THE IHS PRIMARY CARE PROVIDER

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

July 2013 **Volume 38 Number 7**

Introduction to the Special Issue on Fall Injury Prevention

Lawrence R. Berger, MD, MPH, Academic Director, IHS Injury Prevention Fellowship Program, and Clinical Assistant Professor of Pediatrics, University of New Mexico, Albuquerque, New Mexico

Fall injuries are an enormous burden for older American Indians and Alaska Native (AI/AN) adults. They are the leading cause of unintentional injury deaths among AI/AN adults over 65 years of age. Among Alaska Natives aged 60 and older, falls account for 77% of all injury hospitalizations. In 2008, the average contract health charges for a single hospitalization due to fall injuries were nearly $36,000. The combination of demographic growth of the older population and high rates of diabetes in many AI/AN communities means that fall injury prevention will be an increasingly urgent priority.

As the articles in this issue demonstrate, comprehensive approaches to falls prevention among older adults must address the multi-factorial nature of falls. Both clinical and community health systems, and enhanced communication between them, are essential. Fortunately, models of care and resources for professional training and patient education are increasingly available. In addition to the program for primary care providers described in Dr. Scott's article in this issue, the CDC's National Center for Injury Prevention and Control recently released "The Stopping Elderly Accidents, Deaths & Injuries" (STEADI) Tool Kit for health care providers (*www.cdc.gov/injury/steadi*). Based on a simple algorithm, the tool kit includes basic information about falls, case studies, gait and balance assessment tests, instructional videos, and educational handouts.

This special issue of *The Provider* on fall injury prevention contains a great deal of practical information. In addition, we hope these articles will promote collaboration among clinicians, public health personnel, and community members to clarify the circumstances and risk factors behind fall injures and identify the best practices to prevent them.

In this Issue…

116 Introduction to the Special Issue on Fall Injury Prevention

117 Fall Prevention for Primary Care Providers: A Model Program from British Columbia

122 Falls

129 Print Version of *The Provider* Has Ceased Publication

130 Eagle Books Toolkit Available

131 Diabetes and Fall Injury Prevention: A Call to Action

139 Our Apologies

140 Position Vacancies

142 Electronic Subscription Available

Fall Prevention for Primary Care Providers: A Model Program from British Columbia

Vicky Scott, RN, PhD, Clinical Associate Professor, School of Population and Public Health, University of British Columbia; Senior Advisor on Fall and Injury Prevention, British Columbia Injury Research and Prevention Unit and Ministry of Health; and Director, Centre of Excellence on Mobility, Fall Prevention and Injury in Aging (CEMFIA), Victoria, British Coumbia; Bonnie Fiala, MA, Manager, Seniors' Fall Prevention, Chronic Disease, Injury Prevention and Built Environment Branch, BC Ministry of Health, Victoria, British Columbia; and Jo Ann Miller, Vice-President, Research and Evaluation, Victoria, British Columbia

Background

An estimated one in three persons over the age of 65 is likely to fall at least once each year.[1] In Canada, this translates to over 1.6 million seniors experiencing a fall in 2011. With the anticipated increase in the number of older persons in Canada,[2] this will increase to approximately 3.7 million by 2036.

Falls are the most costly source of injury among all ages, and falls among seniors were responsible for over 30 percent of total injury-related costs in Canada in 2004.[3] Even more important are the costs to society and individuals who sustain a fall. These include immobility due to a fear of future falls, pain, disability, financial hardships for persons injured by a fall and their families, dependence on others, premature admission to long term care, and premature death due to fall-related injuries. In 2004, adults aged 65 years and older accounted for approximately 13% of the Canadian population, and direct health care costs for fall-related injuries were $2.0 billion.[3] Without concerted fall prevention efforts, these costs are expected to more than double by 2031.[3]

The good news is that there is strong evidence to show that falls and resulting injuries can be prevented through changes in behavior, health service delivery, and the built environment.[4-6]

The most successful programs are those that include a comprehensive risk assessment followed by multiple proven interventions tailored to individual risk profiles.[4,7]

A number of clinical fall prevention guidelines exist to assist health care professionals in their assessment of fall risk and in their management of older adults who have fallen or are at risk of falling. Examples are guidelines by the Registered Nurses Association of Ontario, the American Geriatrics Society and British Geriatrics Society, the National Institute for Clinical Excellence, and the American Medical Directors Association.[8,4,9,10] However, the application of such guidelines to clinical practice is lacking.[11-13] The challenges to integrating evidence into practice are many, including time limitations and competing demands, knowledge and skill deficits, lack of coordination, and inadequate reimbursement.[12-15]

Recommendations for improving fall prevention practices include providing physician and other primary care providers with training and resources such as screening guides, educational materials, environmental and home safety checklists, and resources to support referrals.[11] To address this issue, a partnership of fall prevention experts, health care policy makers, and primary care physicians from across British Columbia (BC) developed a user-friendly, evidence-based fall prevention multi-media training program for primary care providers in BC. This paper describes the process used to develop this program, the results of an evaluation of its application by physicians, and the dissemination plan.

Development

Development of the Primary Care Fall Prevention (PCFP) materials was funded by the BC Ministry of Health. The effort was led by fall prevention experts at the Ministry's Centre of Excellence on Mobility, Fall Prevention and Injury in Aging (CEMFIA), in partnership with the General Practice Services Committee (GPSC) Practice Support Program (PSP), the BC Medical Association (BCMA), and the BC Injury Research and Prevention Unit (BCIRPU).

The BC Ministry of Health has the overall responsibility for ensuring the quality, appropriateness, cost effectiveness and timeliness of health services that are made available for all British Columbians.[16] CEMFIA represents a unique collaborative of researchers, health care providers, and policy makers with a shared goal of improving the health and safety of older British Columbians.[17] The GPSC offers an expanded role for physicians in BC in determining the future direction of health care through mutually identified initiatives around quality patient care and system-wide improvements.[18] The PSP, offered through the GPSC, is focused training for physicians and their medical office assistants to help improve practice efficiency and to support enhanced delivery of patient care.[19] The PSP was launched in 2007 with two objectives: to improve care for patients throughout the province and to increase job satisfaction among BC's general practitioners. The BCMA is a voluntary association of British Columbia's physicians, medical residents, and medical students. Governed by an

elected body of physicians, the BCMA represents the collective view of the BC medical profession and negotiates on behalf of physicians for their compensation.[20] The BCIRPU is a government funded research agency whose key objectives include reducing the burden of injury in BC; leading research and knowledge development; improving surveillance; guiding evidence-based prevention; supporting professionals and practitioners; providing awareness, education, and public information; and saving lives, reducing disability, and promoting safety.[21]

A development committee provided expertise on the proposed components of the PCFP multimedia package, the contents of each element, appropriateness for application to primary care practice in BC, and on best the means for dissemination and implementation. In addition, a core team of fall prevention experts and multimedia program designers worked to ensure that the PCFP materials were consistent with proven evidence for fall prevention, applicable to primary care practice, and packaged for ease of use.

The development committee included government divisions that guide policy for injury prevention, health promotion, and care for seniors in BC (BC Ministry of Health: Chronic Disease, Built Environment and Injury Prevention Branch, Division of Integrated Primary and Community Care, and the Seniors Healthy Living Secretariat), divisions and organizations that provide education and training for physicians (BCMA, and BC Ministry of Health, Primary Care Division), as well as practicing physician and seniors' representatives. The development committee held monthly meetings over a period of three months, and the final package was edited by the authors of this article and approved by the BC Ministry of Health in June 2011.

The evidence-based framework used to guide the development of this package was the American and British Geriatric Society's (ABGS) clinical practice guidelines for physicians (2010).[4] The ABGS guidelines are considered by leaders in the field to be the "gold standard" for clinical approaches to the prevention of falls among older adults. These guidelines integrate evidence on fall and fall injury risk into the routine medical examination of older adults with the goal of uncovering and addressing the compounding effect of common health conditions that lead to exponential levels of risk. Additional components of the package were added to reflect the need for a team approach to fall prevention, with content relevant to medical office assistants, nurses, nurse practitioners, therapists, and other health care providers who work with older adults.

The PCFP package consists of the provider resources, assessment tools, a training video, and patient education materials. The provider resources include five fact sheets designed as quick reference on the following key areas:

1. Providing a context for falls and fall-related injuries
2. Identifying risk factors related to falls and fall injuries
3. Incorporating assessments and interventions to reduce fall risk
4. Information about and a list of medications linked to falls
5. An algorithm outlining the pathway for fall prevention in older persons

The assessment tools include a validated 12-item checklist to assess the risk for falling,[22] and instructions for performing three validated tests of balance and mobility.[23-26] The checklist is designed to be completed in the waiting room by the patient. The balance and mobility tests are the Timed Up and Go (TUG) test, Tandem Stance test, and Chair Stand test, and are to be conducted by the office assistant or physician.

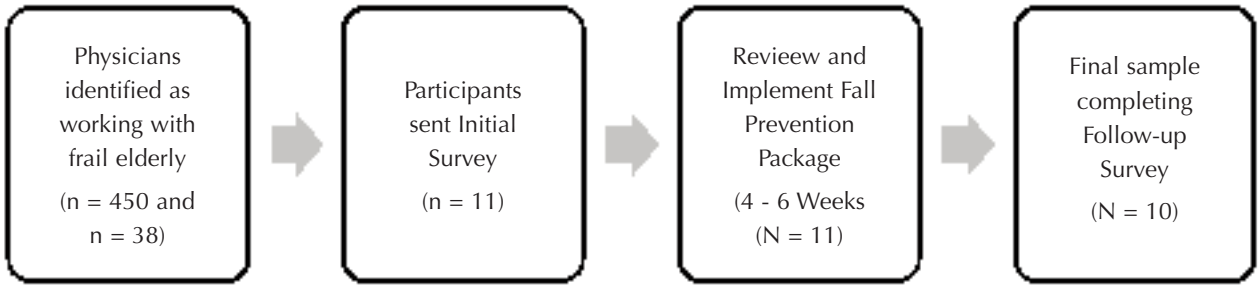
The 11-minute training video for primary care providers applies a case study approach involving a frail older adult in the community. The video depicts how the different components of the package can be incorporated into a routine physician visit, including a demonstration of the standardized balance and mobility tests. The education materials for clinicians to give to older adult patients include 1) a fall risk assessment checklist; 2) a brochure on fall risk factors and ways to improve the home environment to reduce fall risk; 3) a handout on safe and easy to follow exercises to do at home; and 4) recommendations for good sleep habits.

Field testing the multi-media package

Field testing of the package consisted of an independent evaluation[27] in 2011 to determine the effectiveness of the resources in increasing knowledge and/or bringing about changes in physician practice, and to identify strategies to promote the integration of the package into the routine care of physicians and other primary care providers across BC.

The field testing included a pre/post survey on fall-related knowledge and the use of the PCFP resources. Family physicians from the five regional health authorities in BC (Fraser, Interior, Northern, Vancouver Coastal and Vancouver Island) were approached about reviewing and evaluating the materials in the fall prevention package. A convenience sample of family physicians targeted for the evaluation were chosen from among those who have a substantial number of older patients who may be at risk of falling using two recruitment methods. First, 450 family physicians were sent a letter of invitation from among those who had participated in a workshop on the frail elderly or who had participated in the PSP Chronic Disease Module training. A second recruitment method consisted of connecting with potential participants through key contacts identified by the development and research team members and their networks of people who had substantial contact with family physicians. The research team sent invitation letters to 38 physicians identified as potential participants (Figure 1). Interest in participation was expressed by a number of physicians from both recruitment arms, with a final commitment from 11 physicians to participate in the full evaluation.

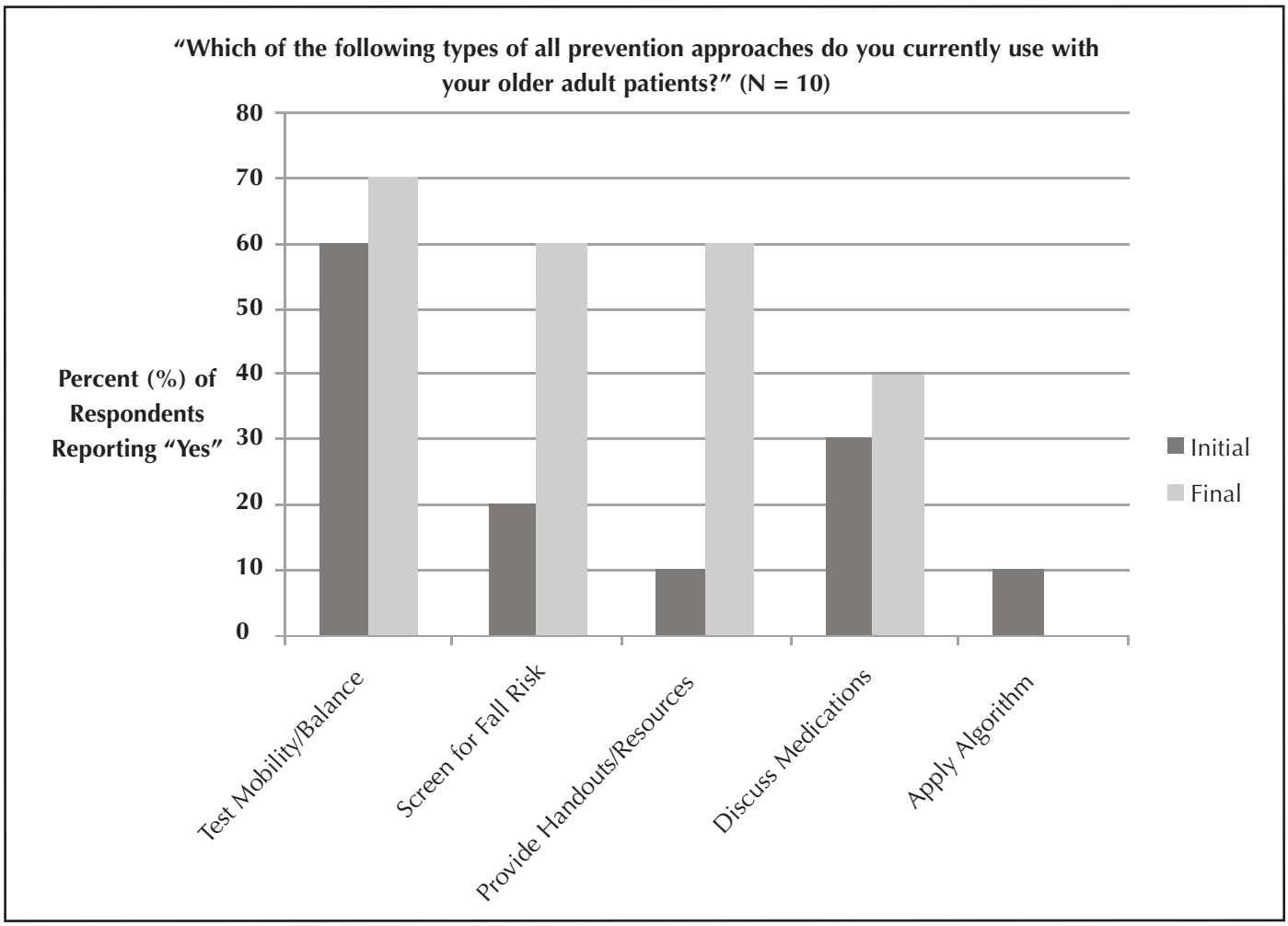
Figure 1. Evaluation steps



After completing an initial survey and applying the package over 4 - 6 weeks, the physicians participated in in-depth phone interviews and provided a follow-up telephone survey (Figure 1). Participants were asked if they found the information in the PCFP package helpful, what suggestions (if any) they had for improving the package, and whether there were any additional topics they would like to see covered, either in the existing materials or in a supplementary resource.

Findings from the evaluation revealed that overall, participants' awareness of falls among seniors improved

Figure 2. Use of Fall Prevention Approaches



significantly as a result of reviewing the fall prevention materials. In addition, after receiving the PCFP package, several participants made practice changes to help reduce the risk of falls (Figure 2). All participants indicated that they would recommend the fall prevention package to other family physicians as well as non-physician primary care providers.[19]

Participants who reviewed the fact sheets said that they provided good information and increased and/or reinforced physicians' knowledge of falls, but suggested that reducing the number of fact sheets may be beneficial. Participants who reviewed the video reported that it had a professional look, and was clear and informative, helpful, and a good length. Suggestions for improvement included streamlining the information on-line and including full demonstrations of the three balance and gait tests. Examples of quotes from evaluation respondents included the following:

> "The fact sheets are very helpful and provide information about a wide variety of topics in one spot. They are good to have when I need to approach patients who are at risk of falling."
>
> "Seniors are often prescribed medications which are inappropriate because of their age, their disease state or drug/drug interactions. The importance of medications in falls needs to be emphasized more, and the medication list needs to be a bigger feature in the package."
>
> "Using the [balance and mobility] tests shows us and patients that they have issues related to falls. Patients find it motivating if they are told they don't meet the average."

Participants felt that the resources designed for patients could be used to start conversations with patients regarding their risk of falling; reinforce concepts discussed with either the physician or an allied health professional (such as a physiotherapist); and serve as a resource for seniors regarding fall risks and prevention strategies. Suggestions for additional resources were identified, such as a handout on assistive devices and a poster on fall prevention.

Findings from the evaluation resulted in immediate revisions and will inform future improvements to the PCFP package, with a focus on components that are most useful for incorporating fall prevention into routine practice.

Dissemination

A dissemination plan was developed based on information gathered from the planning phase, the evaluation, and from a scan of current structures and programs in BC to support family physicians. It consists of four components: 1) increasing awareness of the existence of the PCFP Multimedia Package; 2) increasing awareness among primary care providers of the contents of the package; 3) encouraging use of the materials in the package as well as fall prevention approaches in general; and 4) incorporating the PCFP package into the development and maintenance of fall prevention programs for seniors throughout BC. This work is on-going in partnership with physicians and other primary care providers. To support this plan, the PCFP resources are made publicly available at the GPSC Chronic Disease Management website under the following two links:

Written resources:

www.gpscbc.ca/psp-learning/chronic-disease-management/tools-resources

Primary care fall prevention video (11 minutes):

www.gpscbc.ca/psp-learning/clinical-management/videos-chronic-disease-management-cdm

Conclusion

There is a need for standardized interventions designed for primary care providers to avoid missed opportunities to reduce the risk of falls and fractures among seniors. Physicians and other primary care providers often interact with older patients who have experienced a fall or fall-related event and are therefore well placed to play an important role in influencing health behaviors through increasing awareness about reducing their risk of fall and related injuries. Effective fall prevention involves not only tailoring interventions for older adults, but also tailoring resources and training for ease of access and application by specific health care professionals. The PCFP package is an evidence-based fall prevention resource specifically targeted for primary care providers to incorporate fall prevention into routine care.

References

1. Wagner EH, LaCroix AZ, Grothaus L, et al. Preventing disability and falls in older adults: a population-based randomized trial. *American Journal of Public Health*. 1994; 84(11):1800-6.
2. Statistics Canada: Population estimates and projections. Accessed July 10, 2012 at *www.statcan.gc.ca*.
3. SMARTRISK. The economic burden of injury in Canada. Toronto: SMARTRISK. 2009.
4. American Geriatrics Society, British Geriatrics Society & American Academy of Orthopedic Surgeons Panel on Falls Prevention: Guideline for the prevention of falls in older persons. *J Am Geriatr Soc.* 2010;49:664–72. Accessed March 12, 2010 at *www.americangeriatrics.org/education/prevention_of_falls.shtml*.
5. Cameron ID, Murray GR, Gillespie LD, et al. Interventions for preventing falls in older people in nursing care facilities and hospitals. *Cochrane Database of Systematic Reviews.* 2010; Issue 1. Art. No.: CD005465. DOI: 10.1002/14651858.CD005465.

pub2.
6. Gillespie LD, Robertson MC, Gillespie WJ, et al. Interventions for preventing falls in older people living in the community. *Cochrane Database of Systematic Reviews.* 2009; Issue 2. Art. No.: CD007146. DOI: *10.1002/14651858.CD007146.pub2*.
7. Scott V, Wagar B, Sum A, et al. A public health approach to fall prevention among older persons in Canada. *Clinics in Geriatric Medicine.* 2010; 26:705-718.
8. Registered Nurses' Association of Ontario. Prevention of Falls and Fall Injuries in the Older Adult 2005. Canada: Registered Nurses' Association of Ontario; 2012.
9. National Institute for Clinical Excellence (NICE). Clinical practice guideline for the assessment and prevention of falls in older people. London: Royal College of Nursing; 2004.
10. American Medical Directors Association. Falls and fall risk: Clinical practice guideline, 2003. Accessed July 23, 2012 at *www.amda.com/tools/cpg/falls.cfm*.
11. Salter AE, Khan KM, Donaldson MG, et al. Community-dwelling seniors who present to the emergency department with a fall do not receive Guideline care and their fall risk profile worsens significantly: a 6-month prospective study. *Osteoporosis Int.* 2006;17:672-683.
12. Fixsen D, Scott V, Blase K, et al. When evidence is not enough: The challenge of implementing fall prevention strategies. *Journal of Safety Research.* 2011; 42:419-422.
13. Tinetti ME, Gordon C, Sogolow E, et al. Fall-risk evaluation and management: Challenges in adopting geriatric care policies. *The Gerontologist.* 2006; 46(6):717-725.
14. Jones TS, Ghosh TS, Hom K, et al. Primary care physicians perceptions and practices regarding fall prevention in adult's 65 years and older. *Accident Analysis & Prevention*. 2011; 43(5):1605-1609.
15. Stenberg M, Wann-Hansson C. Health care professionals' attitudes and compliance to clinical practice guidelines to prevent falls and fall injuries. *Worldviews on Evidence-Based Nursing*. 2011; 8(2):87-95.
16. British Columbia Ministry of Health. Accessed on April 3, 2013 at *www.gov.bc.ca/health*.
17. Centre of Excellence on Mobility, Fall Prevention and Injury in Aging (CEMFIA). Fall Prevention. Accessed on September 30, 2012 at *www.hiphealth.ca/our_research/research-programs/cemfia/cemfia*.
18. General Practice Services Committee (GPSC). FP Incentive Program. Accessed on September 30, 2012 at *www.gpscbc.ca*.
19. General Practice Services Committee (GPSC). Practice Support Program (PSP). Accessed on September 30, 2012 at *www.gpscbc.ca/psp/practice-support-program*.
20. British Columbia Medical Association (BCMA). Accessed on September 30, 2012 at *www.bcma.org*.
21. British Columbia Injury Research and Prevention Unit (BCIRPU). Fall Prevention. Accessed on September 30, 2012 at *www.injuryresearch.bc.ca*.
22. Vivrette RL, Rubenstein LZ, Martin JL, et al. Development of a fall-risk self-assessment for community-dwelling seniors. *Journal of Aging and Physical Activity.* 2011; 19(1):16–29.
23. Scott V, Votova K, Scanlan A, Close J. Multifactorial and functional mobility assessment tools for fall risk among older adults in community, home-support, long-term and acute care settings. *Age and Ageing*. 2007; 36:130–139.
24. Schoene D, Wu S, Mikolaizak SA, et al. Discriminative ability and predictive validity of the Timed Up and Go test in identifying older people who fall: Systematic review and meta-analysis. *Journal of the American Geriatrics Society.* 2013; 61:202–208.
25. Buatois S, Miljkovic D, Manckoundia P, et al. Five-Times-Sit-to-Stand test is a predictor of recurrent falls in healthy community-living subjects aged 65 and older. *Journal of American Geriatrics Society.* 2008; 56:1575–1577.
26. Jonsson E, Seiger A, Hirschfeld H. Postural steadiness and weight distribution during tandem stance in healthy young and elderly adults. *Clinical Biomechanics*. 2005; 20(2):202-208.
27. Miller J, Hollander M. Primary Care Fall Prevention Multimedia Package Evaluation and Dissemination Project Report. 2012; unpublished.

Falls

Bruce Finke, MD, Nashville Area Elder Health Consultant, Northampton, Massachusetts; and Nancy Bill, MPH, IHS Injury Prevention Program Manager, Rockville, Maryland

An Overview of the Problem

Falls in the elderly are a major problem, for individual older adults and for the public health. One in three adults 65 and older falls each year.[1] Approximately 20% - 30% of these falls result in serious injuries such as fractures and brain injuries, and the rates of fall-related deaths among older adults have risen significantly over the past decade.[2] In fact, falls are the most common causes of nonfatal injuries and hospital admissions for trauma, and the leading cause of injury deaths among older adults.[2,3] Older adults are hospitalized for fall-related injuries five times more often than they are for injuries from all other causes.[4] (See Figure A1: Non-fatal fall-related injury hospitalizations, US, 2008.)[5]

The impact of falling goes beyond the risk of injury. A fear of falling can cause older adults to limit their activities, reducing their physical fitness and ability to get around and actually increasing their risk of falling.[2] Older adults are right to fear falling. Falls often lead to a loss of independence, nursing home admissions, disability, and reduced quality of life for older adults.[1] About 90% of hip fractures are caused by falls.[2,6] After a hip fracture, half of older adults can no longer care for themselves, and a quarter die within a year of the injury.[7]

Falls and fall-related injury have a large impact on health care utilization and costs. For every older adult who dies from a fall-related injury, there are 56 hospitalizations and 194 visits to emergency rooms and physicians' offices.[8] Most fractures among older adults are caused by falls. In 2000, the total direct cost of all fall injuries for people 65 and older was over $19 billion. The financial toll of falls will rise as the population ages, and may reach $55 billion by 2020. The average health care cost of a fall injury among adults 72 years and older is $19,440 (including hospital, nursing home, emergency room, and other health care, but not doctors' services).[4]

The increase in falls and fall-related injury reflects the welcomed increase in the number of older adults living in the community, a consequence of the aging of the baby-boomer generation and increased longevity. However, the risk of being seriously injured in a fall increases with age: nearly 85% of deaths from falls are among people 75 and older.[2]

What about Indian Country?

While the picture we have from data on older American Indians and Alaska Natives (AI/AN) is incomplete, what we know suggests that falls and fall-related injury are major problems in Indian Country as well.

Between 1991 - 1993 and 2005 - 2007, unintentional fall death rates for AI/AN adults 65 and older rose 51%, from 18.3 per 100,000 to 27.6 per 100,000.[5] Falls are the leading cause of unintentional injury deaths for older AI/AN adults, and accounted for one third of those deaths in 2005 - 2007.[5] Outpatient visits for falls in this age group rose from 7,550 in 2005 to 9,099 in 2008, a 21% increase over 3 years.[9] Among Alaska Natives age 60 and older (1991 - 2003), falls accounted for 77% of all injury hospitalizations.[10]

So while the data may be limited, it is clear that falls and fall-related injury are increasing among older American Indians and Alaska Natives and that these injuries cause extensive suffering and use scarce resources.

In early 2010 the IHS Injury Prevention Program and the IHS Elder Health Consultant formed a workgroup to address this issue. The aim of this work group was to develop a holistic approach to preventing falls and injury in older American Indians and Alaska Natives living in the community, based on the best available evidence for effective public health and clinical interventions. The Injury Prevention and Healthy Aging programs of the Centers for Disease Prevention and Control (CDC) were instrumental in this effort, providing both expertise and funding. The approach developed by that workgroup was sent for widespread review and discussion by stakeholders and program staff throughout Indian Country, and this article represents a summation of that work.

Unintentional fall prevention in elders 65 years of age and older is one of the priorities of the IHS Injury Prevention Program. Since 2010 the Indian Health Service Injury Prevention Program has provided funding to support fall prevention programs at 19 tribal sites (see Table 1). The tribal fall prevention programs include strength and balance exercises (tai chi); medication review; home assessments, and other key measures to prevent falls to elders. The IHS Injury Prevention Program uses the evidence-based guidelines derived from CDC and United States Prevention Services Task Force recommendations to support the fall prevention initiative.

Fall injury prevention requires a broad approach that truly integrates the clinic and the community, and the approach outlined below builds on the best available evidence for fall prevention in both the community and clinical settings.

Evidence-based Guidelines for the Prevention of Falls and Fall-Related Injuries in Older American Indians and Alaska Natives Living in the Community

The current falls literature is extensive and complex. Fortunately there are several authoritative sources for

evidence-based guidelines for effective interventions, based on extensive reviews of the scientific literature, and developed by leading national and international experts.

Public health and community-based interventions are evaluated, and effective strategies are summarized in two CDC publications:

- Preventing Falls: How to Develop Community-based Fall Prevention Program for Older Adults (2008)
- Preventing Falls: What Works: A CDC Compendium of Effective Community-based Interventions from Around the World, 2nd Ed (2010)

Both resources are found at: *http://www.cdc.gov/HomeandRecreationalSafety/Falls/pubs.html*

Clinical Guidelines and Recommendations have been developed by the United States Preventive Services Task Force (USPSTF) and the American and British Geriatrics Societies. The USPSTF released recommendations in May 2012 for the *Prevention of Falls in Community-Dwelling Older Adults*, which can be found at: *http://www.uspreventiveservicestaskforce.org/uspstf/uspsfalls.htm*

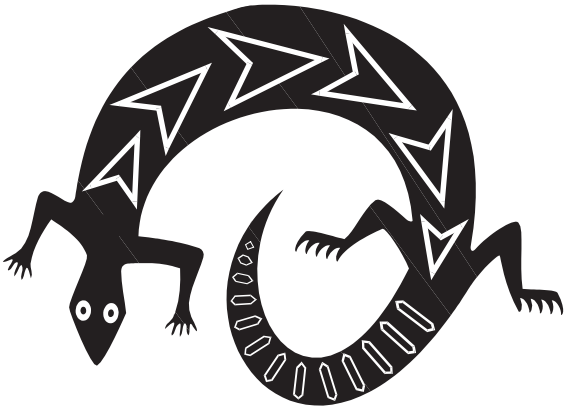
The American Geriatrics Society and British Geriatrics Society published evidence-based clinical guidelines for the prevention of falls in the elderly, the *2010 AGS/BGS Clinical Practice Guideline: Prevention of Falls in Older Person*, which is available at: *www.americangeriatrics.org/health_care_professionals/clinical_practice/clinical_guidelines_recommendations/2010/* .

The recommendations in the following tables are based on these resources.[11-14]

Additional resources are available from the CDC at their STEADI (Stopping Elderly Accidents, Deaths, & Injuries) website at *http://www.cdc.gov/homeandrecreationalsafety/Falls/steadi/index.html*

Guidelines for the Prevention of Fall-related Injury in Older American Indians and Alaska Natives Living in the Community	
Community-Based	***Clinical Settings***
The 5 main building blocks of an effective community-based prevention program are: 1. **Education** about falls and fall risk factors. 2. **Exercises** that improve mobility, strength, and balance, and that are taught by trained, nationally certified exercise instructors or physical therapists. 3. **Medication review** to identify side effects or drug interactions that may contribute to falls. The reviews should be conducted by pharmacists or qualified health care providers. 4. **Vision exams** by trained health care professionals with vision correction by an optometrist or ophthalmologist. 5. **Home safety assessment and home modification** by occupational therapists or other health care professionals with specialized training, to identify and modify home hazards that can increase older adults risk of falling.	There is evidence to support the following interventions to prevent falls in adults age 65 and older at increased risk for falls: 1. **Exercise or physical therapy** 2. **Vitamin D supplementation** 3. **Multifactorial risk assessment with comprehensive management of identified risks**, while not universally recommended, should be available and offered to certain individuals based on the circumstances of prior falls, medical comorbidities, and patient values. The multifactorial fall risk assessment should be performed by a clinician (or clinicians) with appropriate skills and training. The multifactorial fall risk assessment should include 1. **Focused History** including history of falls, medication review, and history of relevant risk factors. 2. **Physical Exam** including assessment of gait, balance, mobility, and lower extremity function, examination of neurologic function, muscle strength, cardiovascular status, feet and footwear, and assessment of visual acuity. 3. **Functional Assessment** including activities of daily living, use of assistive devices or mobility aids (e.g. reachers, canes, walkers), and perceived functional ability and fear related to falling. 4. **Environmental Assessment** including home safety. The multi-factorial fall risk assessment should be followed by direct interventions tailored to the identified risk factors, coupled with an appropriate exercise program.

Screening	
Community-Based	***Clinical***
Community-based recommendations provide guidelines for evidence-based practices that can be implemented for generally healthy older adults aged 65 or older without regard for specific risk factors. In general, community-based interventions can be provided without pre-screening. Community-based programs do provide valuable opportunities for screening and identification of older adults at increased risk for fall. The screening process outlined in the Clinical Guidelines can be initiated by or through community-based programs, with referral of those identified as at increased risk for fall.	Clinical guidelines are based on an individual *determination of increased risk for falls in persons aged* 65 and older. All older individuals should be asked whether they have fallen (in the past year). Older persons presenting with a single fall should be evaluated for gait and balance. Older individuals should be asked if they experience difficulties with walking or balance. An older person who reports a fall should be asked about the frequency and circumstances of the fall(s). Older persons who have difficulty or demonstrate unsteadiness during the evaluation of gait and balance require a multifactorial fall risk assessment. Older persons who present for medical attention because of a fall, report recurrent falls in the past year, or report difficulties in walking or balance (with or without activity curtailment) should have a multifactorial fall risk assessment. Older persons reporting only a single fall and reporting or demonstrating no difficulty or unsteadiness during the evaluation of gait and balance do not require a fall risk assessment.



Exercise	
Community-Based	***Clinical***
Progressive exercise programs improve mobility, strength, and balance. Among older adults, strength and balance exercises, such as Tai Chi, can reduce falls by improving mobility, strength, and balance. These programs focus on exercises that are specifically designed or adapted for older adults. Exercise programs can be offered in a community setting, at home with supervision, or in a program that combines group classes or one-on-one training with home-based exercise. Appropriate types of exercises that effectively reduce falls in older adults include Tai Chi and strengthening exercises combined with balance training	As a single intervention, all older adults who are at risk of falling should be offered an exercise program incorporating balance, gait, and strength training. Flexibility and endurance training should also be offered, but not as sole components of the program. Exercise should be included as a component of multifactorial interventions for fall prevention in community-residing older persons. An exercise program that targets strength, gait, and balance, such as Tai Chi or physical therapy, is recommended as an effective intervention to reduce falls. Exercise may be performed in groups or as individual (home) exercises, as both are effective in preventing falls. Exercise programs should take into account the physical capabilities and health profile of the older person, (i.e., be tailored) and be prescribed by qualified health professionals or fitness instructors. The exercise program should include regular review, progression, and adjustment of the exercise prescription as appropriate.

Education	
Community-Based	***Clinical***
While education alone has not proven to effectively reduce falls among older adults, it is typically combined with one of the other building blocks. Education includes older adult fall risk factors and prevention strategies for older adults, families, and caregivers. Information can be communicated on an individual, one-on-one basis, or in a group setting.	Multifactorial/multicomponent intervention should include an education component complementing and addressing issues specific to the intervention being provided, tailored to individual cognitive function and language. Education should not be provided as a single intervention to reduce falls in older persons living in the community.

Medications	
Community-Based	***Clinical***
Medication review should be conducted by a pharmacist or qualified health care professional, with medication adjusted or modified by their primary care provider or team or specialty providers	The multifactorial fall risk assessment should include a medication review, addressing all prescribed and over-the-counter medications with dosages Psychoactive medications (including sedative hypnotics, anxiolytics, antidepressants) and antipsychotics (including new antidepressants or antipsychotics) should be minimized or withdrawn, with appropriate tapering if indicated. A reduction in the total number of medications or dose of individual medications should be pursued. All medications should be reviewed, and minimized or withdrawn. As a single intervention or as part of a mulitfactorial intervention, Vitamin D supplements of at least 800 IU per day should be considered for people with suspected vitamin D deficiency or who are otherwise at increased risk for falls.

Vision	
Community-Based	***Clinical***
Vision exams by trained health care professionals with vision correction by an optometrist or ophthalmologist The multifactorial fall risk assessment should include assessment of visual acuity	As part of a multifactorial intervention, in older women in whom cataract surgery is indicated, surgery should be expedited as it reduces the risk of falling. There is insufficient evidence to recommend for or against the inclusion of other vision interventions within multifactorial fall prevention interventions. There is insufficient evidence to recommend vision assessment and intervention as a single intervention for the purpose of reducing falls. An older person should be advised not to wear multifocal lenses while walking, particularly on stairs.

Home Safety Assessment and Modifications	
Community-Based	***Clinical***
Home safety assessment and home modification by occupational therapists or other health care professionals with specialized training, to identify and modify home hazards that can increase older adults risk of falling.	Environmental assessment including home safety is part of the multifactorial risk assessment for older persons who are at increased risk of falls. A multifactorial intervention should include mitigation of identified hazards in the home, and evaluation and interventions to promote the safe performance of daily activities.

References

1. Stevens JA, Noonan RK, Rubenstein LZ. Older adult fall prevention: perceptions, beliefs, and behaviors. *Am J Lifestyle Medicine*. 2010;4(1):16-20.
2. CDC: Falls among older adults: An overview. Accessed June 7, 2010 at *http://cdc.gov/HomeandRecreational Safety/Falls/index-fs.html*.
3. ISW4: Injury Surveillance Workgroup on Falls, Consensus Recommendations for Surveillance of Falls and Fall-Related Injuries. Atlanta (GA): State and Territorial Injury Prevention Directors Association, 2006.
4. CDC: Costs of falls among older adults. Accessed June 7, 2010 at *http://cdc.gov/HomeandRecreationalSafety/ Falls/index-fs.html*.
5. CDC WISQARS. Accessed June 3, 2010 at *www.cdc.gov/injury/wisqars*.
6. Stevens JA, Olson S. Reducing falls and resulting hip fractures among older women. *MMWR*. 2000; 49 (RR-2): 3-12.
7. CDC: Hip fractures among older adults. Accessed June 7, 2010 at *http://cdc.gov/HomeandRecreationalSafety/ Falls/index-fs.html* .
8. Finkelstein EA, Corso PS, Miller TR. *The Incidence and Economic Burden of Injuries in the United States*. New York Oxford University Press, 2006.
9. Notifiable Diseases E-Coded Injuries (NDECI) data mart inquiry, June 2010.
10. Alaska Native Injury Atlas of Mortality and Morbidity. Alaska Native Tribal Health Consortium, January, 2008.
11. Preventing Falls: How to Develop Community-based Fall Prevention Program for Older Adults (2008), accessed June 20, 2013 at *http://www.cdc.gov/Homeand RecreationalSafety/Falls/pubs.html*.
12. Preventing Falls: What Works: A CDC Compendium of Effective Community-based Interventions from Around the World, 2nd Ed (2010), accessed June 20, 2013 at *http://www.cdc.gov/HomeandRecreational Safety/Falls/pubs.html*.
13. US Preventive Services Task Force (USPSTF) for the *Prevention of Falls in Community-Dwelling Older Adults*, accessed June 20, 2013 at *http://www.us preventiveservicestaskforce.org/uspstf/uspsfalls.htm*.
14. AGS/BGS Clinical Practice Guideline: Prevention of Falls in Older Person accessed June 20, 2013 at *www.americangeriatrics.org/health_care_profession als/clinical_practice/clinical_guidelines_recommend ations/2010/*.

With acknowledgement for the hard work of the workgroup members:

Delores Becenti *
Nancy Bill
Susan Ducore*
Clint Krestel
Darcy Merchant
Lisa Nakagewa
Garrett Sims
Siona Willie
Theresa Yazzie
Larry Berger*
Holly Billie*
Bruce Finke
Joe Law
Maggie Moore
Antonita Nunes
Cathy Stueckemann
Cheryl Willis

*Subgroup Leads.

Injury Prevention Programs funded by the

Tribal Injury Prevention Cooperative Agreement Program (TIPCAP)

Tribe	Activities	Contact	Email
Bad River Band of Lake Superior Tribe of Chippewa Indians	Data, home assessments, home enhancement projects; medication review.	Luis Salas	nnaha@ badriverhealthservices.com
Bristol Bay Health Corporation	Data, home assessment, home enhancements, exercise, medicine review, ice cleats distribution.	Mary Clark	mclark@bbahc.org
California Rural Indian Health Board, Inc.	Newsletter, toolkit, resources, tai chi instructor.	Julie Adams	Julie.Adams@crihb.net
Colorado River Indian Tribes	Data, home assessments, exercise, medication review, optometry.	Jaymee Moore	jamee.moore@crit-dhs.org
Fond du Lac Band of Lake Superior Chippewa	Data, home assessments, home enhancements, exercise, community events.	KaRee Lockling	KareeLockling@fdlrez.com
Gila River Indian Community	Data, home assessments, medication review, exercise (Matter of Balance trainers).	Verena Jackson	verena.jackson@gric.nsn.us
Hardrock Council on Substance Abuse, Inc.	Data, home assessment, home enhancements (AlertOne Program), exercise, medicine review, community education.	Mary Robertson-Begay	mbegay523@yahoo.com
Hualapai Tribe	Data, elder focus group, home assessment, home modifications, exercise (tai chi, Matter of Balance), Collaboration with diabetes program, PHN, Fire Department, others.	Lyndee Hornell	lhornell@ymail.com
Kaw Nation	Fall Prevention Seminars, home assessments, home enhancements, fire and home safety.	Tabatha Harris	tharris@kawnation.com
Kiowa Tribe of Oklahoma	Data, home safety assessments, home enhancements, education prescription medicine, exercise.	Melody Redbird-Post	melodyredbird@gmail.com
Maniilaq Association	Ice cleats distribution, community education.	Donald Fancher, Jr	Donald.fancher@maniilaq.org
Menominee Indian Tribe of Wisconsin	Data, exercise classes, coalition, collaborate Senior Centers, Home Health Aide training	Alan Tomow	atomow@mitw.org
Northwest Washington Indian Health Board	Presentations on Fall Prevention	Gloria Point	Gloria@indianhealthboard.org
Norton Sound Health Corporation	Data, collaborate with hospital for Elder Services Clinic, strength and balance assessments, eye exams, medication review, home safety checks, distribute ice cleats.	Kendra Nichols-Takak	ktaka@nshcorp.org
Oneida Tribe of Indians of Wisconsin	Data, medication reviews, fitness activity (Walking Strong, PACE, elder incentive), balance and gait assessments, pre/post programs.	Jennifer Jordan	Jjordan4@oneidanation.org
Pueblo of Jemez	Data, home safety assessments, referrals for at risk elders, home safety modifications, community education.	Maria Benton	mabento@jemezpueblo.us
Pueblo of San Felipe	Data, home assessments, home modifications, patient screening and treatment, partnerships with community groups.	Karen Ansera	kansera@sfpueblo.com

Tribe	Activities	Contact	Email
Quechan Tribe	Data, home assessments, exercise, medication review	Lisa Aguerro	l.aquero@ quechanindiantribe.com
Reno-Sparks Indian Colony	Data, Gait/balance assessments, exercise (12 weeks tai chi), home assessments, home enhancements, clinical evaluation.	Carrie Brown	cbrown@rsicclinic.org
Sisesseton Wahpeton Oyate	Collaboration with Elder Board, Public Health Nurse, Community Health Representatives and other key stakeholders, conduct elder survey.	Shannon White	Shannon.white@ihs.gov
Southeast Alaska Health Corporation	Data, home assessments, education (digital stories), partnerships with stakeholders, advocate at state level for fall prevention programs.	Corynna Welsh	cwelsh@searhc.org
Absentee Shawnee Tribe of Oklahoma, Inc.	Data, home-at-risk assessments, collaboration with Community Health Nurses.	Sacha Almanza	salmanza@astribe.com
Tuba City Regional Health Care Corporation	Data, collaboration with Senior Centers, home assessments, exercise (Physical Therapist), Ophthalmologist, medication review.	Jordan Begay	Jordan.begay@tchealth.org
Tule River Indian Health Center, Inc.	Data, home assessments, collaborate with senior services and CHRs, Diabetes weekly walks, community education.	Adrienna Gilbson	Adrianna.gibson@crihb.net

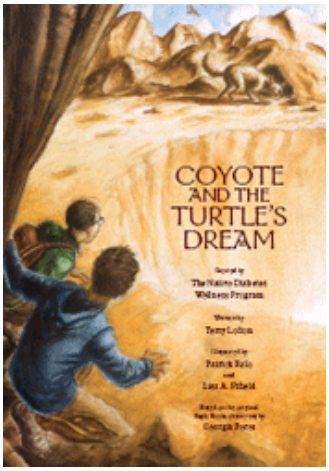
Print Version of *The Provider* Has Ceased Publication

The federal government is always exploring ways to reduce costs. One recent initiative is an effort to reduce printing expenses. For this reason, we have stopped publishing and distributing the print edition of *The Provider.*

We will continue to publish the monthly electronic edition of our journal to the CSC website. Currently, about 900 individuals are subscribers to the listserv that notifies them when each monthly issue is posted, and lists the contents of that issue. It is unknown how many readers simply access the website on a periodic basis without relying on the listserv for reminders that the monthly issue is available.

We encourage all our readers to subscribe to the listserv (go to *http://www.ihs.gov/provider/index.cfm?module =listserv)* so that you will receive monthly reminders about when the latest issue is posted to the website. This will also give us an improved count of the number of readers.

Dozens of free downloadable Eagle Books posters, games, crafts, flyers, event planning tools, family activities, animations, stationery, and other resources can be found in the Eagle Books Toolkit at the CDC's Native Diabetes Wellness Program site. The toolkit is a free online resource for Eagle Books activity sheets, displays, props, games, how-to instructions, and even more incentives to help educate your community about type 2 diabetes in a fun and entertaining way. Don't forget, the four original Eagle Books for young children and an Eagle Books adventure novel for middle school youth are still completely free for families and for programs serving American Indians and Alaska Natives. Order books at *http://wwwn.cdc.gov/pubs/diabetes.aspx*.



The Eagle Books

Inspired by the wisdom of traditional ways of health in tribal communities, the four original Eagle Books stories feature a colorful cast of animal characters and young children who explore the benefits of being physically active, eating healthy foods, and seeking the wisdom of elders regarding healthy living. In Coyote and the Turtle's Dream (2011), and the forthcoming Hummingbird Squash, the children are growing up and finding adventures with their middle school friends. Both sets of books are produced by CDC's Native Diabetes Wellness Program of the Division of Diabetes Translation in cooperation with the Tribal Leader Diabetes Committee and the IHS to broaden type 2 diabetes awareness and prevention.

Diabetes and Fall Injury Prevention: A Call to Action

Lawrence R. Berger, MD, MPH, Academic Director, IHS Injury Prevention Fellowship Program, and Clinical Assistant Professor of Pediatrics, University of New Mexico, Albuquerque, New Mexico; and Donald B. Williams Jr., REHS, MPH, Tucson Area Injury Prevention Specialist, CAPT, US Public Health Service, Indian Health Service, Tucson, Arizona

Introduction

An estimated 18.8 million adults in the US have been diagnosed with diabetes.[1] Among American Indian and Alaska Native (AI/AN) adults, the prevalence of diagnosed diabetes is 2.3 times that of non-Hispanic whites (16.1% vs. 7.1%; 2009).[1] In some AI/AN communities, diabetes rates exceed 60%.[2]

Persons with diabetes, especially older adults and individuals with long-standing diabetes, are at higher risk of falls and fall injuries.[3-8] In a study of elderly residents of a long-term care facility, for example, the fall incidence rate for the participants with and without diabetes was 78% and 30%, respectively ($p < .001$). The authors concluded that "diabetes mellitus is an independent fall risk factor among elderly nursing home residents. Gait and balance were the only other risk factors independently associated with increased risk of falls.[3]

Yet fall injury prevention is an aspect of comprehensive diabetes care that has been relatively neglected. For example, the topic is not listed in the table of contents of popular diabetes management educational materials[9-11] nor in well-recognized diabetes websites.[12-14]

In this article, we outline the risk factors contributing to the higher risk of fall injuries among individuals with diabetes and recommend strategies for incorporating fall prevention activities into the comprehensive care of adults with diabetes.

Fall Risk Factors Relevant to Diabetes

Medical conditions, physical and functional impairments, behavioral factors, medications, and environmental hazards contribute to the risk of falls and fall injuries. The risk of falling increases with the number of risk factors.[15] "Among a cohort of community-dwelling older adults, during one year of follow-up, the risk of falling increased from 8 percent for persons with no risk factor to 78 percent for persons with four or more risk factors."[16]

Diabetes and its complications are associated with many risk factors for fall injuries (Table 1). Despite its length, Table 1 is by no means a complete summary of all relevant factors. Older individuals, and those with long-standing diabetes, are likely to have more risk factors. However, even younger individuals with newly-diagnosed disease may receive more than four medications (polypharmacy), smoke cigarettes, be obese, and exhibit reduced sensation on a monofilament test for peripheral neuropathy, for example.

Medications and medication classes that are associated with falls and which are likely to be prescribed to individuals with diabetes are outlined in Table 2. Of course, the age of the patient, indications, dosage, concomitant medications, co-morbidities, possible adverse effects, and other factors are important in deciding whether to prescribe any medication for an individual patient.

Strategies to Promote Fall Injury Prevention Among Persons With Diabetes

Several current national IHS initiatives will undoubtedly contribute to reducing fall risks among AI/AN adults with diabetes. The IHS Working Group on Fall Injury Prevention is preparing a report that highlights both clinical and community-based effective strategies for fall injury prevention.[17] Still in its early stages, the IHS LEAP (Lower Extremity Amputation Prevention) program has joined the IHS Would Care Initiative, IHS Podiatry Services, and Veterans Administration to promote diabetes foot care, from prevention to comprehensive wound care.[18,19] The IHS Community Health Representatives (CHR) program has teamed up with the American Association of Diabetes Educators to provide a free, online diabetes certification program for CHRs. The six-module, self-paced program topics include diabetes care guidelines, physical activity, safety, and medication issues.[20]

To further reduce the likelihood of fall injuries among adults with diabetes, we recommend the following:

1. Promote frequent foot inspections, skilled foot examinations, and monofilament testing for the early detection and management of foot problems and peripheral neuropathy:
    a. Train outreach workers (ORWs), such as public health nurses and CHRs, to perform foot inspections and monofilament tests during home visits;
    b. Establish a system for ORWs to document their findings in the electronic health record;
    c. Collaborate with podiatrists to ensure that

abnormal screens receive appropriate follow-up and management.

2. Ensure that all patients "participate as actively as possible in a tailored physical activity program involving resistance training, balance exercises, and cardiovascular fitness training."[21]
   a. Incorporate specific activities (such as balance exercises and Tai chi) aimed at reducing fall risk into existing physical activity programs for persons with diabetes.
   b. Although not specifically aimed at persons with diabetes, an exercise program in New Zealand for persons 65 years and older resulted in a 35% reduction in falls with simple strength and balance training.[22-24]
3. Incorporate falls risk assessment criteria into medication management systems to reduce polypharmacy and the discretionary use of medications contributing to a higher risk of falls. In weighing risks and benefits, medication reviews should consider the number of medications, duplication of medication classes, drug-drug and drug-condition interactions, potentially inappropriate medications and dosages, and medications no-longer-indicated.
4. Ensure that every person with diabetes receives an annual comprehensive diabetes care visit, including the vision exam, medication review, and complete foot exam with monofilament test.
   a. Improve the rate of kept appointments for diabetes care through enhanced patient education, outreach services, and appointment reminder approaches.[25,26]
   b. Reduce the time burden on providers by instituting group educational classes and peer support meetings.[27,28]
5. At each scheduled primary care visit, providers should ask about previous falls; use standardized algorithms to assess falls risk and identify specific risk factors; and refer patients for appropriate clinical care (e.g., physical therapy assessment and management) and community services (e.g., home fall assessment and modifications, exercise classes).
6. Institute a coordinated approach to fall injury prevention through existing approaches to comprehensive care of persons with diabetes. These approaches include the Special Prevention of Diabetes Initiative, local elder care consortia, and Improving Patient Care Committees.[29] Table 3 is a list of potential stakeholders for such an effort.
7. Promote training in fall injury prevention for providers who treat individuals with diabetes:
   a. Providers include physicians, podiatrists, physician assistants, nurse practitioners, CHRs, PHNs, physical therapists, and exercise leaders.
   b. Create an inventory of educational resources including webinars, training videos, falls assessment tools, and patient education materials. Examples of current training resources are the CDC's STEADI program,[30] Q3 Aging video (a 30-minute video on falls prevention and mobility),[31] and the online resources described by Dr. Scott in this issue of the Provider.
8. Educate individuals with diabetes, their family members, and other caregivers regarding fall prevention:
   a. Tailor educational materials to address diabetes-specific risk factors as well as universal ones;
   b. Utilize multiple avenues for educational materials, such as digital videos and social media, in addition to traditional approaches, such as brochures and community presentations.
9. Promote research and improve data on diabetes and fall injury prevention:
   a. Develop evidence-based fall injury risk assessment tools and protocols tailored to individuals with diabetes.
   b. Evaluate the impact of interventions to reduce fall injuries among persons with diabetes
   c. Establish a surveillance system for falls and fall injuries among individuals with diabetes.[32]
   d. Monitor the administration and follow-up of monofilament testing as a measurable activity, rather than assuming it is universally performed as a component of a complete foot exam.
   e. Conduct cost analyses to clarify the burden of fall-related injuries and potential cost savings of fall prevention interventions compared to other health priorities among persons with diabetes.[33]
10. For older persons with diabetes, conduct a comprehensive geriatric assessment (CGA) at least annually, as recommended by the International Association of Gerontology and Geriatrics.[21] A CGA not only assess physical issues (e.g., gait and balance, medication management, nutritional status, hearing and vision, comorbidities), but also cognition, mental health (e.g., depression, alcohol/substance use), environmental factors (e.g., housing, finances, social support), and activities of daily living (e.g., bathing, dressing, eating, toileting).[34-37]

Conclusion

Categorical programs that target specific problems with effective interventions can be enormously effective. Since the inception of the SDPI, for example, there has been a 10.8% decrease in the mean hemoglobin A1C level of AI/ANs with diabetes. This translates to "an almost 40 percent reduction in diabetes-related complications."[38] IHS programs to reduce

lower extremity amputation rates through early identification and comprehensive management of foot problems have reduced amputation rates by 25 – 90%.[39-40] A concerted effort to reduce fall injury risks could prevent many serious injuries and improve the overall quality of life for American Indians and Alaska Natives with diabetes. An inventory of successful fall prevention initiatives for persons with diabetes within and outside the Indian Health Service would be a valuable starting point.

References

1. CDC National Diabetes Fact Sheet, 2011. Accessed June 9, 2013 at: *http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf*.
2. Bloomgarden ZT. Approaches to cardiovascular disease and its treatment. *Diabetes Care.* 2003;26 (12):3342-3348.
3. Maurer MS, Burcham J, Cheng H. Diabetes mellitus is associated with an increased risk of falls in elderly residents of a long-term care facility. *J Gerontol A Biol Sci Med Sci*. 2005. 60(9):1157-62.
4. Quandt SA, Stafford JM, Bell RA, et al. Predictors of falls in a multiethnic population of older rural adults with diabetes. *Journal of Gerontology: Medical Sciences*. 2006. 61A (4): 394–398.
5. Tinetti ME and Kumar C. The patient who falls: "It's always a trade-off." *JAMA*. 2010. 303(3):258-266.
6. Janghorbani M, Feskanich D, Willett WC, Hu F. Prospective study of diabetes and risk of hip fracture: the Nurses' Health Study. *Diabetes Care*. 2006;29(7):1573-8.
7. National Diabetes Education Program. Guiding Principles for Diabetes Care: For Health Care Professionals. April 2009. Accessed June 10, 2013 at: *http://ndep.nih.gov/media/GuidPrin_HC_Eng.pdf*.
8. Schwartz AV, Hillier TA, Sellmeyer DE, et al. Older women with diabetes have a higher risk of falls: a prospective study. *Diabetes Care.* 2002. 25:1749–1754.
9. Better Choices, Better Health™ - Diabetes Online Chronic Disease Self-Management Program. National Council on Aging. Accessed on June 10, 2013 at: *http://www.diabetesinmichigan.org/EdHandout/PDF/Diabetes%20Online%20program%20BCBH%209-23-11.pdf*.
10. Rostogi-Kalyani R and Margolis S. *Diabetes: Your Annual Guide to Prevention, Diagnosis, and Treatment*. The Johns Hopkins White Papers. Remedy Health Media. 2013.
11. *Diabetes A to Z: What You Need to Know about Diabetes – Simply Put*. American Diabetes Association. Alexandria, Virginia. 2010.
12. CDC: *Diabetes and Me*. Accessed June 10, 2013 at: *http://www.cdc.gov/diabetes/consumer/*.
13. American Diabetes Association. Living with Diabetes: Complications. Accessed June 10, 2013 at: *http://www.diabetes.org/living-with-diabetes/complications/*.
14. National Diabetes Education Program. Accessed June 20, 2013 at: *ndep.nih.gov*.
15. Tinetti ME, Speechley M, Ginter SF. Risk factors for falls among elderly persons living in the community. *N Engl J Med*. 1988;319:1701–7.
16. Rao SS. Prevention of falls in older patients. *Am Fam Physician*. 2005 Jul 1;72(01):81-88.
17. IHS Working Group on Fall Injury Prevention. Draft report. Unpublished.
18. Christine White, DPM, Gallup Indian Medical Center, *christine.white@ihs.gov*. Personal communication, June 18, 2013.
19. Lower Extremity Amputation Program (LEAP). USDHHS Health Resources and Services Administration. Accessed December 18, 2012 at: *http://www.hrsa.gov/hansensdisease/leap*.
20. American Association of Diabetes Educators. Fundamentals of diabetes care. Accessed on June 17, 2013 at: *https://www.diabeteseducator.org/ProfessionalResources/products/fundamentals.html*.
21. Sinclair A, Morley JE, Rodrigues-Mañas L, et al. Diabetes in older people: Position statement on behalf of the International Association of Gerontology and Geriatrics and the European Diabetes Working party for Older People, and the International Task Force of Experts in Diabetes. *J Am Med Directors Assoc*. 2012. 13(6):497-502.
22. CDC. Physical activity: Why strength training? Accessed June 15, 2013 at: *http://www.cdc.gov/physicalactivity/growingstronger/why/*.
23. CDC. Exercised-based interventions: The Otago exercise programme. Accessed on June 15, 2013 at: *http://www.cdc.gov/HomeandRecreationalSafety/Falls/compendium/1.2_otago.html*.
24. Campbell AJ and Robertson MC. Otago exercise programme to prevent falls in older adults. ACC 2007. Accessed on June 15, 2013 at: *http://www.acc.co.nz/PRD_EXT_CSMP/groups/external_providers/documents/publications_promotion/prd_ctrb118334*.pdf.
25. Lacy NL, Paulman A, Reuter MD, et al. Why we don't come: Patient perceptions on no-shows. *Annals of Family Medicine.* 2004. 2(6):541-545.
26. Macharia WM, Leon G, Rowe BH, et al. An overview of interventions to improve compliance with appointment keeping for medical services. *JAMA*. 1992;267(13):1813-17.
27. Neil Chesanow. Is Treating Diabetic Patients Throwing You Off Schedule? Here's Help. . Mar 14, 2013.

28. Wagner EH, Grothaus LC, Sandhu N, et al. Chronic care clinics for diabetes in primary care: a system-wide randomized trial. *Diabetes Care*. 2001;24:695-700.
29. IHS Improving Patience Care Resource Guide. February 2012. Accessed June 20, 2013 at: *http://www.ihs.gov/ipc/documents/IPC_Resource_Guide_v2.pdf*.
30. CDC National Center for Injury Prevention and Control. The Stopping Elderly Accidents, Deaths & Injuries" (STEADI) Tool Kit. Accessed June 19, 2013 at: *www.cdc.gov/injury/steadi*.
31. Caton C. Medical University of South Carolina: Q3 Aging. Falls and mobility in aging (video). September 2, 2009. Accessed June 8, 2013 at: *http://mcintranet.musc.edu/agingq3/residentlectures.htm#falls2*.
32. Injury Surveillance Workgroup on Falls Consensus Recommendations for Surveillance of Falls and Fall-Related Injuries. Atlanta (GA): State and Territorial Injury Prevention Directors Association. August 2006.
33. Finkelstein EA, Chen H, Miller TR, et al. A comparison of the case–control and case–crossover designs for estimating medical costs of nonfatal fall-related injuries among older Americans. Med Care. 2005;43(11):1087–1091.
34. Tufts. Comprehensive Geriatric Assessment. Accessed June 17, 2013 at: *ocw.tufts.edu/data/42/499797.pdf*.
35. Finke B. Preventive care guidelines for the elderly. *IHS Provider*. 2003. 28(5):103-5.
36. Palmer RM. Geriatric assessment. *Med Clin North Am*. 1999. 83(6):1503-23.
37. Shelkey M, Wallace M. Katz Index of Independence in Activities of Daily Living (ADL). Try This: Best practices in nursing care for older adults. Issue 2. 2012. Accessed June 17, 2013 at: *http://consultgerirn.org/uploads/File/trythis/try_this_2.pdf*.
38. IHS Diabetes Fact Sheet: Diabetes care and outcomes audit. Accessed on June 18, 2013 at: *http://www.ihs.gov/newsroom/factsheets/diabetes/*.
39. Rith-Najarian S, Dannels E, Acton K. Preventing amputations from diabetes mellitus: the Indian Health Service experience. *West Indian Med J*. 2001. 50 (Suppl 1):41-43.
40. Schraer C, Weaver D, Naylor JL, et al. Reduction of amputation rates among Alaska Natives with diabetes following the development of a high-risk foot program. *Int J Circumpolar Health.* 2004. 63 (Suppl 2);114-119.
41. Feldman EL. Epidemiology and classification of diabetic neuropathy. Up To Date February 15, 2012. Accessed June 13, 2013 at: *http://www.uptodate.com/contents/epidemiology-and-classification-of-diabetic-neuropathy*.
42. Powell MW, Carnegie DH, Burke TJ. Reversal of diabetic peripheral neuropathy with phototherapy decreases falls and the fear of falling and improves activities of daily living in seniors. *Age and Aging*. 2006; 35: 11–16.
43. Diabetic Neuropathies: A Statement by the American Diabetes Association. *Diabetes Care*. 2005. 28(4); 956-962.
44. Cavanagh PR, Derr JA, Ulbrecht JS, et al. Problems with gait and posture in neuropathic patients with insulin-dependent diabetes mellitus. *Diabetic Medicine*. 1992; 9:469-474.
45. Richardson JK, Ching C, Hurvitz EA. 1992. The relationship between electro-myographically documented peripheral neuropathy and falls. *Journal of the American Geriatric Society.* 1992;40:1008-1012.
46. Ivers RQ, Cummings RG, Mitchell P, Peduto AJ. Diabetes and risk of fracture: the Blue Mountains Eye Study. *Diabetes Care*. 2001; 24:1198–1203, 2001.
47. Agrawal Y, Platz EA, Niparko JK. Prevalence of hearing loss and differences by demographic characteristics among US adults: Data from the National Health and Nutrition Examination Survey, 1999-2004. *Arch Intern Med*. 2008;168(14):1522-1530.
48. Hearing loss linked to three-fold risk of falling. Johns Hopkins Medicine News and Publications. Accessed June 13, 2013 at: *http://www.hopkinsmedicine.org/news/media/releases/hearing_loss_linked_to_three_fold_risk_of_falling*.
49. Viljanen A, Kaprio J, Pyykkö I, et al. Hearing as a predictor of falls and postural balance in older female twins. *J Gerontol A Biol Sci Med Sci.* 2009 February; 64A(2): 312–317.
50. Huang ES, Basu A, Finch M, et al. The complexity of medication regimens and test ordering for patients with diabetes from 1995 to 2003. *Curr Med Res Opin*. 2007. 23(6):1423-30.
51. Grant RW, Devita NG, Singer DE, Meigs JB. Polypharmacy and medication adherence in patients with Type 2 diabetes. *Diabetes Care*. Accessed on June 9, 2013 at: *http://care.diabetesjournals.org/content/26/5/1408.long*.
52. Cosgrove M. A survey of the number of medications taken by patients 70 years of age and over with diabetes. *Br J Diabetes Vasc Dis*. 2003;3:361–3.
53. Cipolle RJ, Strand LM, Frakes MJ. Co-morbidities and drug therapy problems in patients with diabetes. Accessed June 9, 2013 at: *http://www.medsmanagement.com/pdf/Diabetes%20Manuscript.pdf*.
54. Good CB. Polypharmacy in elderly patients with diabetes. *Diabetes Spectrum*. 2002. 15(4): 240-248.

55. Berger LR, Correa O, Sims JG. Identifying polypharmacy among older adults using HIS National Data Warehouse data. *IHS Primary Care Provider*. 2010;35(10):238-241.
56. Sims JG, Berger LR, Krestel C, et al. Potentially inappropriate medications (PIMs) and falls risk in older American Indians and Alaska Native adults: A pilot study. *IHS Primary Care Provider*. 2011. 36(7):147-153.
57. Chang TT and Ganz DA. Quality indicators for falls and mobility problems in vulnerable elders. *JAGS*. 5S-S327-S334, 2007.
58. Wallace C, Reiber GE, LeMaster J, et al. Incidence of falls, risk factors for falls, and fall-related fractures in individuals with diabetes and a prior foot ulcer. *Diabetes Care.* 2002. 25(11):1983-6.
59. Berlie HD, Garwood CL. Diabetes medications related to an increased risk of falls and fall-related morbidity in the elderly. *Ann Pharmacother*. 2010. 44(4):712-7.
60. Healthy People 2020: 2012 US Renal Data System Annual Data Report, Volume 2: End Stage Renal Disease. Reference Table HP2020 CKD-9.1. Accessed June 9, 2013 at: *http://www.usrds.org/2012/pdf/v2_01hp_12*.pdf.
61. Amy L, Byers AL, Vittinghoff E, et al. Twenty-year depressive trajectories among older women. *Arch Gen Psychiatry.* 2012;69(10):1073-1079.
62. Morton DJ, et al: Smoking prevalence by diabetes status, AIAN in selected states, 1998-2003. *Am J Public Health*. 2008;98:560-65.
63. Egger P, Duggleby S, Hobbs R, et al. Cigarette smoking and bone mineral density in the elderly. *Journal of Epidemiology and Community Health.* 1996;50:47-50.
64. Cummings S, Nevitt M, Browner W, et al. Risk factors for hip fracture in white women: Study of osteoporotic fractures research group. *N Engl J Med*. 1995 332:767–773,
65. Stehman-Breen CO, Sherrard DJ, Astier M, et. Al. Risk factors for hip fracture among patients with end-stage renal disease. *Kidney Internation*al. 2000;58:2200–2205.
66. D'Arrigo T. Build your bones. People who have diabetes have a higher risk of bone density loss and fracture. Here's what you can do to keep your bones healthy and strong. *Diabetes Forecast*. 2006 Sep;59(9):62-5.
67. Prevalence of Overweight and Obesity Among Adults with Diagnosed Diabetes —- United States, 1988 - 1994 and 1999 - 2002. *MMWR*. November 19, 2004/53(45);1066-1068.
68. Himes CL, Reynolds SL. Effect of Obesity on Falls, Injury, and Disability. *JAGS*. 2012. 60(1):124-129.
69. Sennerby U, Melhus H, Gedeborg R, et al. Cardiovascular diseases and risk of hip fracture. *JAMA*. 2009; 302(15):1666-73.
70. National Diabetes Fact Sheet, 2011. *http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf*.
71. Nyberg L, Gustafson Y. Fall prediction index for patients in stroke rehabilitation. *Stroke*. 1997;28(4):716-721.
72. Ramnemark A, Nilsson M, Borssén B, Gustafson Y. Stroke, a major and increasing risk factor for femoral neck fracture. *Stroke*. 31:1572–1577, 2000.
73. Ohara T, et al. Glucose tolerance status and risk of dementia in the community: The Hisayama Study. *Neurology*. 2011; 77:1126–1134.
74. Agrawal Y, Carey JP, Della Santina CC, et al. Disorders of balance and vestibular function in US adults: Data from the National Health and Nutrition Examination Survey, 2001-2004. *Arch Intern Med.* 2009;169(10):938-944.
75. Riefkohl EZ, Bieber HL, Burlingame MB, Lowenthal DT. Medications and falls in the elderly: a review of the evidence and practical considerations. *P&T*. 2003. 28(11):724-726, 733.
76. Pharmacists can assist in falls prevention programs. Pharmacy News EU. 12/31/09. Accessed on June 11, 2013 at: *http://www.pharmacynews.eu/hospital-industry/hbqi-pharmacists-can-assist-in-fall-prevention-programs*.
77. St. John Medical Center, Tulsa, Oklahoma. Medication Review for Falls (2 pages). Accessed on June 11, 2013 at: *https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CCsQFjAA&url=http%3A%2F%2Fwww.ohiopha.org%2Fadmin%2Fuploads%2Fdocuments%2FMedication%2520Regimen%2520Review%25200510.doc&ei=jiC3UdrVIInEyQHh5IDwAg&usg=AFQjCNFlt55rechVRSJ1A164qLuIEqAPSA&sig2=oWkNsI2Cxx40nxpt1i1gfw&bvm=bv.47534661,d.aWc*.

Table 1. Fall Injury Risk Factors and Diabetes

Fall injury risk factor associated with diabetes and its complications	Comments
Peripheral neuropathy	• "Involvement of the peripheral and autonomic nervous systems is probably the most common complication of diabetes. [41] • Depending on the study, 20 - 100% of patients with diabetes develop peripheral neuropathy (PN), formally classified as chronic sensorimotor distal symmetric polyneuropathy[41-43] • PN can contribute to fall injury risk by impaired proprioception; loss of sensation in the feet leading to foot infections, foot ulcers, amputation; foot drop; pain; gait and balance difficulties. • Diabetic patients with PN were 15 times more likely to experience an injury while walking than matched controls[44] and 23 times more likely to report instability resulting in a fall or injury.[45]
Peripheral artery disease (PAD)	Poor circulation leads to foot disorders: ulceration, infection, amputation
Vision problems	• About 30% of adults over 40 years of age with diabetes have diabetic retinopathy.[1] • Patients with diabetes also are at higher risk of glaucoma, cataracts, and hypertensive retinopathy. • Both diabetic retinopathy and cataracts are associated with increased risk of fractures.[46]
Hearing loss	• The prevalence of hearing loss among people with diabetes is nearly double that of persons without the condition.[47] • "People with a mild (25-decibel) hearing loss were nearly three times more likely to have a history of falling. Every additional 10-decibels of hearing loss increased the chances of falling by 1.4 fold. [48] • Possible reasons: hearing loss might result in less awareness of the overall environment, making tripping and falling more likely; also, gait and balance may be impaired by the "cognitive load imposed by hearing loss.[48,49]
Hypertension	• 2/3 of adults with diabetes have hypertension.[1] • Raises the risk for heart attack, stroke, eye problems, and kidney disease.
Hypotension/orthostatic hypotension	Syncopal episodes.
Specific medications	See Table 2
Multiple medications (polypharmacy = 4 or more)	• Average is 4 - 13 medications per patient with diabetes.[50-54] • With increasing number of meds there is an increased likelihood of medication duplication, conflicts, adverse effects, and dose errors.[55,56] • Among AI/AN adults 65 and older, 43% had 4 or more prescriptions.[55] • Patients with diabetes ages 70 and older in a British general practice were taking an average of seven medications (range, zero to 17). The medications were prescribed for treatment of diabetes, vascular disease risk factors, and coexistent conditions.[52]

Balance and gait disorders	• Detectable gait abnormalities affect 20-40% of adults 65 years of age and older;[57] • In persons with diabetes, balance and gait disorders result from peripheral neuropathy, peripheral artery disease, foot disorders, stroke, adverse effects of medications, and other causes.
Foot disorders	• In a group of persons with diabetes and prior foot ulcers (average age 62), 32% had fixed foot deformities and 58% had insensate feet.[58] • 15% of patients with diabetes will develop foot ulcers during their lifetime; 5%-10% of patients who develop a diabetes foot ulcer will have a foot or lower limb amputation in their lifetime.[58]
Muscle weakness	May result from limited physical activity due to pain and chronic conditions (e.g., cardiac, renal); adverse effect of medications; and other causes.
Insulin use	Insulin use has been demonstrated to increase the risk of falls in the elderly. Possible mechanisms: hypoglycemia, "marker for disease severity and its complications of reduced balance, strength, and gait abnormalities. [59]
Hypoglycemia	Weakness, confusion, dizziness and other symptoms of hypoglycemia can lead to falls.
Hyperglycemia	Drowsiness, fatigue, blurred vision, difficulty concentrating
Nephropathy/kidney disease	• Incidence of end stage renal disease is 2.1 times higher in AI/AN vs. overall US population;[60] • Renal failure can lead to somnolence, leg pain, cognitive impairment; weakness, shortness of breath, heart rhythm disturbances, loss of appetite, fatigue; increased risk of adverse medication effects due to reduced renal clearance.
Nutritional inadequacies	Increased risk of fractures, muscle weakness
Depression	• People with diabetes are 2-3 times likely to suffer from depression.[1,61] • Fall risk due to anti-depressant medications, alcohol misuse, inattention, decreased physical activity.
Smoking	• Among AI/AN, smoking rates are 30% with diabetes and 19% without.[62] • Smoking may contribute to diminished bone mineral density,[63] and is associated with increased risk of hip fractures.[64,65] • Other impacts: vascular impairment (vision, micro-vascular disease), decreased immunity, increased heart and lung disorders, increased risk of peripheral neuropathy
Osteoporosis/ bone density loss	Increased risk of fractures after falling.[66]
Obesity	• In a CDC study of U.S. adults aged >20 years with diabetes in 1999-2002, 55% were obese (BMI >/=30 kg/m2).[67] • Obesity is associated with increased fall risk and increased likelihood of developing disability after a fall.[68] • Impaired balance, poorer control of blood glucose levels, decreased physical activity, and exacerbation of musculoskeletal pain likely contribute to falls risk.
Heart disease	• Adults with diabetes have heart disease mortality rates 2-4 times higher than adults without diabetes.[1,2] • The risk for cardiovascular in American Indian adults may be 3-8 times higher than in people without diabetes (Strong Heart Study).[2] • Fall risk due to weakness, medications, arrhythmias. • Cardiovascular diseases are associated with an increased hip fracture risk.[69]

Stroke	• Risk for stroke is 2 to 4 times higher among people with diabetes.[1,70] • Higher risk of falls post-stroke due to urinary incontinence, impaired postural stability, motor/cognitive/visual impairments, and use of diuretics, antidepressants, or sedatives.[71] • Stroke is associated with a higher risk of hip fractures.[72]
Chronic pain	• Common symptom of neuropathies. • Pain can alter mobility, increase fear of falling, decrease overall physical activity
Urinary frequency, nocturia, incontinence	Fall risk due to night-time trips to urinate, sitting/standing from toilet seat
Poor sleep	Resulting from medications, nocturia, anxiety
Cognitive impairment	• May result from medications, cerebrovascular disease, and other causes. • "Diabetes patients were 74% more likely to develop dementia of any type over 15 years of follow-up after adjustment for other confounding factors (P=0.004). [73]
Dizziness, light headedness, somnolence, confusion	• May result from polypharmacy, specific meds, hypoglycemia, hypotension, dehydration. • Dizziness can result from vestibular dysfunction, which is 70% more frequent in people with diabetes and carries up to a 12-fold increased risk of falling.[74]

Table 2. Medications and Medication Classes Likely to be Prescribed to Individuals with Diabetes and Its Complications Associated with an Increased Risk of Falls or Fall Injury

Insulin and insulin secretagogues (biguanides, sulfonylureas, thiazolidinediones): hypoglycemia risk

Anti-hypertensive medications: can cause orthostatic hypotension
• Diuretics: vertigo, frequent urination
• ACE-Inhibitors -
• Beta blockers -

OTC sleep medications, including **antihistamines**

Opioid analgesics: sedation, confusion, dizziness, cognitive impairment

Anticoagulants: risk of serious bleeding post-fall

Psychoactive meds:
• Benzodiazepines: impair balance, may cause CNS depression
• Tricyclic antidepressants: orthostatic hypotension, - anticholinergic and sedative effects; used to treat depression or neuropathic pain
• SSRIs: may induce hyponatremia, which can lead to delirium
• Sedatives

Class 1A anti-arrhythmics: association with falls may be due to medication effects or the underlying arrhythmias causing hypotension and light-headedness

Anticholinergics: dizziness, drowsiness, sedation, blurred vision, lightheadedness
• Urinary antispasmodics
• Gastrointestinal antispasmodics: treatment of diabetic diarrhea
• Anticonvulsants: used to treat pain due to diabetic neuropathy pain
• Antiemetics

Source: References 56,75-77.

Table 3. Diabetes and Fall Injury Prevention: Potential Partners

Tribal Agencies and Services: Department of Health Health promotion program CHR program Community health Medical and nursing staff Elder Care committee Senior services Behavioral health Social services Family assistance Transportation Diabetes program Special diabetes program Health education Housing	**IHS Area:** Diabetes consultant Injury prevention specialist Behavioral health Information technology **IHS locally:** Clinical staff: Clinical director, Chief Medical Officer, physicians, NPs, PAs, nursing, pharmacy, podiatry, optometry, physical therapy, occupational therapy Improving Patient Care (IPC) committee EHS/sanitarians Medical records/EHR IPC group Public health nursing Medical records Information Technology
IHS National: Diabetes Treatment and Prevention Special Diabetes Prevention Initiative (sp?) LEAP initiative Nursing CHR IHS/AADE CHR diabetes online certification program Other IHS national consultants: medicine, diabetes, optometry, podiatry	**State Departments of Health:** Injury prevention program Vital statistics Epidemiology Diabetes

Acknowledgements

Many persons contributed their time and expertise to help us better understand the links between diabetes and fall injury prevention. We are especially grateful to Drs. Ray Delisle and Martha DeVelasco, Dr. Peter Zeigler, LCDR Dolores Addison, Dr. Kendall Shumway, Cathy Stueckemann, Lorraine Valdez, Dr. Barbara Vize, Patricia Stevenson, Dr. Charles Rhodes, Shawnell Damon, Michael Rinaldi, Cheryl Peterson, Dr. Lisle Ignace, Delsen Liston, Jackie Kizer, Anita Brock, Dr. Ann Bullock, Dr. Christine White, Karla Hackett, and members of the Tohono O'odham Nation/IHS Elder Care Consortium.

Our Apologies

We apologize for the delay in the production of this issue. Constraints on funding at the end of the fiscal year made it impossible to complete the preparation of the issue until now. We will catch up with our usual monthly publishing schedule as soon as possible. We are currently accepting submissions for the September issue.

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.*

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*. (8/13)

Registered Dietitian
Consolidated Tribal Health Project, Inc.;
Calpella, California

Consolidated Tribal Health Project, Inc. is a 501(c)(3) non-profit, ambulatory health clinic that has served rural Mendocino County since 1984. CTHP is governed by a board comprised of delegates from a consortium of nine area tribes, eight of which are federally recognized, and one that is not. Eight of the tribes are Pomo and one is Cahto. The campus is situated on a five-acre parcel owned by the corporation; it is not on tribal land.

CTHP has a Title V Compact, which gives the clinic self-governance over our Indian Health Service funding allocation. An application for any of these positions is located at *www.cthp.org*. Send resume and application to Karla Tuttle, HR Generalist, PO Box 387, Calpella, California 95418; fax (707) 485-7837; telephone (707) 485-5115 (ext. 5613). (7/13)

Family Practice Physician
Jicarilla Service Unit; Dulce, New Mexico

The Jicarilla Service Unit (JSU) is a new, beautiful 65,000 square foot facility nestled in the mesas of northern New Mexico with views of the edge of the Colorado Rockies. We provide care to the Jicarilla ("Basket-maker") Apache community with a population of 4,400. Our clinic has an opening for a board certified/eligible family practice physician for purely outpatient care with a 40 hour work-week. Our site qualifies for IHS and state loan repayment programs. JSU has a fully functional electronic health record system. Our pharmacy has a robust formulary including TNF-alpha inhibitors and exenatide. The clinic also has an urgent care clinic for acute walk-in cases. Our staff currently consists of an internist, three family practice physicians, an optometrist, and three dentists. We also have a team of dedicated public health nurses who specialize in home visits for elders and prenatal follow-up. The Jicarilla Apache Nation is self-sufficient with revenues from oil and natural gas. Much has been invested in the infrastructure of the reservation, including a large fitness facility, a modern supermarket, a hotel and casino, and more. We are also located 45 minutes from the resort town of Pagosa Springs, which has year-round natural hot springs and winter skiing at renowned Wolf Creek Pass.

We welcome you to visit our facility in person. To take a video tour of the Nzh'o Na'ch'idle'ee Health Center online, go to *http://www.usphs.gov/Multimedia/VideoTours/Dulce/default.aspx*. Please call Dr. Cecilia Chao at (575) 759-3291 or (575) 759-7230; or e-mail *cecilia.chao@ihs.gov* if you have any questions. (4/13)

Hospitalist
Gallup Indian Medical Center; Gallup, New Mexico

Gallup Indian Medical Center (GIMC) is currently seeking energetic and collegial internists for our new hospitalist program. The hospitalists care for all adult inpatients previously taken care of by family medicine and internal medicine physicians, and provide consultation services. We have seven FTEs for hospitalists, and while we are still growing, we enjoy further inpatient staffing support

from internal medicine and family medicine.

GIMC is a 99-bed hospital in Gallup, New Mexico, on the border of the Navajo Reservation. Clinical specialties at GIMC include internal medicine, family medicine, critical care, cardiology, neurology, orthopedics, ENT, radiology, OB/GYN, general surgery, ophthalmology, pathology, pediatrics, emergency medicine, and anesthesiology. The hospitalists' daily census is approximately 25 - 30. There is a six bed ICU. Our patient population includes Navajos, Zunis, and others living nearby, as well referrals from smaller clinics and hospitals.

Gallup has a diverse community and is very livable, offering a thriving art scene, excellent outdoor activities (biking, hiking, rock climbing, cross-country skiing), safe neighborhoods, diverse restaurants, national chains and local shops, and multiple public and parochial school options. The medical community is highly collegial, is committed to continuing education, has an on-going collaboration with Brigham and Women's Hospital, and has a high retention rate.

For more information, contact Eileen Barrett, MD, at (505) 722-1577 or e-mail *eileen.barrett@ihs.gov*. Or please consider faxing your CV to (505) 726-8557. (2/13)

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 47th 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 mid-level providers, dedicated nurse case managers, and ancillary staff to deliver the highest quality, team based health care to an active user population of 2800 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! (2/13)

Pediatrician
Blackfeet Community Hospital; Browning, Montana

This hospital-based government practice is seeking a BC/BE pediatrician to work with another pediatrician and a pediatric nurse practitioner. Practice true primary care pediatrics with inpatient, outpatient, and newborn hospital care. Attractive call and rounding schedule. Competitive salary with federal government benefits. The area provides a wide variety of outdoor recreational activities, being only 12 miles from Glacier National Park. For more information, please contact Dr. Tom Herr at *thomas.herr@ihs.gov* or call (406) 338-6372. (1/13)

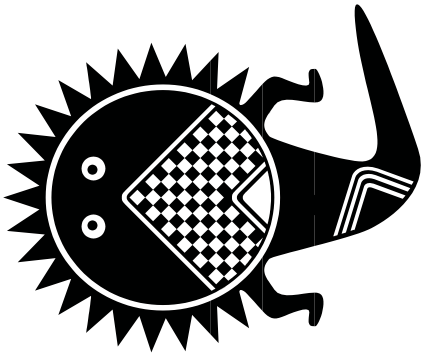
Director, Health and Human Services
Ysleta Del Sur Pueblo; El Paso, Texas

The Ysleta Del Sur Pueblo (YDSP) Health and Human Services Department is a team of health care professionals and staff fully committed to their patients' physical, emotional, and spiritual wellbeing, offering a comprehensive range of health and human services that ensure a safe environment, quality service, and accessible health care in an atmosphere of respect, dignity, professionalism, and cultural sensitivity.

YDSP's HHS department is seeking a Director. This person has responsibility and accountability for the development and implementation of a plan to bring HHS to an ongoing operating success. The Director will need the flexibility to make quick and efficient business decisions, while at the same time assuring that operations respect the broad guidelines and, more importantly, the service standards expected by tribal members and tribal leadership. To get more information or to apply, contact Jason S. Booth, CEO, Ishpi, Inc., telephone (651) 308-1023; or e-mail *jason@ishpi.biz*. (1/13)

Electronic Subscription Available

You can subscribe to *The Provider* electronically. Any reader can now request that he or she be notified by e-mail when the latest issue of *The Provider* is available on the Internet. To start your electronic subscription, simply go to *The Provider* website (*http://www.ihs.gov/Provider*). Click on the "subscribe" link; note that the e-mail address from which you are sending this is the e-mail address to which the electronic notifications will be sent. Do not type anything in the subject or message boxes; simply click on "send." You will receive an e-mail from LISTSERV.IHS.GOV; open this message and follow the instruction to click on the link indicated. You will receive a second e-mail from LISTSERV.IHS.GOV confirming you are subscribed to *The Provider* listserv.



THE IHS PRIMARY CARE PROVIDER

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

THE IHS PROVIDER is published monthly by the Indian Health Service Clinical Support Center (CSC). Telephone: (602) 364-7777; fax: (602) 364-7788; e-mail: *the.provider@ihs.gov.* Previous issues of THE PROVIDER (beginning with the December 1994 issue) can be found on the CSC Internet home page *(http://www.ihs.gov/Provider).*

Wesley J. Picciotti, MPA .....Director, CSC

John F. Saari, MD .....Editor

Cheryl Begay .....Production Assistant

Theodora R. Bradley, RN, MPH .....Director, OCE

Linda Trujillo, RN, MSN .....Nursing Consultant

Erma J. Casuse, CDA .....Dental Assisting Training Coordinator

Edward J. Stein, PharmD .....Pharmacy Consultant

Opinions expressed in articles are those of the authors and do not necessarily reflect those of the Indian Health Service or the Editors.

Circulation: The PROVIDER (ISSN 1063-4398) is distributed on the CSC website to health care providers working for the IHS and tribal health programs, to medical schools throughout the country, and to health professionals working with or interested in American Indian and Alaska Native health care. If you would like to subscribe, go to *http://www.ihs.gov/Provider*.

Publication of articles: Manuscripts, comments, and letters to the editor are welcome. Items submitted for publication should be no longer than 3000 words in length, typed, double-spaced, and conform to manuscript standards. PC-compatible word processor files are preferred. Manuscripts may be received via e-mail.

Authors should submit at least one hard copy with each electronic copy. References should be included. All manuscripts are subject to editorial and peer review. Responsibility for obtaining permission from appropriate tribal authorities and Area Publications Committees to publish manuscripts rests with the author. For those who would like more information, a packet entitled "Information for Authors is available by contacting the CSC at the address above or on our website at *www.csc.ihs.gov*.