NOVA SOUTHEASTERN UNIVERSITY COLLEGE OF OSTEOPATHIC MEDICINE

GEC Channel

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The Importance of Oral Health in the Elderly

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Professor and Chair of the Department of Geriatrics

ALSO IN THIS ISSUE...

Oral health in elders has become a focus of health promotion, prevention, and intense research not only from the dental perspective, but also from the medical, nursing, nutrition, and caregiving perspectives. A report from the U.S. surgeon general on "Oral Health in America" in June 2010 indicated that this is a public health concern because it affects a large proportion of the population and is linked with overall health status. The report also stated that

- improvement of oral health may have a positive impact on general health and may delay mortality
- 23 percent of 65- to 74-year-olds have severe periodontal disease, which is linked to several medical problems
- about 30 percent of adults 65 years and older are edentulous, compared to 46 percent 20 years ago (higher for those living in poverty)
- oral and pharyngeal cancers are diagnosed in about 30,000 Americans annually; 8,000 die each year, and these are primarily diagnosed in the elderly
- most older Americans take both prescription and over-the-counter drugs; at least one will have an oral side effect, usually dry mouth
- at any given time, five percent of Americans 65 and older (currently some 1.65 million people) are living in a long-term care facility where dental care is problematic

Oral health has been associated with several health outcomes, including cardiovascular disease, aspiration pneumonia, malnutrition, poor quality of life, and mortality. The Baltimore Longitudinal Study of Aging examined the association between the number of teeth and mortality risk. Five hundred subjects were studied with standardized oral examination, tooth count, tooth with caries count, and gingival and periodontal index. In addition, fasting glucose, oral glucose tolerance test, lipid profiles, and white blood cell counts were measured. Physical activity, skinfold thickness, BMI, and chronic diseases were also evaluated. After statistical analysis, investigators found being edentulous or having less than 20 teeth as being independently associated with mortality. Consequently, it appears that number of teeth is a significant and independent risk indicator for early mortality. Improvement of oral health may have a positive impact on general health and may delay mortality.

There is some evidence of a link with lower cognitive function and greater deterioration of oral health. Over 1,900 community-dwelling adults 60 years or older with their own teeth from the National Health and Nutrition Examination Survey (NHANES, 1999-2002) were studied with cognitive measures and dental examination. Lower cognitive function was associated with increased number of missing teeth and periodontal disease. Further evidence from the Nuns Study, which was a longitudinal study of aging and Alzheimer's disease in nuns aged 75 to 98 years, indicated that complete or nearly complete tooth loss may be a predictor of dementia late in life. Longitudinal dental data was collected from 10 annual cognitive assessments, and having between zero to nine teeth (not molars) at first cognitive exam was associated with a 2.2-fold risk of incidence of dementia.

Oral infections, particularly periodontal disease, produce a mild but persistent systemic inflammatory response that can contribute to frailty. It is associated with elevated levels of inflammatory markers such as interleukin (IL)-1 and EL-6. This is important since the consequences of frailty may be falls, impairment with activities of daily living, increased hospitalizations, and death.

Unfortunately for many elders, access to affordable dental care is a significant barrier to maintaining oral health and treating dental problems in a timely manner. Nearly half of all Medicare beneficiaries live on incomes below twice the federal poverty levels. Poverty rates are even higher among women, African American, and Latino Medicare beneficiaries. Medicare pays for slightly more than one-half (54 percent) of the health care costs of older Americans and only one percent of dental care. Moreover, Medicare is not designed to reimburse for routine dental care. Although Medicaid funds dental care for the low-income and disabled elderly in some states, reimbursements are low. A recent study in South Brazil showed that high resilience, income, and no reported change in diet because of dental problems was associated with positive self-perceived oral health.

In the long-term care setting, there has been a strong emphasis and use of resources on improving daily oral care, regular dental hygiene, education of caregivers, and timely treatment when appropriate. In this population, uncooperative residents may have worse oral hygiene and more caries, and evidence shows that improving oral care reduces the occurrence of pneumonia.

In the State of Aging and Health in America report (CDC 2007), one of the main points in the Call to Action was to improve the oral health of older adults. Others included addressing health disparities among older adults, encouraging people to communicate their wishes about end-of-life care, increasing physical activity, increasing adult immunizations, screening for colorectal cancer, and preventing falls.

At NSU, the GREAT GEC is fortunate to have an academic partnership with the College of Dental Medicine and its special needs dentistry department. We have compared medical and dental students' education, and it is apparent they rarely train together or interact professionally. Hence, joint clinical and didactic training has been promoted. Indeed, physicians and dentists do not collaborate routinely in coordinating the care of elders with diabetes, undernutrition, or cardiovascular disease in whom oral health plays an important role. Steps that could be taken on a daily basis while we are all discussing the issues could be to

- perform an oral exam on all older adults
- hold our learners accountable for performing an oral exam and evaluating their competency
- understand the manifestation and significance of systemic diseases on the mouth
- provide timely referral for dental care

Starting the New Academic Year with a Focus on Interprofessional Education and Practice

By Cecilia Rokusek, Ed.D., R.D.
GREAT GEC Executive Director and Professor of Family Medicine/Public Health

Geriatric Education Centers (GECs) have always focused on interdisciplinary education and practice. In fact, their history is grounded in this. The medical and health-related professions in geriatrics have most often delivered geriatric care in the context of interdisciplinary practice. The Institute of Medicine (IOM) report from 1972 emphasized the importance of interdisciplinary practice. In 2003, the IOM identified the need for a set of core interdisciplinary competencies for all health professions. In 2010, the IOM, along with health professions organizations and the Health Resources and Services Administration (HRSA) within the U.S. Department of Health and Human Resources, turned their focus to "interprofessional practice" rather than interdisciplinary practice.

Although similar, there is one very important difference. In interdisciplinary practice, two or more professionals from within the same core discipline, such as medicine, come together (e.g., geriatrician, cardiologist, and endocrinologist). With interprofessional practice, two or more different professions (ideally four or more) come together to work with the patient in a fully coordinated, patient-centered manner.

As a result of the ongoing work of the IOM, an Interprofessional Education Collaborative Expert Panel met during 2010 and 2011, which published in spring 2011 the *Core Competencies for Interprofessional Collaborative Practice*. This report is significant in that the core competencies identified by the expert panel represent the work of several interprofessional groups, namely the American Association of Colleges of Osteopathic Medicine, American Association of Colleges of Pharmacy, American Dental Education Association, Association of American Medical Colleges, American Association of Colleges of Nursing, and the Association of Schools of Public Health.

The expert collaborative panel described these core competences as "key to safe, high-quality, accessible, patient-centered care desired by all." As we begin the 2011-12 academic year, it will be important for us not only in geriatric care but in our entire system of health professions education and health care delivery to work to achieve the vision for interprofessional collaborative practice as outlined by the expert panel. Achieving that vision will not be easy. It will require each and every one of us to incorporate interprofessional theory and practice into the curriculum for our students so they can enter practice as capable interprofessional practitioners and leaders in the field.

This will require that students work in teams and are able to deliver team-based care. We have been doing this in geriatrics for some time. A very good example of this is our falls prevention and intervention

team-based work. The development and incorporation of interprofessional collaborative competencies (interprofessional education) into the curriculum requires moving beyond profession-specific education efforts to engage students of different professions in interactive learning with each other. Merely having students take passive learning lectures together in the same classroom is not interprofessional education.

The attention being given to interprofessional education in the GREAT GEC and across all of health care delivery is not something unique to the rest of the world. Canada, Great Britain, and Australia have all been delivering interprofessional team-based care for several years with significant outcomes. In 2010, the World Health Organization (WHO) in response to the interprofessional work of the IOM noted that, "It is no longer enough for health care workers to be professional. In the current global climate, health professionals also need to be interprofessional."

Given the leadership of the GECs in promoting interdisciplinary education and practice in the past and now focusing on interprofessional practice, much work has already been done to lay the foundation for this new curricular emphasis. There is still a paucity of literature and research to date in the area of interprofessional practice. D'Amour and Oandasan (2005) published some of the key work in this area. Simply stated, these two researchers expressed that interprofessional education enhances learner outcomes that ultimately lead to interprofessional collaborative practice that enhances patient care outcomes.

With the passage of the Recovery and Reinvestment Act of 2009 and the Patient Protection and Affordable Care Act of 2010, new approaches to health care are coming to the forefront such as the "medical or health home" concept to achieve better outcomes in primary care. Given the College of Osteopathic Medicine's mission and leadership in primary care, we are uniquely positioned to examine how we can more effectively integrate interprofessional education into our curriculum for our students and in our continuing education initiatives for those in the community.

Along with this, we must focus on developing long-term research models to examine the outcomes of our work in interprofessional education both for our students and those they will serve in the future. We are certainly on our way in the GREAT GEC, but we have miles yet to go. We have the time and interprofessional dedication with our wonderful faculty and staff members to do this.

If anyone would like a copy of the interprofessional competences published by the national collaborative, please call the GREAT GEC office at (954) 262-1638 or email *cs1747@nova.edu*.

NSU-COM to Oversee Two New Geriatric Fellowship Positions

Broward General Medical Center in Fort Lauderdale has been successful in its application for reallocation of CMS-funded residency positions and as a result will have two new geriatric fellowship positions, which will be under the direction of the NSU-COM Department of Geriatrics. This doubles the number of geriatric fellowship positions to four, which will provide an exciting opportunity to train future geriatricians to meet the growing need of older adults in Florida, which currently has only 3.4 geriatricians for every 10,000 individuals over the age of 75. The national mean is 5.5 geriatricians per 10,000 individuals over age 75.

Sun City Poms Epitomize Positive Aging

The Sun City Poms are more than entertainers; they represent the fulfillment that can be had in life at any age. Dancing with the spunk and energy of their youth, these ladies are having the time of their lives as they spread positive news about aging and shatter clichéd stereotypes of "senior citizens."

The 10 ladies of this unique group are all retirees living in Sun City, Arizona. Their ages range from 62 to 78. Coming from all walks of life, the Poms are highly energetic, accomplished performers who demonstrate their extraordinary abilities at their many yearly appearances at conventions, sporting events, community meetings, television, fund-raisers and parades. With excitement, agility, and grace, these women perform headstands, leg lifts, pyramids, and splits as well as modern jazz, tap, and their internationally famous "Pom Routine."

The Sun City Poms Marching Unit, consisting of approximately 20 ladies, marches in parades both locally and nationally. For several years, they have performed in the nationally televised Fiesta Bowl Parade in Phoenix. For additional information about these sensational seniors, please visit *http://www.sunaz.com/scpoms/*.

NSU-COM Participates in Boomers Expo

On July 22, Linda Maurice, director of the NSU-COM Lifelong Learning Institute (LLI) and Connie Sokolowski, administrative project coordinator of the GREAT GEC, represented the college at the Sixth Annual Boomer Expo at the Hard Rock Hotel and Casino in Hollywood, Florida. Showcasing over 80 exhibitors, the expo was a free event highlighting health and fitness, technology, travel, finance, food, home care, and retirement industries that attracted about 3,000 attendees. Many of the attendees stopped by the GREAT GEC booth to talk about the LLI's upcoming academic year and to learn about services provided by the NSU Geriatric Clinic.

Warfarin Interactions with Herbal Supplements

By Danica G. Garcia, NSU College of Pharmacy Student
and Joshua Caballero, Pharm.D., BCPP, Assistant Professor
NSU College of Pharmacy, Department of Pharmacy Practice

Warfarin is an oral anticoagulant medication that acts as an indirect antagonist of vitamin K, which is required for the synthesis of clotting factors II, VII, IX, and X in the liver. Warfarin undergoes hepatic metabolism mainly through cytochrome P450 2C9. Due to the concomitant use of herbal supplements, there's a growing concern supplements may have a potential interaction with warfarin. Therefore, the purpose of this review is to briefly discuss some of the more commonly used herbals that may interact with warfarin.

Garlic is known to inhibit platelet aggregation in some reports; however, large clinical studies have yet to confirm this.[1] Garlic inhibits CYP 450 2C9, which may explain why bleeding episodes may occur in patients who are concomitantly on warfarin and garlic.

There are several reports on bleeding episodes in patients consuming ginseng alone.[2] *In vitro*, several constituents of Asian ginseng inhibit platelet aggregation and thromboxane formation. However, when used concomitantly with warfarin, a randomized, controlled study on ischemic stroke patients showed no significant changes on how the blood clots.[3] However, American ginseng appears to induce CYP 450 metabolism of warfarin, thereby reducing the anticoagulant effects of warfarin.[4] Therefore, different species of ginseng may be responsible for the conflicting results and caution is warranted especially if patients switch brands.

Gingko biloba may have weak platelet-adhesion factor (PAF) antagonistic activity, which does not appear to have primary importance in hemostasis. Results from several controlled studies did not show a high risk of interaction with warfarin or an increased risk of hemorrhage.[5] Despite these reports, bleeding has been published in some case reports in the elderly population.[5] Therefore, caution may be advised for elderly patients and patients with increased risk of bleeding.

Omega-3 appears to have a dual anticoagulant and antiplatelet action. Studies have shown it is beneficial to combine omega-3 with antiplatelet drugs to enhance platelet inhibition.[6] Additionally, when used concomitantly with warfarin, it did not appear to increase the risk of bleeding. However, there have been some case reports, including one in which an elderly patient experienced an increased bleeding time (e.g., INR) due to using high doses of omega-3.[7] A reduction in the INR followed after a subsequent decrease in the omega-3 dose.

In conclusion, garlic, ginkgo biloba, and omega-3 may cause an increase in warfarin's effects. Evidence with ginseng is more conflicting: Asian species (also known as Panax) may increase bleeding vs. the American species, which may decrease warfarin's efficacy. Even though most studies show the effects are minimal with the listed herbals, the case reports that are available in the literature are mostly on the elderly population. Therefore, it may appear that elderly patients may be more prone to the risks of bleeding with the combination of these herbals and warfarin. Careful monitoring is recommended in the elderly when using these agents concomitantly.

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Dr. Hiroshi Gotanda Visits GREAT GEC

Hiroshi Gotanda, M.D., a geriatric fellow from the University of Tokyo Hospital in Japan, spent the week of July 18-23 as a visiting fellow at the NSU-COM GREAT GEC. Dr. Gotanda has been studying this past semester as part of his fellowship in Japan at the Geriatric Research Education and Clinical Center (GRECC) at the University of Florida in Gainesville. To gain insights and experience within a Geriatric Education Center (GEC), Dr. Gotanda selected the NSU-COM GEC to spend time at to learn about the mission and operations of a GEC. During his stay, Dr. Gotanda studied under the direction of Dr. Cecilia Rokusek.

While at NSU, Dr. Gotanda, observed the geriatric interprofessional clinic, toured two of the GEC community partner sites, attended a day-long planning meeting for the healthy brain initiative, met with the GEC interprofessional faculty members, and interacted with the faculty and staff members at NSU-COM's Institute for Disaster and Emergency Preparedness (IDEP).

Dr. Gotanda was especially interested in coming to the NSU-COM GEC because of its close working relationship with the IDEP and its focus on vulnerable populations, particularly the elderly. Dr. Gotanda is doing research on the impact of disasters on the geriatric population and presented a paper to the University of South Florida faculty on the subject. While at NSU, he also shared his knowledge and experience in the area. Given the triple disaster that impacted Japan this past year and given the large number of older Japanese citizens impacted, Dr. Gotanda's work is especially noteworthy. He will continue to interact with the faculty in both the GEC and IDEP in this important area.

Dr. Gotanda also spent time discussing with faculty members the challenges in recruiting health professions students to enter the field of geriatrics. Comparisons to recruitment challenges in the United States and Japan are very similar. The focus on positive aging and increased longevity is similar in Japan as in the United States. It is hoped that as a result of this "positive aging" focus and the emphasis on health promotion and disease prevention, especially chronic diseases, more students will select geriatric care and that those not trained specifically in geriatrics will obtain continuing education in the geriatrics field and integrate care for persons 55 years and older in their practices. Dr. Gotanda hopes to continue his interaction in this area as well as with the GEC faculty.

Fourth Annual GEC Symposium Held in Fort Myers

The NSU-COM Fourth Annual Interprofessional Geriatrics Symposium was held in partnership with its GEC partner on Florida's West Coast, ***Lee Memorial Health Systems*** and its gerontology program and services. In addition to the primary sponsors, community providers also helped to plan and host the symposium. These included ***Right at Home*** in home care and assistance, ***Shellpoint Retirement Community***, ***Brookdale Senior Living***, ***Whitsyms Senior Services***, ***Senior Living Guide***, ***Millennium House Adult Day Services***, ***SeniorBridge*** chronic care services, ***Nurse on Call*** home health care, and ***Superior Residences at HealthPark*** memory care. The two-day annual interprofessional symposium was attended by over 140 geriatric care professionals, faculty members, students, and caregivers. The theme of the 2011 symposium was *Closing the Gap in Elder Care*.

In addition to the program, poster sessions from faculty members and students along with displays from community providers were available for all participants to view and discuss. This year's symposium was unique in that caregivers were invited to the second day of the symposium to enable them to meet with and benefit from the work of all of the GEC disciplines and community partners. Caregiving continues to be a major challenge in Florida given the state's high proportion of people 55 years and older. Evaluation results from the symposium were highly favorable and provided reinforcement for the GEC faculty to expand this major continuing education (CE) and continuing medical education (CME) event for the state. It is important to note that participants included those from around the United States and two from Europe.

SAVE THE DATE

Fifth Annual Interprofessional Geriatrics Symposium

Closing the Gap
Through Interprofessional
Education and Collaborative Care

March 1–3, 2012
Nova Southeastern University, Davie, Florida

NOVA SOUTHEASTERN UNIVERSITY
College of Osteopathic Medicine

the GREAT GEC

Interprofessional Leadership in Geriatric Education

By Stacey Pinnock, M.S.W.
GREAT GEC Director for Interprofessional Education

This fall, the NSU-COM GREAT GEC is launching a faculty development program entitled Interprofessional Leadership in Geriatric Education. This program is geared toward raising awareness around the various components of health care for the aging population through an interprofessional lens, as well as building competencies and skills of faculty members to effectively build the interest of students in serving the older adult population.

The curriculum will be delivered using a blended learning approach by several leaders in the fields of geriatrics and interprofessional collaboration. A certificate in Interprofessional Leadership in Geriatric Education will be awarded at the completion of the 160-hour program. The Faculty Development Program for Interprofessional Leadership in Geriatric Education has four foundational program goals:

1. provide ongoing geriatric education programs for health professions faculty in the Health Professions Division (HPD), psychology, and other related geriatric disciplines targeted on preparing a geriatric workforce in the 21st century
2. integrate the concept of interprofessional geriatric practice in curriculum
3. introduce faculty members to the latest in teaching methods and technologies to enhance teaching skills and effectiveness in geriatric education
4. foster interprofessional knowledge and skills in teaching, service, and research

Seven topic areas have been identified for the yearlong program:

- understanding what interprofessional geriatric care really means
- understanding the provision of clinical services to geriatric patients in the 21st century and the trend of "population aging"
- administrative challenges in recruiting, mentoring, and supporting a diverse geriatric workforce
- teaching interprofessional practice for future geriatric care professionals
- utilizing Web-based technologies and other resources, including the Objective Structured Clinical Examination (OSCE), and experiential learning activities in the community
- implementing Healthy People 2020 and current policy issues impacting the geriatric workforce
- conducting research in interprofessional geriatrics (pedagogical research, outcomes research, qualitative research)

For additional information and to reserve your spot in this exciting career enhancement opportunity, please contact Stacey Pinnock at (954) 262-1819 or *stacey.pinnock@nova.edu.*

NSU Introduces Master of Arts in Gerontology Degree

Human Services of the NSU Division of Applied Interdisciplinary Studies (DAIS) is pleased to offer a Master of Arts in Gerontology beginning in the winter of 2012.

This 36-credit interdisciplinary program will be offered online and will be available to those currently working in or aspiring to work in the emerging fields serving older adults. The goal is to prepare students for upper-level leadership positions in a variety of fields, agencies, and institutions. The demographic explosion of older adults 55 and older is and will continue to impact the social and economic fabric of the United States over the next several decades. Knowledge, training, and skills to serve this burgeoning part of the population are urgently needed and well documented.

Because the impact of "the graying of America" is so far-reaching, this master's program will have a core set of courses with specialty tracks that utilize faculty expertise in a variety of NSU schools and centers. In addition to the six gerontology core courses from Human Services, the program will offer three specialty tracks: Gerontology and the Family; Emergency Preparedness and Response for Elder Populations; and Gerontology and Public Health. The program culminates with a Capstone seminar and an applied research Capstone project. This interdisciplinary and interprofessional approach will permit students from a variety of backgrounds and interests to advance their abilities and to take their new knowledge into the field of gerontology in which they plan to begin or continue their careers.

According to Jacquelyn Browne, Ph.D., LCSW, who is affiliated with NSU-COM's GREAT GEC, "I have had the pleasure of working with colleagues in the Department of Family Therapy and the Health Professions Division to develop this new degree program. Our new Master of Arts in Gerontology program is a reflection of our philosophy that best practices in the field of geriatrics and gerontology must be practiced from an interdisciplinary perspective and with interprofessional input."

Please contact Dr. Jacquelyn Browne at *jacquelyn.browne@nova.edu* for more information or visit *www.nova.edu/humanservices/* and follow the link to learn more about the new program.

Electronic Health Records and Health Care Delivery:

Perspectives for Providers of Older Adults

By Nicole Cook, Ph.D., M.P.A.
Assistant Professor of Public Health

Electronic Health Records (EHR) systems are being touted as an innovation that can support the transformation of health care delivery in the United States. A complete EHR system includes computerized health care data such as patient vitals (blood pressure, weight, and height), medications, allergies, patient problems (diagnoses), images, social and family history, as well as patient demographics such as name, address, insurance, and billing information. Many of these systems already have the capability to "talk" to other systems and facilitate the sharing of patient data (problems, lab results, images, health history, medications, immunizations, etc.) among multiple providers coordinating care for a patient.

The Federal Health Information Technology Strategic Plan lays out the role of EHRs in supporting transformation of health care in the United States. The plan seeks to

- enhance the ability to study care delivery and payment systems
- empower individuals to improve and participate more in their care
- improve care, efficiency, and population health outcomes through tools such as clinical decision support, real-time feedback of performance to clinicians, and targeted public health campaigns[1]

The federal government is dedicated to supporting the adoption and implementation of EHR in hospitals and physician offices and the integration of health care information across providers and care settings through nearly $27 billion in stimulus dollars (through the American Recovery and Reinvestment Act). It is expected that nearly 32 percent of physician offices and 65 percent of hospitals in the United States will have fully adopted EHRs by 2012. In Florida, EHR implementation and adoption is supported by multiple initiatives from local partners (the South Florida Regional Extension Center), statewide support through EHR adoption incentives and integration initiatives, and federal stimulus dollars.

Overall, adoption of EHR is anticipated to spread very quickly over the next three years. However, this adoption may be slower among physicians who treat older adults. Results of a cross-sectional study in Florida of EHR adoption among doctors who treat the elderly suggested that physicians who treat a high volume of elderly are more than 25 percent *less* likely to adopt EHRs than their counterparts (OR=0.733, 95 percent CI 0.547-0.982).[2] This study, published in 2010, raises concern that older adults may face a disparity in terms of benefitting from improved coordination of care that can be realized through EHR adoption.

There are many benefits of EHR that can be readily seen to support how physicians provide care and how patients receive care. Studies conducted on practices that have implemented EHRs have demonstrated improved access to patient information, improved chart documentation and legibility, and improved adherence to evidence-based guidelines of care for chronic disease. Some EHR functionalities, including e-transmission of prescriptions to pharmacies and e-transmission of lab results from lab

vendors to the ordering physician, offer immediate benefits, including reduced data entry, quicker filling of prescriptions and receipt of results, and, most importantly, improved monitoring and tracking of prescriptions and lab results (an automated "tickler" system). Recognizing other benefits of EHR is largely dependent upon a number of factors, including the design and usability of the system selected, system configuration and setup, office workflow, training, support, care-team structure, productivity thresholds, championship for the EHR project, and a number of other organization-specific characteristics and variables.

The movement toward EHR adoption and health care data integration can have profound effects on how care is delivered, particularly for older adults who often have multiple comorbidies, are on multiple medications, and see a number of different health care providers across different care settings. In a primary care office, for example, each physician has access to patient health information via his/her organization's EHR. By accessing the EHR, the physician is able to view patient information displayed in summary, in detail, and longitudinally (many EHRs will provide a flow sheet of lab results, vitals, etc.). If the primary care office is interoperable with specialty offices, or there is a Health Information Exchange (HIE) established in the area, then this means systems can "talk" to each other by sharing structured health care data across care settings. Under this scenario, the entire care system, and even more importantly, the patient, can benefit substantially from EHR.

Opportunities under an interoperable HIE mean that emergency room doctors can easily access a patient's medication list, diagnoses, family and social history, lab results, images, and other health care information, ensuring care is timely and appropriate. Similarly, follow-up care for admissions can be closely monitored and coordinated across different care settings (specialists, SNFs, rehabilitation centers, home care), potentially reducing the readmission rate for avoidable admissions.

In addition to the above opportunities, EHRs have also shown promise for supporting improved adherence to evidence-based care through functionality known as Clinical Decision Support (CDS). An example of CDS is as follows: "Dr. Jone's" office adopts care guidelines for older adults, including a falls risk assessment, pneumococcal and flu vaccination, and depression screening. These guidelines are then embedded into the EHR through the CDS module. When Dr. Jone's, or one of her providers, has a patient who has not met one of the guidelines, for example the patient is due for his or her annual flu vaccine, then the physician is prompted at the point-of-care by the EHR via a "reminder" that the patient is due.

One recent lesson learned from CDS implementations is that guidelines should be selected carefully under the guidance of a dedicated committee, and that the EHR CDS functionality should be pilot tested cautiously. The goal is to improve physician adoption of the CDS tools in practice, and to avoid what is commonly known in the information technology industry as "alert fatigue," whereby physicians get prompted for so many guidelines that they no longer pay attention to the reminders at all.

In summary, EHRs are expected to facilitate the transformation to safer, more efficient, more effective, and more economical care that is truly patient-centric and focused on patient outcomes. This is the backbone of the new federal incentives that support physician adoption of EHR and is commonly referred to as "meaningful use." To ensure that older adults have the opportunity to benefit from coordinated, patient-centered care that is enhanced by EHR functionality, special attention should be given to providers of older adults to ensure that EHR systems include all the necessary components and enhancements that will meet their needs. (For your information, an article on the topic "Patient Portals" will appear in the next issue of the *GEC Channel*.)

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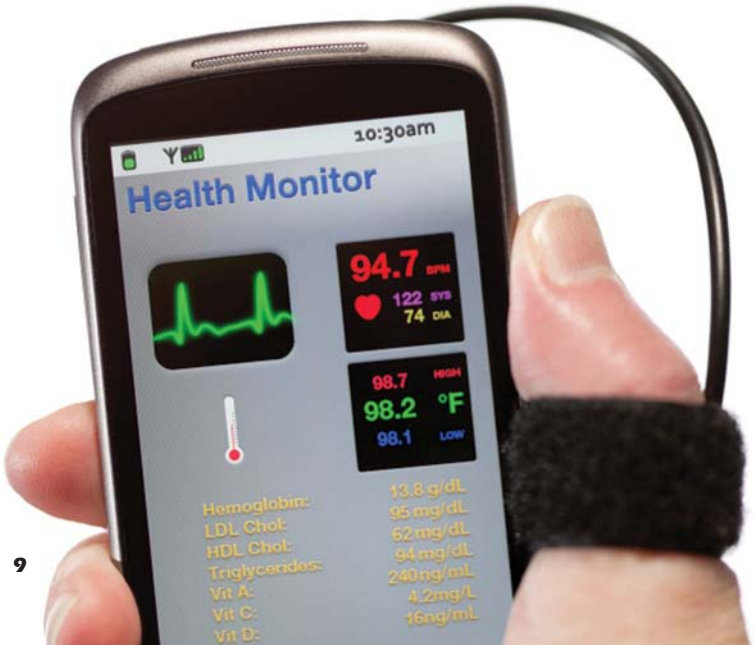
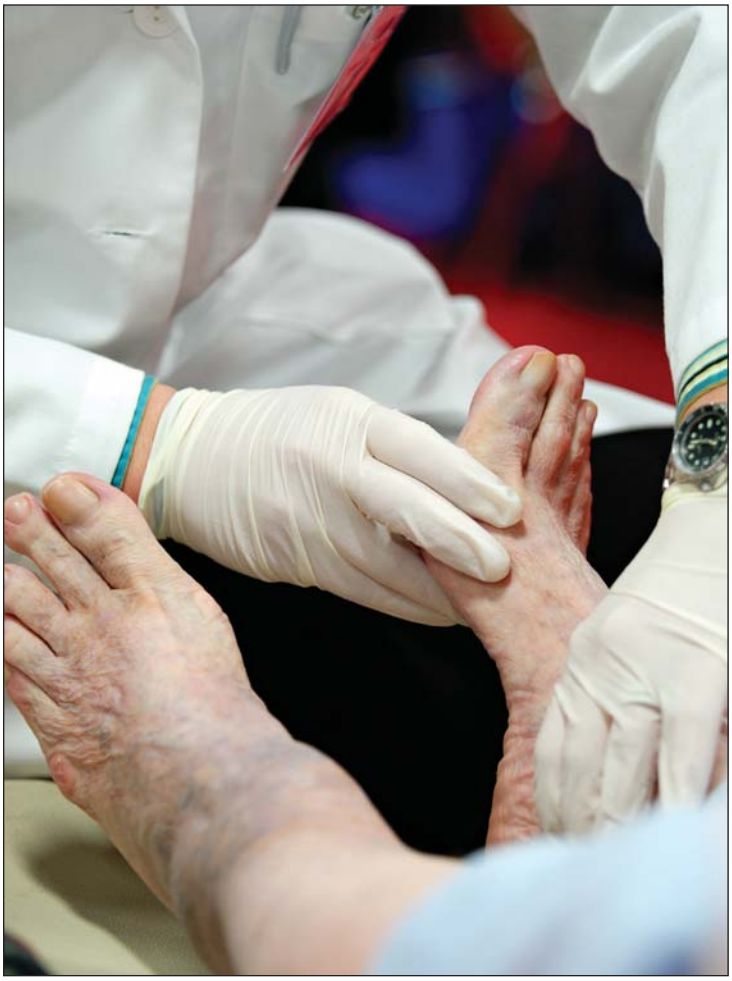


Diabetes Project – Next Steps

By Sweta Tewary, Ph.D., M.S.W., GREAT GEC Evidence-Based Coordinator



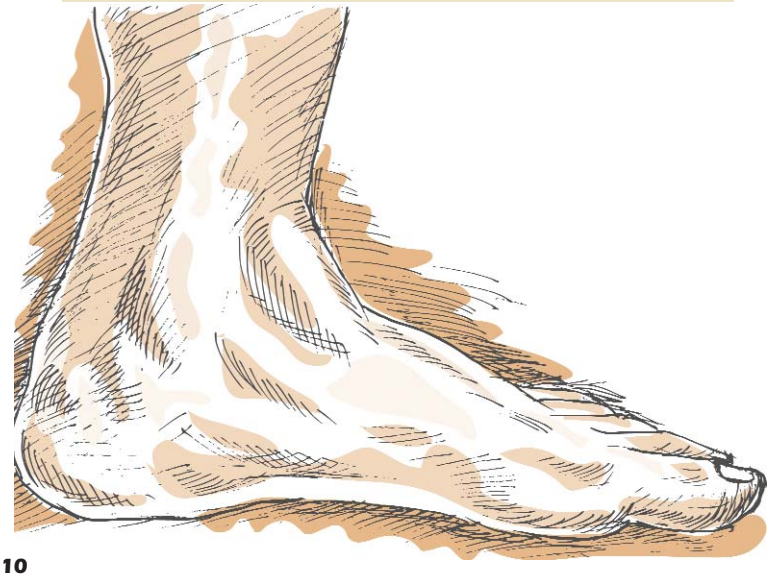
National trends indicate an increasing prevalence in diabetes, with 42 percent of the population afflicted with diabetes being 65 years or older. It is projected that this proportion will increase to 58 percent by 2050 (CDC, 2011). Increasing prevalence of diabetes has also impacted associated health care costs. Nearly $174 billion are spent annually for direct and indirect medical costs on diabetes care (CDC, 2010). Average acute hospital annual cost for a diabetic foot ulcer itself accounted for $9,910 in 1996 (CDC, 2011). With the rise in the prevalence of diabetes complications, it becomes imperative to provide training and practice care for our health care professionals to manage the disease.

The Evidence-Based Practice (EBP) diabetes foot education program funded by the Health Resources and Services Administration (HRSA) was developed in consensus with all four GECs (NSU-COM, Arkansas, Texas, and Stanford) involved in this project to improve quality of care of persons with diabetes. The specific goals are to train our health care professionals in diabetes foot assessment and improve patient outcomes.

As a follow-up on our proposed idea that was featured in the spring 2011 issue of the *GEC Channel*, the EBP project has moved to the next phase. To meet the educational needs of our health care professionals, we plan to train nurses, physicians, pharmacists, and physical therapists and follow-up learning outcomes in one group (nurses). The training will include one 45-minute session for each group that will be divided into two components. The first part will emphasize complications of diabetes and clinical aspects of foot assessment followed by a practical demonstration of foot inspection. The second session component will focus on patient education, which is an integral part of comprehensive patient care. To execute our training, we have contacted several long-term care facilities as potential recruitment sites. We have also developed comprehensive training modules and assessment measures to evaluate the immediate and long-term impact of our training program.

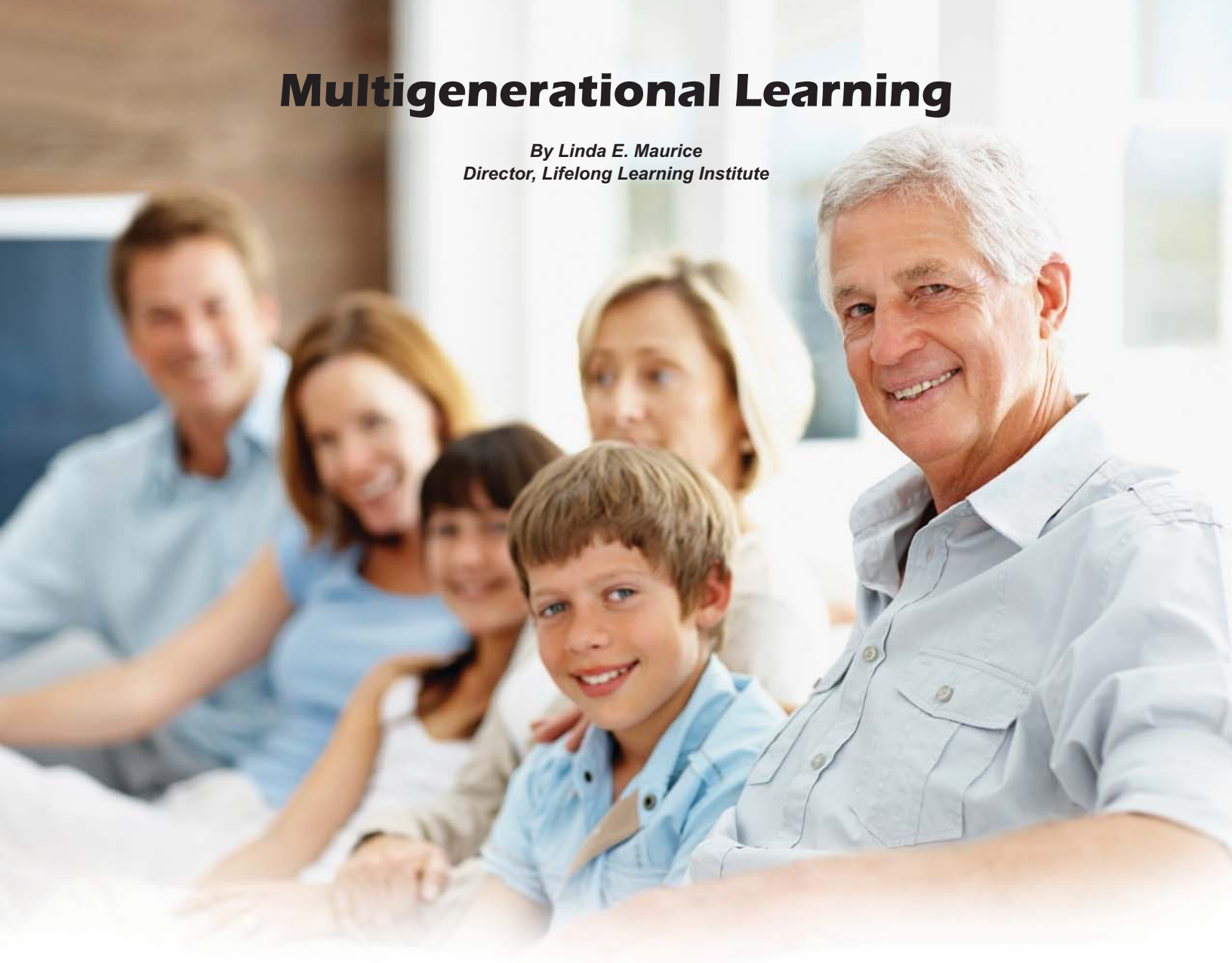
Outcomes of the foot assessment training will be analyzed through changes in clinical practice of health care professionals and improved patient outcomes. A quality improvement tool will be used to measure the level of education before and after the diabetes foot education training. We expect a 10-15 percent increase in practice change three months post training. Patient clinical outcomes will be measured for all non-demented patients with diabetes through methodical review of patients' charts before and after foot education training. We believe that our diabetes foot education training will have significant impact on practice change and patient outcomes that will be a potential source of publication and practice ideology.

"Average acute hospital annual cost for a diabetic foot ulcer itself accounted for $9,910 in 1996 (CDC, 2011)."



Multigenerational Learning

By Linda E. Maurice
Director, Lifelong Learning Institute



The evening class for Farquhar College of Arts and Sciences history professor Charles Zelden, Ph.D., is filling up and almost ready to begin. Young and eager faces await the start of their history class. But wait—not all the faces appear to be young, although they are just as eager. Meet the members of the Lifelong Learning Institute (LLI) who not only attend regular daytime classes at the LLI, but who also follow favorite lecturers into their afternoon and evening programs to delve even further into a particular subject.

These older adults have a passion for learning, which translates into a dedicated commitment to further their educational pursuits, just for the sake of learning. No credits earned towards another degree, no homework or tests required (although most of the LLI participants faithfully do the class work and readings assigned as part of the course curriculum).

According to Dr. Zelden, these "mature" students add a dynamic and focused element to the class that is appreciated by everyone. "Teaching history to 18 year olds is difficult," he explained. "They don't have much in the way of personal history to draw on in understanding the past. Having someone in class who has lived through much of the 20th century and can provide a personal context for historical events is a useful resource. In a word, the LLI members bring the past alive for my students."

Currently, LLI members can audit two classes a semester in the Farquhar College of Arts and Sciences. There is no additional cost involved beyond their annual LLI membership fee. Discussions are underway to further expand the auditing program to include other colleges and divisions at NSU, including the College of Osteopathic Medicine, Center for Psychological Studies, Huizenga School of Business and Entrepreneurship, School of Humanities and Social Sciences, and the Shepard Broad Law Center.

For more information about the Lifelong Learning Institute, please call (954) 262-8471, email *LLI@nova.edu*, or visit us on the Web at *www.nova.edu/lifelonglearning*. The LLI can also be found on Facebook, Twitter, and YouTube.

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