000 to $177,000. Other benefits may include loan payback, retention or recruitment bonuses, and moving expenses. For more information, please call our Clinical Director, Rex Quaempts, or our Management Analyst, Pam Leslie at (509) 865-2102. This advertisement will stay open until both positions are filled. (7/10)

Family Practice Physician
Warm Springs Health and Wellness Center; Warm Springs, Oregon

The Warm Springs Health and Wellness Center has an opening for a board certified/eligible family physician. Located in the high desert of central Oregon, we have a clinic that we are very proud of and a local community that has much to offer in recreational opportunities and livability. Our facility has been known for innovation and providing high quality care and has received numerous awards over the past ten years. We have positions for five family physicians, one of whom recently retired after 27 years of service. Our remaining four doctors have a combined 62 years of experience in Warm Springs. This makes us one of the most stable physician staffs in the IHS. Our clinic primarily serves the Confederate Tribes of Warm Springs. We have a moderately busy outpatient practice, with our doctors seeing about 15 - 18 patients per day under an open access appointment system. We were a pilot site for the IHS Innovations in Planned Care (IPC) project and continue to make advances in how we provide care to our patients. We fully utilize the IHS Electronic Health Record, having been an alpha test site for the program when it was created. We provide hospital care, including obstetrics and a small nursing home practice, at Mountain View Hospital, a community hospital in Madras, Oregon. Our call averages 1 in 5 when fully staffed. For more information, please call our Clinical Director, Miles Rudd, MD, at (541) 553-1196, ext 4626. (4/10)

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THE IHS PRIMARY CARE PROVIDER
A journal for health professionals working with American Indians and Alaska Natives

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