REGISTRATION FORM

PLEASE PRINT CLEARLY

Name: _____ Practice Name: _____

If you prefer vegetarian meals, or, if you have a food allergy, please check here ❑ allergy_____

Mailing Address: _____

Phone: _____ E-mail Address: _____

*** YOUR REGISTRATION CONFIRMATION DELIVERED VIA EMAIL**

2016 Healthcare Summit (CME Included)

REGISTRATION FEE

	Before June 27	Pre-Summit	On-Site
❑ WVSMA Member	**$275**	$290	$340
❑ Non-Member Physician		$390	$440
❑ Retired Member Physician	**$225**	$240	$290
❑ Office Manager or Medical Staff		$215	$265
❑ WVSMA Member Students/Residents **(No Charge)**		$0	$0

Welcome Luncheon- Friday, August 26, 11:30am ***(No charge for Summit Registrants. $45 per guest)***

____Yes, I will attend ____No, I am unable to attend _____# of guests @ $45 $_____

Inaugural Celebration & Gala Dinner - Friday, August 26, 7pm

____Individual Reservation $185 ____Reservations for a Couple $285 Number of Reservations _____

TOTAL AMOUNT DUE $_____

Payment Method: ❑ Check Enclosed ❑ American Express ❑ MasterCard ❑ Visa ❑ Discover

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You must be a confirmed registrant of the WVSMA Healthcare Summit in order to obtain a room in our block at the discounted rate.

To verify your status, please contact WVSMA Director, Operations & Conference Services, Karie Sharp at (304) 925-0342 ext. 12 or karie@wvsma.org

For lodging reservations, call the Greenbrier directly 1-877-394-4137

Rate: $279 (traditional room) | Deadline for Discount Rate: July 11

MAIL: West Virginia State Medical Association, 4307 MacCorkle Ave., SE, Charleston, WV 25304 | FAX: (304) 925-0345

EMAIL: karie@wvsma.org

A Continuing Education Program

Title: The Elder Mountaineer: Medical Issues of an Aging Rural Population

Sponsors:

West Virginia State Medical Association
4307 MacCorkle Ave., SE
Charleston, WV 25304
304.925.0342

CAMC Health Education and Research Institute
3110 MacCorkle Ave., SE
Charleston, WV 25304
304.388.9960
304.388.9966 FAX

Origination Date: May 1, 2016. Credit certification of this program expires May 1, 2019.

Format: Enduring Material - Journal/Internet delivery of related articles. This special issue is available in print and in pdf format on the WVSMA website: www.wvsma.org. Participants are required to complete a post-test instrument on the CAMC website for credit completion. Approximate course completion time is 5 hours. **The live-link to the online test will be provided via email blast by April 29, 2016, or you may contact Angie Brown for the link at angie@wvsma.org.**

Featured Faculty: Faculty information listed with each article.

Course Materials: Related articles, process evaluation, content post-test.

About the Program and Objectives

The May/June 2016 special issue of the *West Virginia Medical Journal* provides ten specific topics of particular interest and importance to West Virginians and their physicians. The theme of this issue, "The Elder Mountaineer: Medical Issues of an Aging Rural Population" is thoroughly explored by the authors through commentary, scientific research and informational articles. Topics include an update and review of PSA screening, prescription opioid abuse and misuse among older adults, skin care and diagnoses in the elderly, end-of-life wishes, undiagnosed and untreated depression in the elderly, disparities in cancer care, improving bone health and minimizing fracture risk, the impact of alzheimer's disease, major trauma, and finally, neurodegenerative disease diagnosis and impact on our elderly population. After reading this issue, physicians will have an increased awareness and knowledge of the following:

- describe the most current AUA guidelines for PSA-based screening of prostate cancer.
- explain the reasons that older adults are at risk for prescription opioid misuse, abuse and addiction; name three unique aspects of how illness can affect older adults; recognize at least three universal precautions that should be taken when prudently prescribing opioids to older adults.
- identify physiologic skin changes associated with aging, and to improve recognition and treatment of skin problems occurring in advanced age.
- describe the process of advance care planning;
- explain West Virginia's nationally recognized system to respect patients' wishes and the components of that system; and explain the advantages of the POST form compared to advance directives to respect West Virginians' preferences to die outside the hospital.
- state the burden of disease imposed by depression among elder West Virginians; screening of Medicare beneficiaries for depression in West Virginia; understand ways primary care and behavioral health can collaborate to address challenges associated with depression in elder West Virginians.
- list disparities in cancer care in West Virginia; recognize possible solutions to cancer care disparities
- examine the burden of osteoporosis among elder West Virginians; to examine the validation of the phone based administration of FRAX as an effective, alternative tool for osteoporosis screening.
- assess the prevalence of Alzheimer's disease in West Virginia; name local resources and support groups for patients with Alzheimer's disease and their caregivers.
- explain the impact of major trauma on the aging population of rural West Virginia, and the health care systems that care for these patients.
- discuss the disease burden, diagnostic strategy, and potential resources to use in treating patients with neurocognitive degeneration..

Disclosure

It is the policy of the CAMC Health Education and Research Institute that any faculty (author) who presents a paper for an enduring material designated for AMA Physician's Recognition Award (PRA) Category I or II credit, AANA credit or ACPE credit must disclose any financial interest or other relationship (i.e. grants, research support, consultant, honoraria) that faculty member has with the manufacturer(s) of any commercial product(s) that may be discussed in the educational presentation.
Program Planning Committee Members must also disclose any financial interest or relationship with commercial industry that may influence their participation in this activity. Unless otherwise noted, all authors and faculty have disclosed that no commercial relationships exist.

Professional Continuing Education Credits

This enduring material has been planned and implemented in accordance with the essentials and standards of the Accreditation Council for Continuing Medical Education through the joint providership of the CAMC Health Education and Research Institute and the West Virginia State Medical Association. The CAMC Health Education and Research Institute is accredited by the ACCME to provide continuing medical education for physicians.

Physicians

The CAMC Health Education and Research Institute designates this enduring educational material for a maximum of 5 *AMA PRA Category I credit(s)* ™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Cost: $30 online

CME Certificates

Continuing Medical Education will be verified by the CAMC Health Education and Research Institute, Charleston, WV. Physicians must be registered to obtain CME credits. The *sample* registration and answer sheet, along with the evaluation section are on pages 106-107; these may be reviewed prior to online testing. You must register online and complete the online test to receive credits. Upon completion, you may print your own certificate.

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May/June 2016 Special CME Issue

West Virginia JOURNAL

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Pat and Charles Bonar at their home in Burlington WV, showing them seated in front of an older building on their property.

Patricia grew up in Cameron, WV and Charles in Burlington, WV on the Fort Hill Farm. Both are former teachers at the Deaf and Blind School in Romney. They have lived in Burlington since marriage, for many years on the farm where the picture was taken. Pat has been active in the local Historical Society and Charles is a past member of the Mineral County Commission.

This photo was taken by Joseph Reed, MD and is the winning photo of the 2016 WVSMA Photo Contest.

Scientific & Special Articles

FEATURES

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President's Message

The Value of WVSMA's Legislative Team

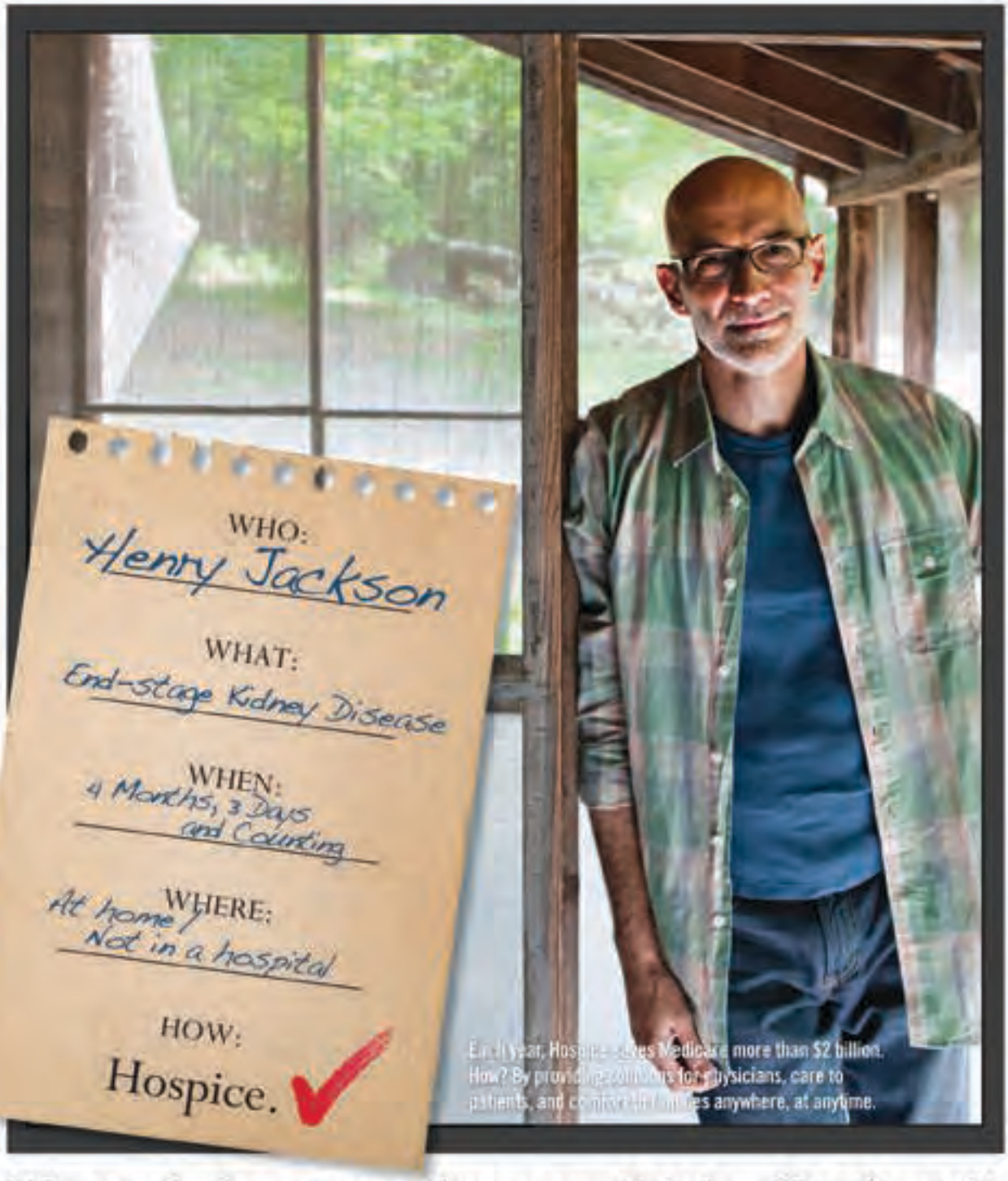
by Paula F. Taylor, RPh, MD
WVSMA President
2015-2016

Our elderly population in Appalachia represent both a blessing and a burden to those who provide their care. The blessings are many: from customs that have been passed from generation to generation to family stories and even folk medicine that has value even today. The burdens related to an aging population can be varied and often present many challenges to families as well as the health care community.

Communication barriers develop as many elderly have progressive hearing loss and communication barriers related to their changing health status. They often tend to be on multiple medications with multiple potential interactions.

Aging seems to also develop some levels of vulnerability as the elderly become victim to external influences related to their health and financial well-being. An interesting example of this vulnerability can be seen by the recent support of the legislative bill allowing APRNs to practice with less oversight in our state. The legislation was ardently supported by the AARP members who showed up in large numbers, yet I would suspect that the majority of those representatives donning their red jackets did not realize that they were asking to have their care managed by a provider with a fraction of the training in pharmacology—essential training to proper management of their medications and a lessened requirement of clinical experience.

In my work as an emergency physician I see many different faces of our aging population and the unique problems they face. I also hear numerous heart warming stories from these same patients as they share their life histories and tragedies as well as the joy they find in their grown children and grandchildren. I hope you will find useful information in this special edition, as well as the opportunity to earn up to 5 CME credits. It is with great pride and appreciation to our contributing authors and editors I wish to present this issue.



We can help sooner than you think... Don't wait.

Hospice Council of West Virginia

hospicecouncilofwv.org

R. Austin Wallace, MD
Chairman & CEO
West Virginia Mutual
Insurance Company

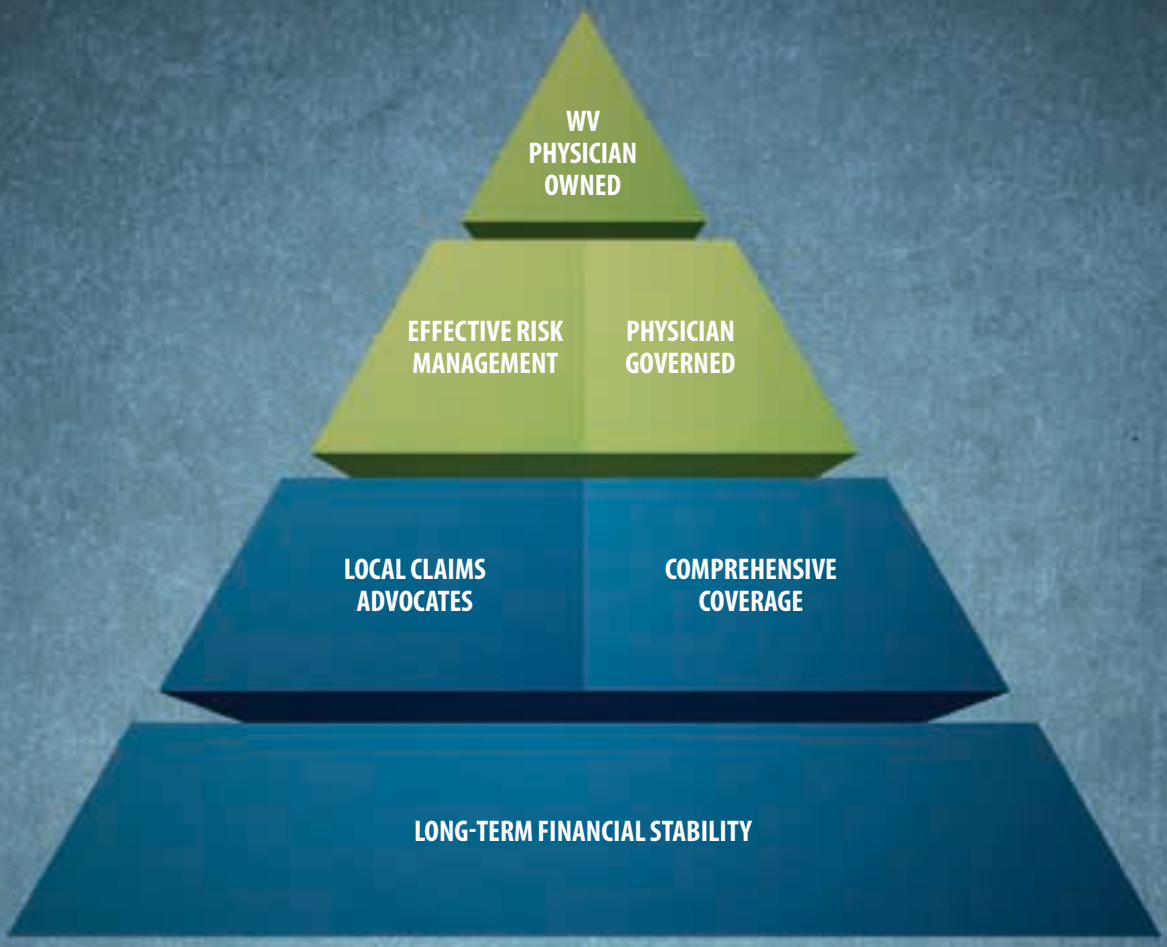
The Mutual — A Great Success

(An edited excerpt from the 2015 WVMIC Annual Report)

The West Virginia Mutual Insurance Company (WVMIC or the Mutual) is now in its twelfth year of operation. We are a mature, very financially secure company that continues to be the premier medical professional liability insurer in West Virginia. As a result, we continue to carry an A- "Excellent" rating by A. M. Best, the preeminent insurance rating agency. At our core, we remain physician–centric: we are physician-owned, physician-governed, and physician-managed, and as a mutual domiciled in the Mountain State, we are in no way beholden to out-of-state shareholders or owners. WVMIC now has the capability to grant dividends to our owners/insureds when it is financially prudent to do so, and we are the first medical professional liability insurance (MPLI) company to ever have done this in our state (almost $14 million over the past few years.) Our Mutual continues to also be unique among state MPLI companies in its very active advocacy for our insureds to protect our civil justice reforms, which have dramatically improved our state's practice and public health environment. Furthermore, we continue to assess the changing healthcare marketplace and adapt to it, which has resulted in the development of the capacity for us to insure facilities and hospitals.

WVMIC continues to be recognized as an industry leader in risk management initiatives, which very importantly emphasize best practices and patient safety. Special emphasis is placed on effective communication, especially our flagship C.A.R.E. disclosure and apology program. Since our inception, an impressive 25% of our Mutual employees have been engaged in this pursuit. Unlike most other MPLI companies, we have a Compliance Specialist who is available to provide information and a review of your processes regarding HIPAA and privacy matters. I continue to function as Medical Director for Risk Management, and these programs continue to be very popular with our owners/insureds. Indeed, over 98% of WVMIC insured physicians have participated in one or more these, which is a testament to their popularity and utility.

Healthcare is undergoing change more rapidly than at any other time during my professional career. Uncertainty abounds regarding Obamacare's evolving implementation, including electronic health records, quality based reimbursement and, indeed, reductions in reimbursement for healthcare providers of all stripes. Therefore, it is very fortunate that West Virginia physicians no longer have to worry about the availability or the affordability of medical liability insurance. Our Mission Statement's foundation is that we will "… provide professional liability insurance… on a sound and enduring basis." Our Mutual has been able to be very successful in a challenging venue that has caused many MPL insurers to give up on our state in the past, leaving West Virginia physicians, myself included, without a viable alternative option. What a refreshing change this is to have one less worry about the future. We are Physicians insuring Physicians.



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West Virginia Mutual Insurance Company

The Healthy Choice

Physicians Insuring Physicians

(304) 343-3000

www.wvmic.com

News and Views From the Executive Director...

Brian O. Foy
WVSMA Executive Director

WVSMA Leadership Visits Capitol Hill

In late February, WVSMA President Paula Taylor, RPh, MD, and Brian Foy, Executive Director, attended the AMA National Advocacy Conference in Washington, DC. The meeting was held February 22-24 at the Grand Hyatt and featured several outstanding speakers interspersed with educational programming and legislative briefings. The Keynote Speaker was Ken Adelman, former US Ambassador and former Arms Control Negotiator for President Ronald Reagan. Mr. Adelman gave an inspirational talk on leadership as he witnessed it from the inside of the Reagan Cabinet. As he walked the audience through the various presidential summits with then Soviet ambassador Gorbachev all the way to the speech at the Berlin Wall, it was a fascinating look at the vision of a famous leader and his determination to never sway from what he thought was the ultimate goal: the fall of communism.

The 2-day program featured many other dynamic and informative speakers, including: Andy Slavitt, Acting CMS Administrator, who discussed the Obama Administration's recent course shift regarding Meaningful Use and the path ahead for physicians and implementation of MACRA, alternative payment models and Merit-based Incentive Payment Systems (MIPS); Michael Botticelli, MD, Director, White House Office of National Drug Control Policy, who reviewed the Administration's response to the opioid epidemic; and several members of Congress who gave their perspectives on the various issues impacting physicians and medical practice.

On February 23rd, Dr. Taylor and Mr. Foy made scheduled Hill Visits to our West Virginia members of Congress, including the following: Senator Shelley Moore-Capito; Congressman David McKinley; Congressman Evan Jenkins; and Congressman Alex Mooney. Senator Manchin was unavailable but we had an excellent meeting with his health and legislative staff. Joining us on these visits was Karen Foy, WVSMA Director of CME and the WV Medical Foundation. While we discussed a number of issues impacting the practice of medicine in West Virginia, we primarily focused on three issues affecting physicians all over the country:

Meaningful Use – the focus here was on the need for continued reform of the Meaningful Use of electronic health records in Medicare, permitting more flexibility for physicians in meeting the program's goals, promoting technological interoperability, and allowing innovation to flourish as vendors respond to the demands of physicians and patients rather than the current system, which is overly consumed by the "check the box" approach to achieving quality. It was noted that since the implementation of the HITECH Act in 2001, 80% of physicians are now using electronic health records; however, what has emerged is a complex web of requirements that has had a

Pictured to the left are (l to r) Brian Foy, Executive Director, WVSMA, Karen Foy, Director, WVSMA CME & WV Medical Foundation, Paula R. Taylor, RPh, MD, 2016 WVSMA President, and WV Congressman Evan Jenkins. To the right, the group is standing with Congressman David McKinley.

significant impact on the patient-physician relationship as physicians must spend much of the patient visit entering data into a computer. Our message to Congress: slow down on the expansion of Meaningful Use and implement common sense reforms that transform the program from one that utterly frustrates and distracts physicians to one that empowers physicians to provide the highest quality care possible.

Telemedicine – we urged our members of Congress to support the bipartisan "CONNECT" (Creating Opportunities Now for Necessary and Effective Care Technologies) for Health Act (S. 2484/H.R. 4442), which would increase the use of telemedicine and remote patient monitoring through Medicare. The bill would remove outdated restrictions on Medicare coverage of telemedicine that limit beneficiary access to these services. We also discussed the strong and proactive telemedicine law that WVSMA introduced during the 2016 WV Legislative Session, which the Governor signed into law.

The Opioid Epidemic – this was clearly the #1 topic of interest and discussion in all of our meetings. Our WV Congressional leaders are intimately familiar with this epidemic and the steps we have taken in West Virginia to reverse the disturbing statistics and save lives. Physician leadership is crucial in this effort. The approach must balance the treatment needs of pain patients with efforts to promote safe and appropriate prescribing, reduce diversion and misuse, promote an understanding that substance use disorders are chronic conditions that respond to treatment, and expand access to treatment for individuals with substance use disorders. We urged our Senators to support the "National All Schedules Prescription Electronic Reporting Reauthorization (NASPER)" Act (S. 480/H.R. 1725) and thanked our House members for passing this bill, which would fully fund and help modernize state-based prescription drug monitoring programs as well as increase coverage and funding for medication-assisted treatment to address opioid use disorders.

Ron Stollings, MD, WVSMA Past President, speaks to the audience at the 2016 AMA Nathan Davis Awards. Dr. Stollings was awarded by the AMA for Outstanding Government Service in the category, Outstanding State Senator.

H.R. 4499 – the Promoting Responsible Opioid Prescribing Act of 2016, introduced by Congressman Alex Mooney (WV-2), would delink pain related measures from hospital reimbursement under the Hospital Value-Based Purchasing Program. The AMA has urged all members of Congress to support this bill, which would remove patient satisfaction surveys from reimbursement determinations under this program. The AMA has heard from many physicians that pain-related questions in the HCAHPS survey, in particular, are having the unintended consequence of promoting inappropriate prescribing of opioids and thereby contributing to the epidemic of opioid misuse, overdose and death. Congratulations to Dr. Paula Taylor for educating and inspiring Congressman Mooney into authorizing this important piece of legislation!

In addition to our important work on The Hill, the highlight of the trip was the 2016 AMA Nathan Davis Awards, at which eight (8) individuals were recognized for outstanding government service at both the state and federal level. Among those recognized was Ron Stollings, MD, for "Outstanding State Senator" in his service to the citizens of the State of West Virginia. Dr. Stollings is a past president of the WVSMA and an outstanding leader in the WV Legislature. It was an honor and privilege to be there as he received this well-deserved recognition. As a "nightcap" to this special evening, Congressman Evan Jenkins treated Dr. Stollings, his guests and friends from West Virginia to a special, private tour of the floor of the House of Representatives and the Capitol. We were also joined by the president of the AMA, Steven Stack, MD. It was a special evening and a memorable, productive trip.

Members in the News

Raleigh County Medical Society Invites a Special Guest to Install Its Officers

Pictured from l-r: Rahul Gupta, MD - WVSMA **President-elect (installing officer), Lynnetta Faith** Payne, DO - RCMS President, Shawn Reesman, MD - RCMS President-elect, Ely Jean Salon, MD - RCMS Secretary/Treasurer.

Rahul Gupta, MD, Commissioner, WV Bureau for Public Health, State Health Officer, and WVSMA President-elect, was invited to the Raleigh County Medical Society (RCMS) to perform the installation of the 2016 officers. Rose Romero, Executive Secretary said, "Our officers and members were honored to have him at the dinner dance/ meeting in December. Our young officers had a great time learning from Dr. Gupta's message to RCMS members, and having fun fellowship with the WVSMA President-elect.

Since most of our loyal members are now retiring or moving elsewhere, RCMS has been on the move encouraging young physicians to participate actively, and be ambassadors in promoting and continuing the mission and goals of the medical society. Our main goal this year is membership, membership, membership!"

Send member news to Angie Brown, Managing Editor: angie@wvsma.org

Lewisburg, WV Physician elected Vice President, WVSMA

Coy A. Flowers, MD of Lewisburg, WV was elected to the position of Vice President of the West Virginia State Medical Association, effective August 27, 2016. The election was held at the 2016 WVSMA Annual Business Meeting, February 27, 2016.

Dr. Flowers is an Obstetrician/ Gynecologist who hails from Cabell County, WV. He resides in Lewisburg, WV and practices with Greenbrier Physicians, Inc.

In addition to being a Fellow of the American Congress of Obstetricians & Gynecologists (ACOG) and President of the Greenbrier Valley Medical Society, Dr. Flowers is a Clinical Assistant Professor at the West Virginia School of Osteopathic Medicine. He has served as Legislative Chair for West Virginia ACOG and on the West Virginia State Medical Association's (WVSMA) Legislative Affairs Committee, advocating for better access and delivery of health care at local, state and national levels with a particular focus on the Opioid Addiction Epidemic in Pregnancy.

Additionally, Dr. Flowers has chaired West Virginia's Maternity Care Shortage Committee for the state's Perinatal Partnership and worked on its Telecommunications in Rural Health Medicine project. At Greenbrier Valley Medical Center, he served as the Chair of the Department of Surgery, as well as its Medical Executive, Maternal-Infant Services Improvement, Peer Review, Graduate Medical Education, and Safety and Infection Control Committees.

Emails from our Medical Student Legislative Interns

George Thieroff

West Virginia University School of Medicine

The last few days have been very hectic. I am very excited to share with you that I matched at my second choice for Internal Medicine/ Pediatrics, Virginia Commonwealth University! It is located in Richmond, VA just a few miles from the state legislature! So I am sure that I will continue to remain involved in state policy and my local state medical association.

Thanks to everyone for making me feel so welcome during my time at WVSMA.

I will be sure to spread the word at WVU about the great time I had so that future students will share the same experience. Thank you again and I look forward to seeing what you are able to accomplish in next year's legislative session.

Jennifer Zatezalo

West Virginia University School of Medicine

I ended up at Penn State!! I'm moving to Hershey in June. I am absolutely thrilled, it was my favorite program. I'm going to try to do a fellowship in an area that we don't currently have in WV so that I can come home after training!

I just wanted to say thank you for speaking to the PA Medical Society on my behalf! I am definitely planning on joining the PA Medical Society, a decision based on my excellent experience at the WVSMA.

My Better Half: the first 10 years

by Shafic Sraj, MD

My lovely wife, Marwa, and I have been happily married for eleven years. We met while I was in medical school and got married during residency. We are blessed with two boys, eight and five years of age.

Marwa disregarded several warnings about doctors' long work hours and stressful lifestyle. She learned about it the hard way and figured out the extra 'home' hours occupied by patient care. I, on the other hand, realize the influence she has on my well-being, as well as on the care I provide. Good times are better and hard times are easier with a loving wife.

Marwa is my confidante. She is the one person I share my joys and worries with.

Marwa is my voice of perspective. She is a good listener and a thoughtful individual. She showed me, early in my career, the importance of treating patients, not just their illnesses.

Marwa is my comfort. She buffers the emotions I bring home, and helps me recharge for the following day.

Most importantly, Marwa owns the most important responsibility of all: Striking balance between our family and my profession. Such a delicate balance, many of us know, is hard to reach. Busy clinics, emergency rooms, and operating rooms have a way of steering physicians away from family. Rather than becoming resentful or disengaged, she steps in, in the most delicate way, and stops the cycle before it turns vicious.

I do not pretend that it has been an eleven-year long honeymoon. Marwa and I had our share of challenges, especially during life-changing events. The hardest challenge we faced was when we moved to the USA for my Hand fellowship, the same year we welcomed our first child. As we were adapting to a new culture, a new language, and new parenthood, I realized that the deadline to take my USMLE Step 3 was near. The multitude of challenges and deadlines in a short period of time created a gap between the two of us, a gap that required combined effort to close.

The past few years have been full of wonderful memories and were worth every single step. We learned that it's all about the journey, not the destination.

No matter how much knowledge and skill a physician builds, it all starts at home. It is Marwa who allows me to be the best physician I can ever be.

WEST VIRGINIA
MEDICAL INSURANCE AGENCY
"Meeting the insurance needs of physicians"

If I Must Buy Tail Insurance: What Are My Options?

Steve Brown
Manager
West Virginia Medical
Insurance Agency

Definition

Tail coverage (or tail insurance) is a general concept that is utilized to extend the claims made reporting time on claims made policy forms of medical professional liability policies. Claims made policies cover "claims that are made (reported) during the policy period that have occurred at any time since the retroactive date listed on the policy." While this is somewhat confusing, it became necessary in the mid-1970s for physicians medical professional liability insurance to more accurately predict the cost of the insurance.

When the insurer of the physician provides tail coverage it is done by endorsement to the policy by adding and Extended Reporting Endorsement to the policy thereby accomplishing an extension of time to report claims that have already occurred, but not yet reported. In the case of death, disability, or retirement (subject to certain conditions generally related to age and years of continuous coverage at the time of retirement) no additional charge is made for the tail coverage. But when physicians move to new locations, change carriers, retire (and do not meet the requirements for free tail) a charge for tail coverage is made.

WV Statutory Requirements

West Virginia statute requires specific terms and conditions for tail coverage offered by WV licensed insurance companies. WV statute requires that periodic payment options be offered to physicians. The coverage when offered is offered at the following payment options: lump sum; quarterly installments over one, two, or three years. These options (the annual installments) are unique to WV – in most all states, the only option is lump-sum payment. Further, should a purchaser not pay the full premium, the percentage of premium paid will be applied to the limit of liability to determine the actual limit available to the insured in event a claim is reported in the future. These features are deemed beneficial to purchasers of tail coverage.

Stand-Alone Tail Policies

Since the mid-1970s, claims made coverage has become more extensively utilized and in recent years, insurance companies that have NOT been the provider of the physician's insurance have offered to provide only the tail insurance. This is called stand-alone tail and is written on a separate (new) policy.

The up sides to purchasing tail coverage on a stand-alone basis are:

- Frequently lower tail costs are available and from quality rated carriers.
- Shorter tail coverage periods can be purchased in the free standing tail market. While this may not be the recommended way of handling tail purchases; it does allow physicians to opt for lower premiums for a reduced term of tail coverage.
- Should the physician purchasing tail leave a group, the options of purchasing tail may be controlled by the group; the availability of stand-alone tail gives the physician an option which he/she controls.
- Cessation of a group (primarily for financial reasons) may create a situation where tail coverage for the group is not available or there is no source for payment. The availability of free-standing tail gives individual physicians a way to protect their individual exposures.

Make the Right Choice

NOT all options of purchasing stand-alone tail are beneficial to physicians. For example, the definition of claim may be different on the stand-alone tail policy from the regular policy – determination of the effect of this difference must be understood.

While options do exist when purchasing tail, a physician should be alert to the options available, and know that reduced prices are available, but favorable factors in WV statute and the problems created by changing carriers (with different definitions for a claim) can also create a long-term problem for the physician.

We recommend the physician wanting to review options make sure they are alert to the various concerns and understand the issues before making their decision. We, the West Virginia Medical Insurance Agency, can help you evaluate your options and answer your questions. Call Steve Brown, Agency Manager, for more details about your tail purchase options.

Office: 304-925-0342, ext. 22-Steve; ext. 17 Robin
Steve's Cell: 304-542-0257 | Fax: 304-925-3166

Maintaining Independence Through Screening

West Virginia's population is aging at a rate exceeding that of the nation. Overall, the population age 65 and over is expected to grow to 22.9%, up from 16% in 2010.[1] Due to the increased prevalence of chronic disease in those over 65, prevention for this age group has become increasingly important. This population relies upon healthcare professionals to provide an opportunity for screenings and other preventive services to increase longevity and lifetime independence.[2]

The U.S. Preventive Services Task Force (USPSTF) recommends a range of clinical preventive services for older adults. The screenings identified below have the biggest impact on health and are the most cost effective.

USPSTF Guide to Clinical Preventive Services 2014[3]

Breast Cancer Biennial screening mammography for women aged 50 - 74 years old. The decision to start screening mammography in women prior to age 50 should be an individual one and the risks and benefits should be discussed.
Carotid Artery Stenosis Recommended against screening for asymptomatic carotid artery stenosis in the general adult population.
Cervical Cancer Recommended against screening for cervical cancer in women older than age 65 who have had adequate prior screening and are not otherwise at high risk for cervical cancer.
Colorectal Cancer Adults aged 50 - 75 years old using fecal occult blood testing, sigmoidoscopy, or colonoscopy.
Coronary Heart Disease (CHD) Current evidence is insufficient to assess the balance of benefits and harms of using the nontraditional risk factors studied to screen asymptomatic men and women with no history of CHD to prevent CHD events.
Dementia Evidence on screening for cognitive impairment is lacking and the balance of benefits and harms cannot be determined.
Diabetes Screening for abnormal blood glucose as part of cardiovascular risk assessment in adults aged 40 - 70 years old who are overweight or obese. Clinicians should refer patients with abnormal blood glucose to intensive behavioral interventions like the National Diabetes Prevention Program or Diabetes Self-Management Education Program to promote nutrition, weight loss and increased physical activity. The U.S. Department of Health and Human Services announced in March 2016 that Medicare will begin reimbursing Centers for Disease Control and Prevention (CDC) recognized providers for administering the Diabetes Prevention Program (DPP) to eligible beneficiaries.
Osteoporosis Women <65 years old whose 10-year fracture risk is equal to or greater than that of a 65 year-old white woman without additional risk factors and men without previous known fractures or secondary causes of osteoporosis. No recommendation.
Ovarian Cancer Recommended against the service. There is moderate or high certainty the service has no net benefit or the harms outweigh the benefits. This recommendation applies to asymptomatic women. Women with known genetic mutations that increase their risk for ovarian cancer (BRCA mutations) are not included in this recommendation.
Peripheral Arterial Disease Current evidence is insufficient to assess the balance of benefits and harms of screening for peripheral artery disease (PAD) and cardiovascular disease (CVD) risk assessment with the ankle–brachial index (ABI) in adults.
Prostate Cancer Recommended against prostate-specific antigen (PSA) based screening for prostate cancer.
Thyroid Dysfunction Current evidence is insufficient to assess the balance of benefits and harms of screening for thyroid dysfunction in non-pregnant, asymptomatic adults.
Vision Current evidence is insufficient to assess the balance of benefits and harms of screening for impaired visual acuity in older adults.

Improving screening rates allows West Virginians to maintain lifelong independence and increases longevity. Novel, team-based approaches, including the use of technology and paramedical team members, have shown to increase patient adherence.[2]

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Jessica Wright, Director
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Office of Community Health Systems and Health Promotion

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Commissioner and State Health Officer
West Virginia Bureau for Public Health

Physician Practice Conference + Midwinter Annual Business Meeting

February 26-27, 2016

Embassy Suites, Charleston, WV

CHARLESTON, WV: January 26-27, 2016 — SNOWMAGEDDON! Yes, that's what happened on the first date we set for the 2016 WVSMA Physician Practice Conference & Midwinter Annual Business Meeting. So...we punted and through Karie Sharp's hard work and the awesome accommodations of Embassy Suites, Charleston, WV, we were able to get the meeting rescheduled to February 26-27, 2016.

Physician Practice Conference a Big Hit!l

The Physician Practice Conference was a terrific success! The combined effort by the West Virginia State Medical Association and West Virginia Medical Group Management Association provided several diverse educational sessions. Shannon Chase and Kim Campbell of Palmetto GBA began the day-long conference with a presentation of Medicare updates, addressing new policies and answering questions. Motivational and mentalist speaker Keith Matheny's presentation both wowed and moved attendees!

Shannon Chase, Palmetto GBA

The afternoon sessions included payor updates from 12 payors, as well as presentations by Huntington Internal Medicine Group (Chronic Care Management) and a 2016 Update by Highmark West Virginia management.

Keith Matheny, motivational speaker and mentalist

We caught several of the Marshall University Masters of Healthcare Administration students in a pose!

Friday's Physician Practice Conference was informative, **and enjoyable** for attendees and exhibitors alike!

Above: Sherri Clark of EN&T Associates. Below: Debbi Casto of Janssen and Kim Ward of The Mutual Insurance Company.

WVSMA Leaders Visit the State Capitol

Dr. Adam Breinig, DO gives a television interview on the steps of the WV Senate Chamber.

Drs. Kinder, Amores, Henry, Flowers & McKinney seated together in the balcony at the Capitol Senate chambers.

On Saturday, February 27, approximately 30 physician delegates to the WVSMA House of Delegates took a break from their busy meeting schedule and went to the Capitol to show physician presence during the WV House of Delegates vote on HB 4334, the bill to expand the scope of practice of Advanced Practice Registered Nurses (APRN). The physicians were recognized on both the House and Senate Floors by their respective legislators and talked to both legislators and the media about the concerns physicians had about allowing APRNs to practice independently and prescribe drugs independent of a collaborative relationship with a physician. Several of the interviews were featured on the local news that evening. Despite the physician interest and many expressions of concern, the House voted to pass HB 4334 by a lopsided margin.

Our members at the Capitol during the Midwinter Annual Meeting!
Back row, l to r: Roland Chalifoux, DO, Michael Fidler, MD, James Felsen, MD, Hoyt Burdick, MD, Sherri Young, DO, Adam Breinig, DO, Paul Kempen, MD, Charles Whitaker III, MD, Brad Henry, MD.
Front row, l to r: Shafic Sraj, MD, Howard Shackelford, MD, Constantino Amores, MD, John Wade, MD, Coy Flowers, MD, John Wyllie, MD, Doug McKinney, MD, Richard Rashid, MD, James Baek, MD & Ahmed Faheem, MD.

WVSMA Amends Bylaws to Allow PA's to Become Members

At its Annual Business and House of Delegates meeting on February 27, the WVSMA approved an amendment to its bylaws which will allow physician assistants to join the WVSMA as associate members. Associate members may not vote or hold office; however, they may serve on committees and otherwise have full membership privileges. The WVSMA will appoint a special working group to include PA's to recommend next steps for implementation. We welcome PA's into the WVSMA and look forward to working with them and their state association (WVAPA) on issues of mutual concern and interest!

Dr. Avery, speaker of the House leads the HOD meeting. Right, Susan Baek, **Esq., WVSMA Director, Health Policy & Legislative Affairs**

Many resolutions were presented at this year's meeting. For a complete report of the Resolutions Committee, see pages 18-23.

Left, Dr. Brad Henry, right, Dr. Coy Flowers before the WVSMA House of Delegates.

Left, Dr. John Wade. right, Dr. Paul Kempen; both speaking before the WVSMA House of Delegates.

AMA Task Force to Reduce Opioid Abuse

Patients with a substance use disorder need treatment – not stigma

Junkie. Stoner. Crackhead. We've all heard the term, used to describe those individuals who struggle with drug addiction. These terms are dismissive and disdainful; they reflect a moral judgment that is a relic of a bygone era when our understanding of addiction was limited, when many thought that addiction was some sort of moral failing and should be a source of shame. We need to change the national discussion. Put simply, individuals with substance use disorders are our patients who need treatment. Mental Health Month is a good time to remember this important fact – and to ensure we carry the message throughout the year.

Scientific progress has helped us understand that addiction – also referred to as substance use disorder – is a chronic disease of the brain. It is a disease that can be treated – and treated successfully. No one chooses to develop this disease. Instead, a combination of genetic predisposition and environmental stimulus – analogous to other chronic diseases like diabetes and hypertension – can result in physical changes to the brain's circuitry, which lead to tolerance, cravings, and the characteristic compulsive and destructive behaviors of addiction that are such a large public health burden for our nation.

Consider that every day, 78 Americans die as a result of prescription opioid and heroin overdose, and the rate of heroin-related overdose deaths increased dramatically and claimed 10,574 lives in 2014. In addition to these tragic figures, the nation is seeing an increase in opioid-related pediatric exposures and poisonings. There has been a distressing rise in neonatal abstinence syndrome as a result of women being exposed to opioids during pregnancy. Misuse by older adults also has become an increasing concern. The rate of opioid-related hospital admissions has increased significantly over the last two decades across all age cohorts. Because of higher rates of substance use disorders in the current "baby boomer" cohort, illicit and nonmedical drug use among older adults is expected to increase in the future. The bottom line is that physicians must lead the nation in changing the tide of this epidemic.

The West Virginia State Medical Association and the AMA Task Force to Reduce Opioid Abuse want to ensure that America's physicians, patients and policymakers take action in three ways:

First, we must change the conversation about what it means to have a substance use disorder and we also must increase access to evidence-based treatments. This means putting an end to stigma, increasing access to medication-assisted treatment (MAT) for opioid use disorder, and supporting the expanded use of naloxone – a life-saving medication that can reverse the effects of an opioid-related overdose. People with a substance use disorder deserve to be treated like any other patient with a medical disease, and physicians are helping the nation understand how to do this. That is one reason the Task Force encourages increased education and training for MAT.

Second, we encourage physicians, dentists and other prescribers of controlled substances to register for and use prescription drug monitoring programs (PDMP) – as one tool to identify when a patient may need counseling and treatment for a substance use disorder. The trend among policymakers has been to use PDMPs to identify "doctor shoppers." This, by itself, is important, but the real work is to understand why a patient is seeking medication from multiple prescribers or dispensers – and to offer a pathway for treatment and recovery. The information in PDMPs can play a helpful role in identifying patients in need of help.

Third, consider that we must do a better job with prevention. This includes intervening early with teens who initiate alcohol and/or marijuana as well as efforts to encourage safe storage and disposal. Unused medications increase the risk of nonmedical use by adolescents who live in the home or by their friends. Unused medication also can be ingested by young children who are curious about what is inside the pill container. Implementing campaigns to educate the public on the importance of storing opioid medications locked and out of the reach of children, and properly disposing opioid medications following the end of use, can encourage these safe practices.

And this also includes recognizing that we must actively screen for and treat co-morbid psychiatric disorders in all our patients to ensure that they continue to receive the highest level of care since patients with psychiatric conditions may have even greater risk than the general population to misuse opioids. Furthermore, our patients would benefit from more active screening, brief intervention and referral to treatment (SBIRT).

There are additional issues that we must address. Pregnancy should not limit a woman's access to opioid medications for adequate pain relief. Pregnant women should not be coerced to withdrawal from

opioid treatment. And punitive measures taken toward pregnant women, such as criminal prosecution and incarceration, should be eliminated. These activities have no proven benefits and, in fact, deter pregnant women who use opioids from seeking prenatal care, leading to poor child health outcomes. The threat of punitive measures also limits the disclosure by pregnant women of critical information about their drug use to their physician. A pregnant woman should have the same freedom as others to openly discuss options with her physician, choose a course of treatment, and be monitored/supported by her physician.

We also need to guard against limiting MAT services. For example, many states have enacted limits on MAT for patients in Medicaid programs, who are incarcerated, or who have "failed" a prior treatment program. Just as an evidence-based treatment policy would not discriminate against a diabetes patient for being low-income, having been arrested, or not adhering with his or her diabetes treatment program, MAT's proven success should not be limited by these approaches either.

As physicians, we see the harsh reality faced by our patients with a substance use disorder. Stigmatizing patients helps no one. Our goal, as physicians and dentists, is to treat our patients and help them live as fully functional members of society. There are people in recovery at every level of government, the private sector and throughout our towns and communities. That is because treatment works.

Resources that the Task Force encourages physicians to use

- **Webinar | Addiction, Stigma and Discrimination: Implications for Treatment and Recovery**
  Providers' Clinical Support System for Medication Assisted Treatment

- **CME | Stigma in Methadone and Buprenorphine Maintenance Treatment**
  Providers' Clinical Support System for Medication Assisted Treatment

- **Webinars & Activities | Substance Use Disorders**
  The American Psychiatric Association

- **CME| Featured Courses on MAT and Pain Management**
  The American Psychiatric Association

- **CME | DATA 2000 8 Hour Waiver Qualifying Buprenorphine Training**
  The American Society of Addiction Medicine

- **National Practice Guideline for the Use of Medications in the Treatment of Addiction Involving Opioid Use**
  The American Society of Addiction Medicine

- **Committee Opinion | Opioid Abuse, Dependence, and Addiction in Pregnancy Committee Opinion | Substance Abuse Reporting and Pregnancy: The Role of the Obstetrician-Gynecologist Committee Opinion| Nonmedical Use of Prescription Drugs**
  American Congress of Obstetricians and Gynecologists

- **CME| Buprenorphine Waiver Training**
  The American Academy of Addiction Psychiatry

- **Webinar| MAT Office-Based Treatment of Opioid Dependence**
  Providers' Clinical Support System for Medication Assisted Treatment Self Study at the American Osteopathic Academy of Addiction Medicine

- **Healthcare Brief | Medication-Assisted Treatment for Opioid Addiction**
  Office of National Drug Control Policy

REPORT OF RESOLUTIONS COMMITTEE
February 27, 2016

Your Committee on Resolutions has carefully considered the Resolutions offered in the First Session of the House of Delegates on Saturday, February 27, 2016.

We are happy to report that a number of interested physicians appeared at the Open Meeting of the Committee on Saturday morning and discussed in detail the Resolutions pending before the Committee. The cooperation and input of those physicians present was most helpful to the Committee in reaching decisions and we express appreciation to those who took the time to attend the opening hearing.

Mr. Speaker, your Committee assures the members of the Association that the guiding interest in its deliberations continues to be the potential impact of each of the resolutions on the practice of medicine, the medical profession and the patients for which our physicians care.

**********HOUSE ACTIONS**********

Resolution 1-2016 – *Bylaws Change to Allow PA's to Become Associate Members of WVSMA*

RESOLVED, That the WVSMA amend its Bylaws by adding the following section:

Chapter 1. Membership, Sec. 7.1 Physician Assistants Members shall be those persons who are licensed and employed as Physician Assistants in West Virginia and who are sponsored by an active physician member of the WVSMA. Physician Assistants members are not eligible to hold office but may have elected or appointed committee membership, at the discretion of the acting WVSMA President.

Mr. Speaker, your Committee heard mostly positive discussion in favor of Resolution 1. Accordingly, your Committee recommends that Resolution 1 be adopted and referred to Council for implementation as soon as feasible.

HOUSE ACTION: ADOPTED AND REFERRED TO COUNCIL FOR IMPLEMENTATION

Resolution 2-2016 - *WV Board of Medicine Opiate CME Requirement for Physicians*

Mr. Speaker, your Committee considered considerable testimony regarding Resolution 2, mostly in opposition to the original Resolveds. Accordingly, your Committee recommends that the following Substitute Resolution 2 be adopted in lieu of Resolution 2, as follows:

RESOLVED, That the WVSMA explore legislative and/or regulatory opportunities to change the frequency of the State of West Virginia mandated CME requirement, when feasible, regarding proper prescribing of opioids by physicians.

HOUSE ACTION: ADOPTED SUBSTITUTE RESOLUTION 2-2016

Resolution 3-2016 – *Recognizing NBPAS Board Recertification as an Equal Alternative to ABMS MOC and Recertification Process*

Mr. Speaker, your Committee heard testimony mostly in opposition to Resolution 3. It was also brought to the Committee's attention that the AMA is currently studying this issue with a report due back at its Annual Meeting in June 2016. Accordingly, your Committee recommends Resolution 3 not be adopted.

HOUSE ACTION: NOT ADOPTED

Resolution 4-2016 – *Mandating the WV Board of Medicine Produce Timely and Open Documentation of Medical Board Meetings on its Website*

Mr. Speaker, your Committee heard considerable testimony in opposition to Resolution 4. Several speakers mentioned the potential damage to physicians caused by posting Board actions on frivolous cases resolved in the physicians favor. Accordingly, your Committee recommends that Resolution 4 not be adopted.

HOUSE ACTION: NOT ADOPTED

Resolution 5-2016 – *Mandating the WV Board of Medicine Provide Free Public Documents in Requested Electronic Format in WV Chapter 29B – Freedom of Information Act*

Mr. Speaker, your Committee heard limited but strong testimony in opposition to Resolution 5. Accordingly, your Committee recommends that Resolution 5 not be adopted.

HOUSE ACTION: NOT ADOPTED

Resolution 6-2016 – *Mandating WV Board of Medicine Adherence to Administrative Law 64CSR89A – Uniform Credentialing for Healthcare Practitioners (2004)*

Mr. Speaker, your Committee heard testimony mostly in opposition to Resolution 6. Accordingly, your Committee recommends that Resolution 6 not be adopted.

HOUSE ACTION: NOT ADOPTED

Resolution 7-2016 – *WVSMA Membership Communication Blog – Discussion Group*

Mr. Speaker, your Committee heard considerable testimony on Resolution 7. Concerns were expressed about resources needed to maintain and properly manage a member blog and whether or not it was

appropriate for WVSMA to do this. However, several speakers indicated that the WVSMA should continue to explore opportunities to improve communication with its members and the general public, including the possible development of a WVSMA Member Application designed for smartphones and other electronic platforms. Accordingly, your Committee recommends that the following Substitute Resolution 7 be adopted in lieu of Resolution 7, as follows:

RESOLVED, That the WVSMA continue to explore opportunities to improve communication with its membership and the public, including the adoption and implementation of a membership application for electronic platforms.

HOUSE ACTION: ADOPTED SUBSTITUTE RESOLUTION 7

Resolution 8-2016 – *Opposition to State Medical Board Participation in the Federation of State Medical Boards (FSMB)*

Mr. Speaker, your Committee heard testimony in opposition to Resolution 8. Furthermore, your Committee believes that this resolution exceeds the policy jurisdiction of the WVSMA. Accordingly, your Committee recommends that Resolution 8 not be adopted.

HOUSE ACTION: NOT ADOPTED

Resolution 9-2016 – *Opposition to the Interstate Medical Licensure Compact*

Mr. Speaker, your Committee heard testimony in opposition to Resolution 9. Your Committee noted that in 2015, West Virginia became the 5th state to join the Interstate Medical Licensure Compact. Last year, the WVSMA House of Delegates referred this matter to WVSMA Council, which ultimately decided in August 2015 to monitor the implementation of the Compact in West Virginia and remain neutral at this time. Accordingly, your Committee recommends that no action be taken on this issue and that Resolution 9 not be adopted.

HOUSE ACTION: NOT ADOPTED

Resolution 10-2016 – *Placing Patient Care Before EMR Integration and Hospital Profits*

Mr. Speaker, your Committee heard considerable testimony in favor of the intent of Resolution 10; however, your Committee offers the following Substitute Resolution 10 in lieu of Resolution 10, as follows:

RESOLVED, That the WVSMA continue to support and encourage the evolution and implementation of medical information technology to improve patient care.

HOUSE ACTION: ADOPTED SUBSTITUTE RESOLUTION 10

Resolution 11-2016 – *Prescription Pseudoephedrine - WITHDRAWN*

Resolution 12-2016 – *Supporting Pharmacists Administering HPV and Flu Vaccines through Physician Prescriptions*

Mr. Speaker, your Committee heard considerable testimony in favor of the adoption of Resolution 12 with some clarification as to patient ages. Accordingly, your Committee recommends that Resolution 12 be adopted as amended as follows:

RESOLVED, that the WVSMA support the ability for Pharmacists to dispense and inoculate patients with HPV and Flu Vaccinations in the appropriate patients ages 11 to 18 years as determined by the Advisory Council on Immunization Practices (ACIP) recommendations set forth by the Centers for Disease Control (CDC), when presented with a prescription from a physician, and there are no contraindications to those patients receiving that vaccine.

HOUSE ACTION: ADOPTED RESOLUTION 12 AS AMENDED

Resolution 13-2016 – *Informed Consent and Documentation Process*

Mr. Speaker, your Committee considered Resolution 13, pertaining to Informed Consent Process and Documentation. This resolution was offered by the WV Orthopedic Society (WVOS) as policy it had recently adopted and is encouraging the WVSMA to adopt identical or similar policy. As there were more questions than answers regarding the WVOS Policy, your Committee recommends that Resolution 13 be referred to the Council for study and report due at the August Healthcare Summit.

HOUSE ACTION: REFERRED TO COUNCIL FOR STUDY

Resolution 14-2016 – *Reimbursement for Licensed Mental Health Therapists*

Mr. Speaker, your Committee considered Resolution 14, pertaining to Reimbursement for Licensed Mental Health Therapists. Accordingly, your Committee recommends that Resolution 14 be referred to Council to further evaluate this resolution and determine what exactly is meant by the term "properly pay" licensed mental health therapists.

HOUSE ACTION: REFERRED TO COUNCIL FOR DECISION

Resolution 15-2016 – *Sham Peer Review*

Mr. Speaker, your Committee considered Resolution 15, pertaining to Sham Peer Review. There was

some debate over the exact meaning of the term "sham peer review" and the author of Resolution 15 was not present to clarify. Accordingly, your Committee recommends that Resolution 15 not be adopted due to lack of information and the concern the Committee has with the term "Sham Peer Review."

HOUSE ACTION: NOT ADOPTED

Resolution 16-2016 – *Enforcement of Coverage and Reimbursement for All Procedures Covered by West Virginia Medicaid and Being Administered by its Managed Care Organizations*

Mr. Speaker, your Committee considered Resolution 16 and recommends that Resolution 16 not be adopted because legislation on this issue currently exists and the Resolutions Committee feels that any concerns need to be evaluated on an individual basis through the complaint system.

HOUSE ACTION: NOT ADOPTED

Resolution 17-2016 - *SB 437, 69CSR8, 69-8-14, W.Va. code 29A-3-15 and OHFLAC (Office of Health Facilities Licensures Certification) passed in April 2014 should not Discriminate Private vs. Hospital Employed Physicians who Prescribe Opioids*

Mr. Speaker, your Committee heard no testimony regarding Resolution 17; however, due to the many issues raised in the Resolveds, your Committee recommends that Resolution 17 be referred to the Council for further study.

HOUSE ACTION: REFERRED TO COUNCIL FOR STUDY

Resolution 18-2016 – ACCME Proposed Changes in "Accreditation with Commendation" Continuing Medical Education (CME) Criteria Assessment Methodology

RESOLVED, That the WVSMA request our AMA to study the validity, reliability and application practicality of the proposed ACCME changes in its method for assessing compliance with criteria for "Accreditation with Commendation," with a report back to the AMA House of Delegates by I-2016.

Mr. Speaker, your Committee considered Resolution 18. The author of Resolution 18 is Chair of the WVSMA CME Committee and expressed concern that the new ACCME changes will place considerable burden on the WVSMA and its accredited providers to actually attain "accreditation with commendation," and that the ACCME needs to hear from the AMA and its member states regarding this issue. Accordingly, your Committee recommends adoption of Resolution 18 and submission by WVSMA to the AMA House of Delegates for consideration at its 2016 Annual Meeting.

HOUSE ACTION: ADOPTED AND REFERRED TO AMA

Mr. Speaker, we wish to thank the members of the WVSMA who appeared before the Committee for their participation, patience, enthusiasm, wisdom, endurance, and time devoted to the study of the resolutions.

In addition to me, as Chair, the appointed members of the Committee who participated in these deliberations were:

David Avery, MD – Speaker of the House
Bradley Henry, MD – Vice President
Sherri Young, DO – Legislative Committee Chair
James Felsen, MD
Joe Reed, MD
Coy Flowers, MD

WVSMA Staff
Brian Foy, Executive Director
Karie Sharp, Director, Operations & Conference Services
Barbara Good, Physician Practice Advocate

Respectfully submitted,

Bradley Henry, MD
WVSMA Vice President 2015-2016

2016 Legislative Wrap-Up

The 2016 Legislative Session adjourned on March 15. During the session, legislators introduced 1,896 bills (287 more than in the 2015 session!) and passed 277 of those. A significant number of the bills addressed healthcare issues; the following is a summary of some of the major healthcare-related bills that completed legislative action.

SB 7 The Wrongful Conduct Rule

The WVSMA strongly supported this bill and worked closely with legislators to ensure that it protects physicians from frivolous lawsuits. The need for this bill became apparent after the Tug Valley case last summer, in which the WV Supreme Court ruled that substance abusers could sue their physicians for damages related to their own wrongful conduct. (For more information, see the story in the July/August 2015 issue: "Court Watch: Criminal Drug Abusers are Allowed to Sue their Doctors.")

Last year the WV Legislature passed a law barring such claims by plaintiffs *convicted* of felony acts, but that was too narrow of a rule, as the Tug Valley case proved. This year's bill, which was co-sponsored by Sen. Stollings (an identical bill was introduced in the House co-sponsored by Dels. Waxman, Rohrbach and others), changed the language to bar claims by plaintiffs who committed, attempted to commit, or were fleeing from a felony. It also added the following language specific to health care providers:

"No action related to the prescription or dispensation of controlled substances may be maintained against a health care provider pursuant to this article by or on behalf of a person whose damages arise as a proximate result of a violation of the Uniform Controlled Substances Act, . . . the commission of a felony, a violent crime which is a misdemeanor, or any other state or federal law related to controlled substances" unless the provider violated the law when prescribing or dispensing the drug, *and* that violation caused the plaintiff's injury (§ 55-7B-5 (d)).

SB 7 passed the Senate unanimously and by an overwhelming majority in the House. Governor Tomblin signed it March 2, and it goes into effect May 24, 2016.

SB 10 The Procedure Ban **(also called the Dismemberment Bill)**

This very contentious bill prohibits physicians from performing a procedure commonly known as "dilation and evacuation" (D&E) for termination of pregnancy after 13 weeks gestation. According to the American Congress of Obstetricians and Gynecologists (ACOG), this procedure is safer and results in fewer complications compared to alternatives.

The WVSMA, along with WV ACOG, strongly opposed the bill because it interferes with the patient-physician relationship and penalizes physicians for performing an evidenced-based and medically preferred procedure that is considered the standard of care. The bill prohibits the procedure unless it is necessary to avert the patient's death or "serious risk of substantial and irreversible physical impairment of a major bodily function." Physicians who perform the procedure can lose their medical license.

The bill passed the Senate 24-9 and the House 86-13. The governor vetoed the bill, but the legislature overrode the veto. It goes into effect May 29, 2016.

SB 15 The Learned Intermediary Doctrine

The bill provides pharmaceutical companies and sellers with a defense from suit so long as they provide information about their product to a learned intermediary (e.g., a physician) who then is responsible for relaying the warning to the consumer.

The WVSMA opposed this bill because it shifts the burden from manufacturers and pharmacists to prescribers to provide warnings to patients regarding risks from potentially dangerous medications and medical devices.

According to the American Bar Association, only 22 states have officially adopted the doctrine--although it has been applied to some extent in most states--but courts have carved out exceptions along the way, most notably for companies engaging in direct-to-consumer adverting.

West Virginia was the only state to have expressly rejected the Learned Intermediary Doctrine; this bill reinstates it. In a wrongful death case in which a patient died after taking the drug Propulsid®, the WV Supreme Court of Appeals held, "manufacturers of prescription drugs are subject to the same duty to warn consumers about the risks of their products as other manufacturers." (*Johnson & Johnson v. Karl*, 220 W. Va. 463 (2007)).

The bill is problematic because it creates another administrative burden for physicians: although they already counsel patients on potential risks associated with treatments, now they will have to specifically document their conversations regarding medications and medical devices. The bill goes into effect May 17, 2016.

SB 123 Expedited Partner Therapy

The third try was the charm for this common-sense bill, sponsored by Sen. Stollings, and strongly supported by the WVSMA along with the WV Perinatal Partnership. The bill allows healthcare providers to prescribe antibiotics for STDs to their patients' sexual partners. It passed both chambers unanimously except for a single nay vote by Del. McGheehan (Dels. Hornbuckle and Moore did not vote.) It goes into effect May 16.

SB 454 Regulating Substance Abuse Treatment Facilities **(formerly SB 460)**

This bill, which creates regulations for opioid treatment facilities, was a Governor's bill, and its provisions were modeled on pain clinic regulations. The WVSMA and other groups spent a lot of time working with representatives from the governor's office and DHHR and discussing the issue with legisla-

tors to modify the bill so that it would not put treatment facilities out of business! The bill was significantly amended during the session, and the Senate and House did not concur on the amended version, so it went to conference committee. The conference committee included Delegates Stansbury, Rohrbach, and Campbell, and Senators Takubo, Stollings, and Leonhardt.

The version of the bill provides rules for registration, fees, and inspections; includes operational requirements; and allows providers to apply for waivers or variances. It goes into effect June 10, 2016.

SB 597 Exempting the Health Care Authority from Antitrust Actions

This bill exempts the Health Care Authority, as well as any hospitals and health care providers who comply with the Authority's rules and orders, from state and federal antitrust actions. It also immunizes "cooperative agreements" between academic medical centers and other hospitals so long as they have been approved by and are subject to supervision by the Authority. (The drafters might have had a particular merger in mind?) The introduced version of the bill dealt with the administration and compensation of the Health Care Authority Board and would have eliminated the Authority's rate review, but the bill took an interesting route through the House and ended up in conference with Dels. Ellington, Lane, and Perdue and Senators Ferns, Blair, and Plymale, who drafted the final version. It was signed by the governor and went into effect as of passage on March 12.

SB 602 The Patient Injury Compensation Fund

This bill eliminates the patient injury compensation fund (PICF), which was created as part of the Medical Professional Liability Act (MPLA) to cover plaintiff's economic damages that exceed the $500,000 trauma cap. The PICF was originally funded by money from the tobacco settlement, and later by the state. With insufficient state funding to cover the current liability, estimated at upwards of $20 million, there was a concern that the courts might rule the trauma cap unconstitutional, so the purpose of the bill was to preserve the trauma cap.

To pay for the remaining claims against the PICF, fees will be assessed against physicians, trauma centers, and plaintiff's attorneys. Physicians will be charged a biennial fee of $125 to be paid along with their licensure fee beginning in July 2016 and continuing through 2019. A fee of $25 per trauma patient will be levied on trauma centers from July 1, 2016, through June 30, 2020. Claims brought under the MPLA will be subject to an assessment of one percent of the gross amount of any settlement or judgment from July 1, 2016 through June 30, 2020.

SB 627 Allowing Physicians to Decline Prescribing Controlled Substances

This bill, introduced by Dr. Takubo and cosponsored by Dr. Stollings, allows physicians to decline to prescribe controlled substances to patients or to decline to continue prescribing them. It also limits the liability of providers who prescribe in accordance with FDA recommendations, as well as those who decline to prescribe a controlled substance based on their reasonable judgment that the patient is misusing or diverting the substance. The bill goes into effect June 8.

SB 658 The Volunteer Bill

This bill would have allowed actively practicing physicians to provide voluntary healthcare services to needy or indigent patients, and it would have conferred immunity from liability for those services (except in the case of gross negligence or willful misconduct), when the services were arranged through a clinic carrying liability insurance of $1 million per occurrence. The bill also would have allowed physicians providing volunteer services to qualify for up to 10 hours of CME credit per licensure cycle for those services. Unfortunately, Governor Tomblin vetoed the bill, citing concerns that the CME provision would "decrease critical training hours received by our healthcare professionals though their continuing education courses." The governor also stated that he considered the bill unnecessary because professionals are already encouraged to donate their time to serving needy and indigent patients.

HB 4040 The Step Therapy Bill

The WVSMA joined with a large coalition of provider groups and patient advocates to support this bill, which was sponsored by Dels. Rohrbach and Waxman and others.

Insurance companies sometimes require patients with certain medical conditions to go through "step therapy protocols," which establish a sequence of prescription drugs that a patient has to try before the insurer will cover other drugs that the provider determines to be medically appropriate. Such protocols can cause unnecessary and dangerous delays and hinder the physicians' ability to effectively treat their patients. This bill allows prescribers to request exceptions to step therapy protocols, and it requires insurers to provide "a clear and convenient process" to override step therapy protocols, and the process must be "made easily accessible" on the company's website.

The bill passed both chambers unanimously and goes into effect June 10.

HB 4334 The APRN Bill

The APRNs put all of their legislative efforts into this scope of practice bill, and they had a lot of support from some heavy hitters: the AARP, President Obama's FTC, Americans for Prosperity, WV Citizen Action Group, even the WV Funeral Directors Association. All we had was data and a concern for public health and safety.

The WVSMA tried to work on a compromise bill before session. The WVSMA hosted meetings with APRN representatives (as recommended by Dr. Dan Foster) starting last summer and continuing through the session. Dr. Gupta attended one of the meetings, and told the APRNs that, in response to their concern about finding collaborating physicians, the DHHR would permit and encourage local health officers to collaborate with APRNs. Despite those conversations, the bill the APRNs introduced sought even more concessions than the bill they introduced in 2015, and the nurses continued to claim that some could not find collaborators.

This year's introduced bill would have allowed APRNs to prescribe autonomously after only two years in practice under a collaborative agreement with either a physician or another APRN; expanded their formulary to include Schedule II medications; increased the duration of their Schedule III prescriptions to 30 days; and provided global signatory authority. APRNs portrayed the bill as one that would expand health care to rural areas, even though they already are allowed to practice independently, and they told us that only one to five percent of APRNs would be likely to practice independently.

Ironically, during the House Government Organization meeting, Chairman Howell, as well as a few other delegates, remarked that they knew it was a bad bill but voted in favor of it anyway because they thought doctors should have tried to compromise. Some of the legislators made other negative comments about physicians, as well. The original bill passed the House 72-20.

Once the bill moved to the Senate, it was assigned to the Health Committee, where Senator Stollings introduced a compromise amendment. The Stollings amendment incorporated the provisions the APRNs had told us during the compromise meetings they wanted, including allowing them to remain under the nursing board and requiring standardized collaborative agreements, an advisory committee to report to the nursing and medical boards, joint rulemaking authority, and signatory authority for death certificates and certain other documents. The amended bill easily passed the Senate Health committee. At first the nurses seemed happy and even sent their members a celebratory email encouraging support for the amended bill. But then, unfortunately, Sen. Leonhardt, a staunch advocate for APRNs, drafted a new amendment that granted APRNs more privileges and removed the joint rulemaking authority. The APRNs then supported the Leonhardt amendment and it passed.

The final version of the bill permits APRNs to have a three-year pathway to autonomy, no Schedule II authority, 30-day prescriptions of Schedule III drugs, and global signatory authority except for certificates of merit in medical malpractice cases. It allows for an advisory committee, but not joint rulemaking.

Although the final version of the bill is better than the introduced version, it has some significant problems. For example, it allows global signatory authority equivalent to physicians (except for certificates of merit in malpractice cases), rather than allowing authority for specific documents. Also, the advisory panel will includes six APRNs, including at least one nurse midwife and one CRNA, "all of whom actively *prescribe* prescription drugs," even though CRNAs typically only *dispense* medications. Further, it totally disregards the Legislative Auditor's Performance Evaluation and Review Division (PERD) report, which included recommendations that medical boards license APRNs and promulgate rules; nurse midwives practice under a collaborative agreement in all circumstances; and any additional signatory authority for APRNs should be specifically defined in statute.

Because the bill had substantive and technical problems, and because of the potential negative impact on public health, the WVSMA and other groups asked the governor to veto the bill, but he signed it into law on March 30, and it goes into effect June 10.

HB 4347 Allowing Pregnant Women to Have Priority for Substance Abuse Treatment

This bill, introduced by Del. Ellington and co-sponsored by Dels. Rohrbach, Stansbury, and others, is very reasonable and straightforward. It provides a new section to the code that states, "Substance abuse treatment or recovery service providers that accept Medicaid shall give pregnant women priority in accessing services and shall not refuse access to services solely due to pregnancy as long as the provider's services are appropriate for pregnant women." It passed without amendment with only Dels. McGheehan and Azinger voting against it. It goes into effect June 10.

HB 4365 The Certificate of Need Bill

The WVSMA first met with the Hospital Association and other interested parties last summer to discuss a bill to update and streamline the CON process. If only we could have streamlined the drafting process! The original intent was to update the CON process by modifying the fee structure, and imposing new administrative requirements and time limits. It was also intended to include new exemptions for equipment replacement, and facility repairs and renovations. A lot of groups were interested in the bill, though, and the bill underwent various committee and floor amendments. The final version includes a very long list of new exemptions to the CON process, including birthing centers, CT scanners valued at $250,000 or less, kidney disease treatment centers, behavioral health centers, and facilities that provide laboratory or imaging services and are owned or operated by health care professionals. It goes into effect June 10.

HB 4388 Stroke Centers

This bill, sponsored by Del. Rohrbach and others, creates a new designation of "comprehensive, primary and acute stroke-ready hospitals." It allows the WV DHHR to promulgate rules for an application process; criteria for designation and certification; and protocols for assessment, treatment, and transport of stroke patients. It passed unanimously and goes into effect June 10.

HB 4428 Allowing Optometrists to Prescribe Hydrocodone

This bill would allow optometrists to prescribe hydrocodone and hydrocodone-containing products. The WVSMA strongly opposed the bill because it would expand the prescriptive authority for midlevel providers to allow them to prescribe dangerous narcotics.

The bill purported to reinstate optometrist's ability to prescribe medications they were formerly allowed to prescribe. Optometrists can prescribe Schedule III drugs for a duration of 72 hours, but they are not allowed to prescribe any Schedule II drugs. When the FDA reclassified hydrocodone-containing products, such as Vicodin and Lortab, as Schedule II in October 2014, optometrists and other midlevel providers, who are limited to prescribing Schedule III-V controlled substances, had to stop prescribing them. The providers were never allowed to prescribe pure hydrocodone (Zohydro), though, because it has always been classified as a Schedule II drug.

Because of the significant public health risk associated with hydrocodone and hydrocodone-containing products, the WVSMA urged the governor to veto HB 4428. In addition, the WVSMA noted in its letter to the governor that the bill was technically flawed since it claimed to merely restoring privileges previously granted, yet optometrists were never before permitted to prescribe pure hydrocodone. Nonetheless, the governor signed the bill and it goes into effect June 10.

HB 4463 The Telemedicine Bill

Sponsored by Del. Rohrbach and cosponsored by Dels. Waxman, Stansbury, Ellington, and others, this bill provides requirements for licensure and standards of care for telemedicine providers. The WVSMA drafted the bill with input from the medical boards, the AMA, and recommendations from WVSMA members. (For more information about the issue, please see "Legislative News: Update on Telemedicine" in the Nov./Dec. issue.) The bill requires that telemedicine providers in most cases must establish the patient-physician relationship through real-time videoconferencing, and prohibits prescriptions of Schedule II medications or any pain-relieving controlled substances based solely on telemedicine encounters. The bill passed both chambers unanimously and goes into effect June 9.

HB 4537 Regulating Chronic Pain Clinics

This bill, which was sponsored by Dels. Stansbury, Rohrbach, and Ellington, slightly modifies the definition of pain clinic as follows (strike-outs indicate language that will be removed from current code, and underlined language is new):

"Where in any month more than fifty percent of patients of the ~~prescribers or dispensers~~ clinic are prescribed or dispensed opioids or other controlled substances specified in rules promulgated pursuant to this article for chronic pain resulting from ~~nonmalignant~~ conditions that are not terminal." The bill also removes the exemption for medical affiliates, although it retains the exemption for hospitals and for physician practices owned or controlled by hospitals and entities which own or control hospitals. The bill passed the senate unanimously and the house with only a few nays. It goes into effect June 10.

If you have questions or comments about any of the bills described above or others that were introduced this session, suggestions for bills for next year, or if you would like to join the WVSMA Legislative Committee, please contact Susan@wvsma.org.

Obituaries

The WVSMA remembers our esteemed colleagues...

John Anthony Bellotte, MD

Dr. John Anthony Bellotte, age 69, of Bridgeport, WV passed away on Sunday, December 20, 2015 at his residence after a long fight with cancer. He was born on March 15, 1946 in Bridgeport, WV; the son of the late Joseph A. Bellotte and Mary Teresa (Paletta) Bellotte.

John is survived by his wife, Teresa (Parsons) Bellotte; three sons, Bradley Bellotte, M.D., Brent Bellotte, M.D., and Travis Bellotte, M.D.; a daughter, Heather Bellotte, M.D.; Godson Michael Bellotte; stepson Andy Hess; three grandchildren, Emma Bellotte, Kendra Hess, and Charles Clinton Hess, IV; spiritual granddaughter, Audalynn May Cline; and two brothers, Anthony and David Bellotte.

In addition to his parents, he was preceded in death by his two brothers, Joseph and Samuel Bellotte.

Dr. Bellotte attended St. Mary's High School and went on to graduate from WVU School of Medicine in 1972. He was known throughout the medical community for his work in pulmonary and critical care medicine, treating hundreds of black lung patients in the Appalachians. His passion for teaching will be remembered by a generation of resident physicians who graduated from United Hospital Center and WVU School of Medicine. He loved travelling with his wife, the theatre, and the performing arts.

William Morgan Jr., MD

Dr. William C. Morgan, Jr. passed away on Tuesday March 29, 2016, at the Arthur B. Hodges Center in Charleston, West Virginia. He was 90 years old. He was a highly respected physician who practiced in Charleston for fifty years, first in ENT then specializing in Otology.

Dr. Morgan was predeceased by his parents, William C. Morgan and Nadine Cummins Morgan. He is survived by his wife of sixty-eight years, Billie Sue Morgan, their daughter, (Leigh) Ann Morgan Tyler of Brighton, England and sons, (John W.) Jay Morgan, wife, Catherine (Kitty) Ingersoll Morgan of Charleston and Robert (Keith) Morgan, wife, Terri Bissinger Morgan, of Madison, MS. Bill is also survived by his two grandchildren, Catherine (Taylor) Morgan of Charleston, and William C. Morgan, III (Will) of Madison, MS. The family wishes to extend a special thanks to Angela Allen who took such great care of Bill for many years.

Born June 18, 1925, in Welch, West Virginia, Bill graduated from Welch High School at the age of sixteen. He attended West Virginia University and the University of Virginia where he graduated from medical school in 1948. After completing his internship at Indianapolis General Hospital, he served on active duty in the U.S. Navy from 1949 to 1951 as a medical officer at he Portsmouth Navel Hospital and at sea for a destroyer division. He completed his residency in otolaryngology at the University of Virginia and was certified as a Diplomat in the Academy of Ophthalmology and Otolaryngology in 1955.

Dr. Morgan began his practice at Shepherd Hospital in Charleston and later became one of the founders of the Eye and Ear Clinic of Charleston. Over the years he was on staff at CAMC and St. Francis Hospitals.

Dr. Morgan was a member of the American Medical Association, the Southern Medical Association and the American College of Surgeons. He was also a member of the Neurotology Society for which he served as Vice President and Chairman of the Southern Section in 1979. He belonged to the American Neurological Society and served as President of the Otosclerosis Study Group in 1994. Dr. Morgan was also on the board of the National Hearing Conservation Association. Dr. Morgan had numerous publications in medical literature and was involved in temporal bone courses in Dallas and Pittsburgh for more than twenty years. He was a clinical professor of otolaryngology at West Virginia University Medical School and a visiting professor at the University of Miami and the University of Virginia Medical Schools. Dr. Morgan served as President of the Ophthalmology and Otolaryngology Society of WV, Treasurer of the WV State Medical Association and member of the WV Hearing Aid Board.

In lieu of flowers, the family suggests that donations be made to the University of Virginia Medical School Foundation, P.O. Box 800776, Charlottesville, VA 22908. Memories may be shared by visiting www.snodgrassfuneral.com.

Mabel Stevenson-Marshall, MD

Mabel Stevenson-Marshall MD, died March 1, 2016 in Huntington.

She was born Jan. 9, 1929 in County Down, Northern Ireland, to a Presbyterian minister and his wife. After her education at Victoria College Belfast, she attended medical school at Queen's University Belfast, obtaining her MD degree in 1952 at the age of 23. Following internship and residency in pathology and hematology, she married Dr. Robert Marshall before sailing to Australia to research fellowships at the Baker Institute and Melbourne University. Then followed three years at the Mayo Clinic in Rochester, Minn. In 1960 she and her husband were recruited as founding faculty members at the newly opened four year School of Medicine at West Virginia University in Morgantown as professors of pathology and cardiology, respectively. Mabel was also active in hematology, particularly blood clotting disorders, and she was director of the University Blood Bank. She published scientific papers and was co-author of a textbook of hematology. In that era, medicine in the United States was nearly a male monopoly. Mabel encouraged young women to enter medical school, thus contributing to the present era when 50 percent of newly graduated medical doctors are women. Mabel received many honors, including Fellowship of the American College of Physicians, and the Laureate award of the West Virginia Chapter of APC. In 1976 Mabel and her husband moved from Morgantown to Huntington, where she became director of the Red Cross Blood Transfusion Center. Later, she joined the administrative staff of St. Mary's Hospital as its founding director of Medical Affairs. At different times she served as president of the West Virginia Medical Institute and as president of the Cabell County Medical Society, and was active in other civic organizations. Subsequent to her retirement she remained active in her hobby of gardening.

Mabel was predeceased by her son, Ian Marshall, MD. She is survived by her husband, Robert Marshall, MD; their children, Stephen JD and Deirdre MD; seven grandchildren; two brothers, Hugh and William; and a sister, Betty.

Family guestbook at www.klingelcarpenter.com.

West Virginia Native Teaches 2016 CMOM Course!

by Barbara Good, CMC, CMOM, CMCO
Physician Practice Advocate, WVSMA
barbara@wvsma.org

The WVSMA's recently completed Certified Medical Office Manager (CMOM) class was taught by Pam Joslin, MM, CMC, CMIS, CMOM. Ms. Joslin, an instructor for Practice Management Institute (PMI) in San Antonio, returned to her native West Virginia for the first time as an instructor. She formerly managed medical practices in the Charleston area, including a multi-specialty group and an Ambulatory Surgical Center.

Said Joslin "It was a joy to teach this CMOM class in West Virginia. Although I've traveled across the country, there's truly no place like home!"

Attendees of the course included several who are currently managing medical practices and others who want to acquire the management skills in order to become a practice administrator. The class studied all aspects of practice management, including financial management, practice administration, compliance management and personnel management.

Members of the class, which was facilitated by Physician Practice Advocate Barbara Good, included:

Sabra Blake	South Charleston, WV
Mary Boggs	Elkins, WV
Shannon Castleberry	Martinsburg, WV
Rachel Connolly	Parkersburg, WV
Sandra Greer	Morgantown, WV
Meagan Iser	Morgantown, WV
Peter Kazil	Charleston, WV
Erica Keiffer	Charleston, WV
Tawnya Mosteller	Charleston, WV
Jennifer Muslin	Hurricane, WV

Highmark Director Retiring

Joyce Landers, Director of Provider Relations for Highmark Blue Cross Blue Shield West Virginia, recently announced her retirement, effective May 20, 2016.

Joyce joined the former Mountain State Blue Cross Blue Shield in 1984 and has spent her entire career with the insurer. Her work history with the company has included claims, customer service, corporate training and external provider relations.

She is well known in the physician and insurance arena for her knowledge and leadership abilities. Under her leadership, the provider relations department flourished and physician practices were well instructed on the insurer's polices.

Joyce has been a friend to physician practices for many years and all will miss her capable management and resolution of even the most difficult provider issues.

The WVSMA joins our physicians and their staffs in congratulating Joyce on a career well done and wish her the best in her retirement! We'll miss you, Joyce!

Marshall School of Medicine graduate receives national American Medical Association award

Ron Stollings, MD

Ron D. Stollings, M.D., a 1982 graduate of the Marshall University Joan C. Edwards School of Medicine, was one of eight people to receive the American Medical Association's 2016 Nathan Davis Award for Outstanding Government Service.

Stollings, who is board-certified in internal medicine and practices in Madison, W.Va., has served in the West Virginia Legislature since 2006. He represents Boone, Lincoln, Logan, and parts of Mingo and Wayne counties and currently serves on four legislative committees, including Health and Human Resources and Finance.

Stollings previously served as chair of the Committee on Health and Human Resources and chair of the Committee on Confirmations, as well as chair of the Corridor G Regional Development Authority. He is a former member of the West Virginia Higher Education Policy Commission, past president of the West Virginia State Medical Association and past president of the Madison Rotary Club.

Nominated by Congressman Evan Jenkins, former executive director of the West Virginia State Medical Association, Stollings said he is deeply honored and humbled to receive the award.

"I am so grateful to be able to serve my community as a physician and through public service in the state senate," Stollings said. "In addition, I am extremely grateful to have wonderful mentors including Dr. Charlie McKown, Dr. Mabel Stevenson, Dr. Bertie Marshall, Dr. Skip Turner, Dr. Martha Mullett, Dr. Bill Neal, Dr. Pat Brown, Dr. Tino Amores and others. And I know these individuals share my belief that physician begins with "PH" for public health. Further, I appreciate my partners, especially Dr. Robert Atkins and staff, for working harder to allow my public service."

He has been recognized numerous times by various organizations for his outstanding contributions to medicine.

Marshall University School of Medicine graduating seniors participate in national match

Fourth-year students at Marshall, along with fellow students across the country, learned in March where they matched for residency training. In all, the 58 seniors were placed in programs ranging from family medicine and pediatrics to orthopaedic surgery and emergency medicine.

Assistant Dean of Student Affairs Amy Smith, M.Ed., said the Marshall students matched into excellent programs across the United States.

"We are extremely proud of these soon-to-be graduates," Smith said. "They will be heading to specialty programs at Dartmouth, Emory, Hershey Medical Center and the University of Chicago, as well as well-respected primary care residencies here at Marshall University and West Virginia University."

Four Marshall seniors also matched earlier this year in the U.S. Military Match, which placed them at Walter Reed National Military Medical Center and Eisenhower Army Medical Center, among others.

Approximately half the class will enter fields defined as primary care in West Virginia--family medicine, internal medicine, obstetrics/gynecology and pediatrics--continuing Marshall's mission of educating physicians for the nation's rural areas.

Marshall Schools of Medicine and Pharmacy receive U.S. Army grant for annual science camp

The Marshall University Joan C. Edwards School of Medicine and the Marshall University School of Pharmacy are recipients of a $40,000 UNITE grant from the U. S. Army Educational Outreach Program, which will be used to further develop the schools' annual Health Care Pipeline Initiative (HCPI).

HCPI is a summer immersion program for low income and/or minority high school students interested in health care, technology, research and engineering fields. The program historically has been a one-week residential camp, but will now expand to a four-week experience as a direct result of the UNITE grant.

Students entering 9th grade through the 12th grade in West Virginia, Kentucky and Ohio are eligible to apply for the summer program, which begins June 27 and runs through July 22. For more information on the program and application process, please visit: http://jcesom.marshall.edu/students/diversity/.

WVU Medicine recruits world-renowned cardiothoracic surgeon to lead new Heart and Vascular Institute

Vinay Badhwar, MD

Vinay Badhwar, M.D., F.A.C.S., F.A.C.C., will serve as the executive chair of the newly formed West Virginia University (WVU) Heart and Vascular Institute. Dr. Badhwar is internationally recognized as a master cardiac valve surgeon and a team-builder with extensive cardiovascular healthcare leadership experience. Badhwar will lead cardiovascular services for WVU Medicine.

The WVU Heart and Vascular Institute will be headquartered in the new $200 million, 10-story tower on WVU Medicine's main campus in Morgantown, scheduled to open in January 2017. The WVU Heart and Vascular Institute will additionally be home to WVU Medicine's statewide efforts in cardiovascular quality and research, clinical education, outreach, and statewide program development. WVU Medicine plans to open outpatient clinics affiliated with the WVU Heart and Vascular Institute across West Virginia and surrounding regions to complement the existing outpatient clinics in Fairmont, Elkins, Grafton, and Bridgeport.

Badhwar currently serves as the chief of cardiac surgery at the University of Pittsburgh's Presbyterian Hospital and director of cardiac surgery for the University of Pittsburgh Medical Center Heart and Vascular Institute. A national expert in complex mitral valve repair, atrial fibrillation surgery, minimally invasive valve surgery, and robotic surgery, Badhwar is that institution's current director of the multi-disciplinary Center for Mitral Valve Disease, co-director of the Center for Atrial Fibrillation, and director of minimally invasive and robotic cardiac surgery.

Badhwar will serve as the Gordon F. Murray Professor and Chief of the Division of Cardiothoracic Surgery in the West Virginia University School of Medicine's Department of Surgery.

WVU medical school graduates selected for residency training

West Virginia University School of Medicine's class of 2016 learned where they will continue training at the Match Day celebration Friday, March 18, on all three medical school campus locations in Morgantown, Charleston and Martinsburg.

Ninety-one students in the class of 2016 matched coast to coast in 20 different states training in 17 different specialties. A third of the class will continue training in West Virginia after graduation, many at training sites affiliated with WVU. They join more than 4,700 WVU School of Medicine alumni practicing or living around the world.

Nearly half the class, 47 percent, will train in internal medicine, pediatrics, family medicine, or obstetrics/gynecology, fields that typically represent primary care. The most popular fields this year were the specialties of pediatrics, internal medicine and family medicine. Some selected training opportunities are not offered anywhere in West Virginia, such as neurodevelopmental disabilities.

This particular class set a school record with the highest mean score on the United States Medical Licensing Exam (USMLE) Step 2CK test, which is required for graduation and licensure.

More than 18,000 U.S. allopathic medical school seniors, a 10 percent increase since 2012, and 17,000 other applicants vied for over 30,000 positions at 4,800 residency programs across the United States.

WVU has the largest number of graduate medical education offerings in the state, with more than 50 specialty training programs, all of which are fully accredited. One-half of the training programs are the only such specialty programs offered in the entire state.

Alison Mols, fourth year medical student

Residency training begins at WVU in July for more than 100 new residents from medical schools across the country.

The Aging Population of the USA and West Virginia — the Demographic Imperative

Todd H. Goldberg, MD
Associate Professor and Chief of Geriatrics, CAMC/WVU Charleston

Blair Saul, MSIII
West Virginia University School of Medicine, Charleston Division

Welcome to the special "Elder Mountaineer" issue of the *WV Medical Journal*. The topic couldn't be timelier! A "silver tsunami" is forecast for America and the world – a tidal wave of older people who will consume and compete for private and governmental health care resources and retirement budgets at every level (Das, 2015). It is vital for us as physicians and community leaders to be aware and prepared. This starts with knowing the demographic facts and resources that are available to us in caring for our elder "Mountaineers."

For better or worse, our state is at the forefront of demographic trends. According to the 2010 census (See Table 1 and Figures 1-2), West Virginia has the 4th highest median age of any state at 41.3 (compared to a national median of 37.2), as well as the second highest percentage of older adults in the nation (17.8% over 65, over 320,000 individuals out of a total state population of 1.85 million, compared to 14.1% of the total US population of 319 million). And as the "baby boom" generation ages these trends will only accelerate (US Census Bureau).

Is this plethora of older adults the result of good health and longevity in the Mountain State? Obviously not; we are repeatedly bombarded by media reports of our poor health measures, including high rates of diabetes and obesity. While many individuals do stay in West Virginia their entire lives and others return to live out their retirement years in the Mountain State, the percentage of the population under the age of 18 in West Virginia is only about 21%, the third lowest percentage in the country, indicating a lower than average birth rate and/or a larger departure of younger people. The age of the population varies by county in West Virginia (Figure 2), with Pocahontas County being the oldest with a median age of 47, and Monongalia County being the youngest with a median age of 29, not surprisingly since that county includes a large student population from WVU. Interestingly, in the early to mid-20th Century, West Virginia's median age was below the national average; it has been stated that the state's current high median age arose in large part from a massive out-migration of relatively young residents during the economic downturn of the 1980s (Hammond).

It is estimated that the U.S. percentage of senior citizens will equal 20% (72 million) by the year 2030. The most rapidly expanding demographic group continues to be the "oldest old" or those people over the age of 85. In 2010 there were 5.5 million Americans over 85 and by 2050, it is estimated that there will be 19 million Americans over the age 85 as the baby boomers age. In West Virginia it is estimated that the 85+ population will increase 68% from 31,779 to 53,375 individuals from the year 2000-2030 (Christadi, Deskins & Lego, 2014).

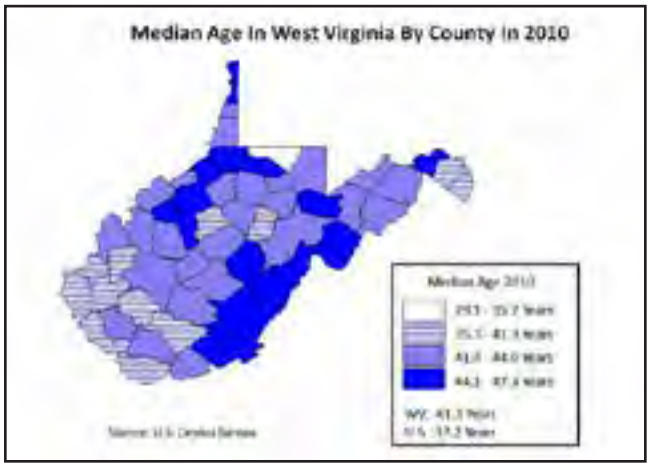
These trends have left our state with an older than average population and has contributed to the second highest elderly dependence ratio in the country at 25.0 (national average = 20.5) meaning that the burden on working persons to care for the elderly is higher in West Virginia than in any other state besides Florida (File & Kominski). It is therefore incumbent upon us as health care professionals to develop creative solutions that will help us to provide our older West Virginians with a safe and healthy environment in which to live out their "golden years."

Besides aging demographics, West Virginia has other characteristics that will further challenge the health care system in caring for the elderly. West Virginia is one of the poorest states, with one of the lowest per

Table 1: Some key population statistics for the United States and West Virginia

	USA	WV
Total Population (2014 Estimate)	**318,857,056**	**1,850,326**
% over 65	14.5%	17.8%
% under 18	23.3%	21%
% over 85	2.1%	2.4%
Median Age	37.2	41.3
% over 65 with disabilities/ADL impairment	37%	45%
Per Capita Income	$28,155	$22,966
Percentage Below Poverty Line	15.4%	17.9%

Figures 1 & 2. Median Ages by State and by County in WV, from US Census 2010.



capita incomes in the country (49th) (Social Security 2008 WV Quick Facts). Another challenge is access for our older patients living in rural parts of the state. More than 51% of our population lives in rural areas (the 7th most rural state in the nation), and it is estimated that anywhere between 25-80% of West Virginians live in rural areas with decreased access to health care facilities. Transportation can often be an issue for these individuals when they are in need of primary or specialty care, and isolation often becomes a safety issue when an elderly person or a person with dementia is living by themselves. Moreover, West Virginia also has one of the highest rates of emergency room visits, second only to Washington DC, and a lower than average rate of internet connectivity among the older population.

Alzheimer's **(See also special article on Alzheimer's in this issue).**

According to 2014-15 statistics from the Alzheimer's Association (www.alz.org) and the WV Alzheimer's Registry (www.wvadr.hsc.wvu.edu), approximately 5.3 million Americans and 36,000 West Virginians over 65 have Alzheimer's disease (11% of people over 65), with an additional 4,000 AD victims under 65 who suffer from Early Onset Alzheimer's disease. Unfortunately, it is estimated that by the year 2025, 44,000 or more West Virginians will have Alzheimer's (Alzheimer's Association, 2015). Recognizing the need for increased Alzheimer's training and services, the Alzheimer's Association nationally and in West Virginia along with the West Virginia Partnership for Elder Living in 2011 published "Make a Plan for Alzheimer's" which is available online at http://www.alz.org/wv/in_my_community_58353.asp.

It is also important to address other mental health needs of our older citizens. The IOM estimates that on a national level the number of Americans aged 65 years or older who have mental health or substance use disorders will skyrocket from approximately 5.6 - 8 million to about 10.1 - 14.4 million by the year 2030 (Bartels & Naslund, 2013). In 2010, it is estimated that nearly 10.5% (95% CI 8.8-12.2) of older persons in West Virginia experienced frequent mental distress, which is significantly higher than the national average of 6.9% (95% CI 6.7-7.2). Moreover, there is a higher percentage of West Virginians over age 65 with current depression than people in other parts of the country, with 8.6% (95% CI 6.7-10.9) of older West Virginians reporting current depression when compared to the national average of 5.0% (95% CI 4.6-5.4) (CDC Healthy Aging Data Portfolio).

Health Literacy is also an important component of health care accessibility and quality. Health Literacy is defined as the capacity to understand and access basic health information and services. Without the ability to read and understand numbers, the ability to access health information and services is obviously impaired. According to a 2003 survey, 60% of adults over 65 in WV were found to function at only basic or below basic health literacy levels, with 31% of that age group never having completed high school. Without good levels of health literacy, patients will not seek preventive health care, not be able to interpret symptoms and manage chronic conditions, and not seek and receive adequate follow-up care, waiting until emergencies to seek care.

What Resources are available?

Some of the best resources for general information on programs and resources available for the older population would be the web sites of the WV Bureau of Senior Services (http://www.wvseniorservices.gov/), and the WV Chapter of the Alzheimer's Association (http://www.alz.org/wv/).

In terms of long term care facilities, including skilled nursing facilities and various types of assisted living facilities, it is sometimes difficult for families to determine what options are available to them and to make a decision. One resource that is available to professionals, patients and their families is the West Virginia Aging and Disability Resource Center. This website provides lists and information on all of the different services, including meal services, transportation, long term care options and others that are available in each of the 55 counties (http://www.wvnavigate.org/AboutWVADRC/tabid/90/Default.aspx). Over 10,000 West Virginians live in 129 nursing homes and 550 other identified long term care facilities including assisted living facilities, residential care communities, and adult family care communities among others (Legal Aid, 2010). With all of these different care options and payment structures that support these options, it is incumbent upon us to know what is out there in terms of chronic care facilities, home care options, be able to recommend the appropriate services to our patients, and participate in providing and improving care in these facilities. For more information on this specific topic, see also our special article on the Long-Term and Post-Acute Care Continuum from the WV Medical Journal Nov-Dec 2014, reprinted in this issue.

One of the biggest problems in improving senior care in our state is the dearth of geriatrics-trained physicians and the very small numbers of geriatric focused educational programs within the state. There are only a few formal geriatric medicine training programs and practices in the state, including WVU Charleston/CAMC, WVU Morgantown, WVU Eastern Division, Marshall University, WV School of Osteopathic Medicine, and the Veterans Affairs Hospitals and Clinics. There are only three accredited geriatrics fellowships in West Virginia, located at WVU Charleston/CAMC, WVU Eastern Division, and WVSOM, with a very small number of enrollees. There are even fewer practices focused on geriatric psychiatry, with no specific training programs in this subspecialty in our state. According to the ACGME website (https://apps.acgme.org/ads/public/), there are 56 geriatric psychiatry fellowship programs in the U.S., with none in West Virginia.

Conclusions

It is evident when looking at the age and health demographics of our state that the coming years will present new challenges in terms of caring for a large and dynamic population of older adults. It is therefore imperative that we, as health care providers and community leaders, work towards solutions so that we can improve the lives of older West Virginians. With more and more people living to extreme old age, a new system of senior services is needed in our state and country (Schenk, 2015); we must both explore new options and expand programs that have shown to be effective in the past. Please enjoy and share the several other excellent articles in this issue which address a variety of other topics relevant to the care of “Aging Mountaineers.”

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The Aging Mountaineer: PSA screening in older men – of value or should we skip this test?

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Abstract

The most recent American Urologic Association (AUA) guidelines concerning prostate-specific antigen (PSA) screening have caused much controversy. One particular guideline, in regard to testing elderly men, is the center of intense debate. Currently, the AUA recommends against PSA screening in men aged 70 and older. West Virginia faces the challenge of a population aging at a rate that far exceeds the projected national rate. With such a substantial future proportion of older men, and increased life expectancy within this group, careful consideration of PSA screening in elderly men is warranted. Given the uncertainty surrounding the basis for the AUA guidelines, and the increased quality of life and remaining life expectancy for older men, we propose a view that supports PSA screening in carefully selected elderly men, and offer background to assist clinicians in arriving at a sound clinical decision in concert with the patient.

Case Presentation

A 72-year-old male presents to your primary care office for a routine follow-up visit. Overall, he is a fairly healthy elderly gentleman with a medical history of only hypertension and dyslipidemia, both well controlled through lifestyle modifications and pharmacologic therapy. He is mobile and ambulates without assistance of a cane or walker, and finds joy in his daily afternoon walk. As you begin to wrap up this visit, which is normal and did not reveal any new worrisome issues, the patient asks, "Doc, I'm 72, do we still have to look for prostate cancer?"

Introduction

West Virginia is home to just under 2 million people and is one of the oldest states by age. While the U.S. on the whole faces an aging population, projections predict that West Virginia's population will age at a rate that exceeds that of the nation through 2030. The share of the state's population over 65 is expected to jump to 22.9% by 2030 from 16.0% in 2010, due in large part to the aging "Baby Boomer" population. This translates to an increase in total population aged 65 years or older of more than 41%, or 123,300 people, and these projections will maintain West Virginia as one of the oldest states in the U.S.[1,2]

Aside from skin cancer, prostate cancer is the most commonly diagnosed cancer in men. The current lifetime risk for a diagnosis of prostate cancer is 15.9%, with a lifetime risk of dying from prostate cancer of 2.8%, indicating a good prognosis for the vast majority of cases, even without treatment.[3] The risk for developing prostate cancer increases beginning at age 50 in white males without a family history and at age 40 in black males and those who have a first-degree relative, regardless of race.[4] With age being the greatest risk factor for prostate cancer, the implications of an aging population and future prostate cancer in West Virginia warrants special attention.

Between 2008-2012 West Virginia fortunately had a lower incidence rate of prostate cancer at 114.2 compared to the national age-adjusted average annual incidence of 131.8 (per 100,000 population).[5] Stage at diagnosis for prostate cancer in West Virginia is approximately 85% for localized disease, 12% for regional/distant disease and 3% for unknown stage. Again, when it comes to the crude mortality rates for prostate cancer, West Virginia faired slightly better

Objectives

The goals of our review article were twofold. First, to familiarize clinicians with the most current AUA guidelines for PSA-based screening of prostate cancer. Secondly, we thought it was worthwhile to provide some of the background regarding the current climate of PSA screening as there is great uncertainty for general practitioners, the general public, and even within the urology community. Hopefully, we provided a fair assessment of this climate, and a strategy in which clinicians may navigate when faced with the inevitable question from a 70-year-old man inquiring as to whether or not he should be screened. This dilemma demands our attention presently, as the situation will only present itself more in the coming years as our state continues to rapidly age. In emphasizing the importance of clinicians understanding the most current guidelines, and more importantly, being able to effectively communicate them to patients, we believe much of the uncertainty surrounding this issue can be resolved.

than the national rate of 21.4 with a rate of 20.2 per 100,000.[6]

For 2015, an estimated 220,800 new cases of prostate cancer will be diagnosed and 27,540 prostate cancer deaths will result.[7] Despite this, much confusion and debate surrounds the proper screening and detection of this disease. In 2012 the U.S. Preventive Services Task Force (USPSTF), a 16-member panel lacking any urologists, released its guidelines as a "Grade D Recommendation" for prostate-specific antigen (PSA)-based screening for prostate cancer. Grade D recommendation means that the USPSTF recommends against the service as there is moderate or high certainty that the service has no net benefit, or that the harms outweigh the benefits.[8] As such the USPSTF currently discourages the use of PSA-based screening and ultimately decided that not having PSA testing in a patient living a similar life expectancy with little or no difference in prostate cancer-specific mortality avoids the risks of PSA testing and harms associated with diagnostic procedures and treatment. To say this is a drastic change in position from 2008, when the only recommendation against PSA-based screening, then, was in men age 75 years or older, is an understatement.

As expected, the American Cancer Society (ACS) recommendation for prostate cancer lies at the opposite spectrum in this debate, and advocates for early detection. Again, while shared decision-making is emphasized, the ACS advocates screening of men for prostate cancer based on risk-stratification: screening should begin at age 50 for men at average risk of prostate cancer and who are expected to live at least 10 more years to establish a baseline PSA with a threshold that determines frequency of future screenings. In men who have a PSA less than 2.5 ng/mL, future screenings may occur at 2-year intervals, while yearly screening should be performed in men whose PSA level is higher. In keeping with its goal of detecting and eliminating cancer, the ACS recommends screening even earlier than 50 years if certain risk factors are present, such as being African American or having a first-degree relative with prostate cancer (begin screening at age 45), or having multiple first-degree relatives with a history of prostate cancer (begin screening at age 40).[9] Instead of relying solely on age as an indicator for screening, the ACS places more emphasis on overall health status and risk to direct screening.

To add to clinicians' uncertainty, the 2013 American Urologic Association's (AUA) prostate cancer screening guidelines offered a Grade B recommendation of screening only in men aged 55 to 69 years, after shared decision-making with a clinician.[10] Such a recommendation directly contradicted the USPSTF guidelines released a year prior. Furthermore, some of the other

2013 AUA guideline statements contradicted the organization's own recommendations offered in 2009. Unfortunately, these guidelines leave many questions unanswered for the general public and offer little clarity in how clinicians should best proceed, particularly regarding screening in elderly men. In what follows, we seek to provide a brief review of some of the criticisms of the current AUA screening guidelines and to shed some light on the debate regarding screening, or lack thereof, in males aged 70 or older.

Discussion

While a detailed review of the current controversy surrounding each of the summary statements is beyond our endeavor, we believe it is worthwhile to provide some background on the climate of the current debate. A bulk of the confusion surrounding the guidelines stems from the AUA's abrupt reversal of its own previous recommendation that all men undergo baseline risk assessment through PSA screening beginning at age 40.[11] Still others criticize waiting until age 55 to screen many men, particularly those at higher risk, including African American men and those with a family history.[12] With the current uncertainty, asking patients to partake in shared decision-making with specialists, many of whom themselves are unsure of how to proceed, borders on impracticality.

Though PSA-based screening for prostate cancer has been used extensively since the mid-1980s, only in recent years has enough time passed and data accumulated to critically examine its efficacy. Fortunately, prostate cancer mortality in the U.S. declined by 40% between 1992 and 2007, partly due to PSA screening, but also from improved treatments for prostate cancer.[13,14] Two well-known trials of PSA screening – the U.S. Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial and the European Randomized Study of Screening for Prostate Cancer (ERSPC) – have provided the best long-term data on the topic, and served as much of the basis for both the USPSTF and AUA recommended guidelines.[15,16]

With regard to reduction in mortality from prostate cancer, the U.S. PLCO trial failed to demonstrate any reduction. The ERSPC study did find a reduction, albeit small – an absolute reduction in mortality in screened men of only 0.1 death per 1,000 person-years, or 1.07 deaths per 1,000 men. This translates into 1,055 men needing to be screened and 37 cancers needing detection to prevent 1 death from prostate cancer at 11 years follow-up.[15,17] This reduction was lost when considering all-cause mortality, which was almost identical between the screened and non-screened groups. This newer evidence lends support to the AUA's desire to curb over diagnosis, and subsequent over treatment of a largely indolent disease while reducing many of the harms associated with screening and treatment, not least of which is psychological trauma and anxiety in patients over uncertainty.

It is worth noting that the statistically significant data in the studies mentioned above were only for men ages 55-69 as this was the only age group studied. However, men who are in their 70s are the most frequently screened age group for prostate cancer in the U.S. despite the lack of any studies or trials demonstrating a benefit of screening or treatment. The decrease in specificity of PSA observed with increasing age is also troublesome as this leads to higher false-positives and additional, unwarranted testing. With an aging population and the increasing life expectancy of the average American citizen, the last guideline statement concerning screening in men aged 70 or older has understandably caused much debate. Due to lead-time estimates and studies evaluating the treatment of localized prostate cancer, modeling studies have indicated that only men who live at least 10 years can expect any benefit.

This "10-year rule" is often used when determining when to recommend screening and potentially curative, more aggressive therapy to elderly men. This rule was based largely in part on a follow-up study that investigated competing risk analysis (comorbidities) in age-stratified men, and is widely accepted.[18] In their attempt to determine the accuracy of clinician estimates of life expectancy in patients with localized prostate cancer, Krahn and colleagues demonstrated that 82% of clinicians' estimates correctly classified patients as having a life expectancy less than or greater than 10 years.[19] Since its adoption, the 10-year rule has garnered more support with the use of the Charlson comorbidity instrument, a tool originally developed to predict 1-year mortality in breast cancer patients that has since been widely applied to multiple cancer types. In its application to men with prostate cancer, most men with a Charlson score 2 or greater died from a competing comorbidity in the 10-year interval, while men with no or one comorbidity often survived past the 10-year mark.[20]

Still, the challenge remains of when to screen elderly men, and when to stop. Some advocate that in healthy men over age 70, clinicians must weigh the risks and benefits on an individual patient basis so that screening and subsequent treatment may be warranted in carefully selected patients.[21] Together, age, comorbidity and life expectancy can help guide the decision to screen. This is important, as the prevalence of clinically significant prostate

cancer in the elderly population is higher than previously thought. In one study of 1,446 men with 95% of patients between the ages 75 and 85, 53% were found to have prostate cancer, and 78% of these were deemed clinically significant cancer.[22] This underscores the potential to miss screening and treating clinically significant cancer in patients, some of whom may be healthy enough to at least contemplate treatment.

Although shared decision-making empowers the patient to make an informed decision, some primary care physicians argue that such a detailed discussion may not necessarily be feasible given existing time constraints for patient encounters. While this is a legitimate concern, it is a crucial conversation that physicians must have with their patients. Allowing adequate attention to the matter may require creative approaches including the use of informational handouts, such as the handout found on UpToDate intended for patients, to introduce the topic at one visit, and discuss it with greater attention at subsequent visits.[23] This ensures that both the appropriate time and focus are dedicated to the discussion and shared decision-making.

Though the AUA guidelines no longer recommend screening in patients over 70 years, they do offer two approaches if screening is chosen. First, using a biopsy PSA threshold of 10 ng/mL instead of 4 ng/mL may be useful as levels greater than 10 ng/mL are more likely associated with clinically significant cancer, and these men are likely to benefit from treatment.[24] Secondly, they offer discontinuing PSA screening if PSA level is less than 3 ng/mL based on work by Schaeffer et al. as the likelihood of progressing to a lethal cancer after this level in remaining years of life is low.[25] In this same study of 849 men, 3 ng/mL emerged as a clear cut-off for the increased probability of dying from prostate cancer or being diagnosed with high-risk disease and may provide a more definitive stop point in testing elderly men. Despite this emerging evidence, all men must still be informed that there is no PSA level that can guarantee the absence of prostate cancer.

The role of the clinician in helping patients navigate the shared decision-making process, as recommended by the AUA, is a significant one given the enthusiasm for cancer screening in the United States. Schwartz and colleagues demonstrated an overwhelming public support (87% of adults) for cancer screening.[26] This sentiment remained despite false-positive results or the possibility of over treatment. In measuring the perceived irresponsibility of a patient electing not to undergo a specific screening, almost 65% of subjects deemed a 55-year-old male irresponsible for declining PSA testing, compared to 40% of subjects when the hypothetical male was 80-years-old. Such public sentiment, thanks in large part to readily accessible medical information, underscores the importance of physicians understanding recommended guidelines, and more importantly, being able to convey the information effectively to patients, especially to men over 70 years who inquire about PSA screening, where no benefit in mortality is observed in PSA-based screening.

An aging population presents a challenge to clinicians regarding how to best approach prostate cancer. This challenge will not be unique to West Virginia in the coming years, however given the rapidly aging population within the state, this challenge may be more pronounced. Though based on well-established studies, the current AUA guidelines do not recommend screening for a population that will continue to grow and thrive in older age for years to come as the national life expectancy grows. Perhaps, through the competing views in screening elderly men presented here, clinicians may gain awareness of the conflicting literature, and be more reflective when considering when (or not) to screen older men. As guidelines are exactly that and cannot be applied perfectly to every patient, the decision ultimately depends on effective, and shared communication between practitioner and patient. In a select group of patients over age 70, as the gentleman in the case presentation, it is reasonable to consider patient comorbidities and remaining life expectancy and to share this in joint decision-making with patients to reach an individualized conclusion. Should a man over age 70 elect to have PSA screening, he should be aware of the risks involved with the entire clinical course, from screening to treatment, and a PSA level of 3 ng/mL may serve as a threshold to discontinue screening. Through this process PSA screening may continue to be of use in carefully selected patients over the age of 70.

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CME Post-Test

1. Which of the following most accurately states the current AUA guidelines for PSA screening in men?
   a. Screening in all men should begin at age 40
   b. Screening in all men should begin at age 65
   c. Screening is recommended for all men ages 55-69
   d. PSA screening is currently not recommended for any man, regardless of age
2. At what age does the risk of prostate cancer begin for men at average risk?
   a. 50 years
   b. 55 years
   c. 60 years
   d. 65 years
3. What is the currently held minimum remaining life expectancy needed to observe a survival advantage in screening and treating prostate cancer?
   a. 5 years
   b. 10 years
   c. 15 years
   d. 20 years

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Considerations of prescription opioid abuse and misuse among older adults in West Virginia – An Under-Recognized Population at Risk

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Abstract

Opioid abuse, misuse and overdose is now a public health epidemic receiving political, medical, and media attention at all levels. Despite the fact that many people know someone suffering from addiction, there is very little research focusing on this issue in older adults. Chronic pain, a highly prevalent affliction for the aging population, has been accompanied by a significant increase in opioid use. This, along with some unique aspects of older adults (increased susceptibility to illness, higher likelihood of altered presentation of illness, and impaired recovery), means that great care needs to be taken when considering opioids for treatment. Prudent prescribing is possible, but universal precautions should be taken to reduce the risk of opioid abuse, misuse, and addiction. This review provides education, summarizes current literature, and gives guidance in universal precautions for prescribing opioids.

Introduction

Prescription drug misuse and abuse is the use of medication for reasons other than prescribed, such as psychotropic effect (changing how one feels). Many Americans report using prescription painkillers for non-medical reasons.[1] According to the American Society of Addiction Medicine, addiction:

> is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors. Risk factors include personal or family history of alcohol or drug abuse, younger age (16-45), a history of preadolescent sexual abuse, and comorbid psychiatric disease.
>
> Addiction is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.[2]

Chronic pain affects more than 100 million Americans, and is among the most common reason for taking medications.[3] Its increasing prevalence has been accompanied by a significant increase in opioid prescribing and use.[4] Treatment is difficult and often requires opioids, one of the most powerful and utilized classes of drugs. Unfortunately, opioids have major side effects (constipation, urinary retention, nausea, pruritus, sedation and mild cognitive impairment), a loss of pain-relieving effects (analgesic tolerance), paradoxical pain (hyperalgesia), and addiction.[5]

Among older adults, chronic pain is one of the most prevalent complaints affecting this population more than any other age group.[6] A nearly 9-fold increase in opioid prescriptions from office-based medical visits by older adults occurred between 1995 and 2010.[7] The baby-boomer generation (born between 1946 and 1964) is changing

Objectives

After reviewing this paper, readers should be able to give at least two reasons that older adults are at risk for prescription opioid misuse, abuse and addiction. They should be able to name three unique aspects of how illness can affect older adults, as well as give examples of those aspects. They should also be able to recognize at least three universal precautions that should be taken when prudently prescribing opioids to older adults. Finally, the readers should appreciate the paucity of research investigating prescription opioid abuse, misuse and addiction in older adults, and that the issue is under-recognized.

the cohort of the older U.S. adult population, continuing for the next 25 years. This evolving cohort is more likely to report the use of psychoactive drugs for psychotropic effect than previous older adult generations.[8] Substance abuse and misuse are expected to continue as the baby-boomer generation ages.[9]

Older adult evidence-based studies of prescription opioid abuse and misuse is sparse. One study from the Annual Review of Public Health, by Andrew Kolodny et al, takes note of trends in morbidity seen in older adults.[10] Middle-aged women and older adults are more likely to visit doctors with complaints of pain.[11] The development of prescription opioid addiction may explain why these groups have experienced the largest increase in hospital stays related to opioid pain relievers.[12]

Nancy West, researcher at the Rocky Mountain Poison and Drug Center in Denver, Colorado, found the rates of abuse and misuse of prescription opioids are lower for older adults than younger adults; however, mortality rates among older adults followed an increasing linear trend surpassing rates for younger adults in 2012 and 2013. In contrast, the mortality rates among younger adults are trending downward. Their sub-analysis revealed an increasingly linear trend among older adults specifically for suicidal intent. These rates also recently decreased among younger adults. West concluded the recent linear increases in rates of death and use of prescription opioids with suicidal intent among older adults have important implications as the elderly U.S. population rapidly expands.[13] West Virginia's high overdose rate and aging population makes these trends of particular importance.

Large increases in the prescription use of opioids since the 1990s have paralleled dramatic increases in the prevalence of abuse, misuse, and use including with suicidal intent of these medications.[3] Overdose deaths involving prescription opioids now exceed deaths from heroin and cocaine combined.[14] This alarming increase in prescription drug abuse and overdose deaths has been labeled an epidemic by many, including the CDC.[14,15] West Virginia has led the nation in overdose deaths for a number of years (figure 1).[16] It is well known that addiction is non-discriminatory to age, race, socioeconomic status and occupation; therefore, it affects older adults.

As stated by the governor of West Virginia, health care professionals need to "implement a long-term approach that will sustain a meaningful and effective system addressing the entire substance abuse continuum: Prevention, Early Intervention, Treatment, and Recovery."[17] This continuum includes older adults at risk for abuse, misuse and addiction. Many of the modalities are applicable across all populations with varying degrees of utilization success. Addiction treatment in the elderly population would generally be similar to other populations, likely with cohort-specific special needs. There is a paucity of studies in the elderly population yielding evidence-based standards of assessment, care and treatment of pain, mental illness and addiction. It is the authors' belief that this combined effort and education of our elderly population, the healthcare profession as a whole during and subsequent to training and the public is the key to resolving the issue of prescription drug abuse and addiction.

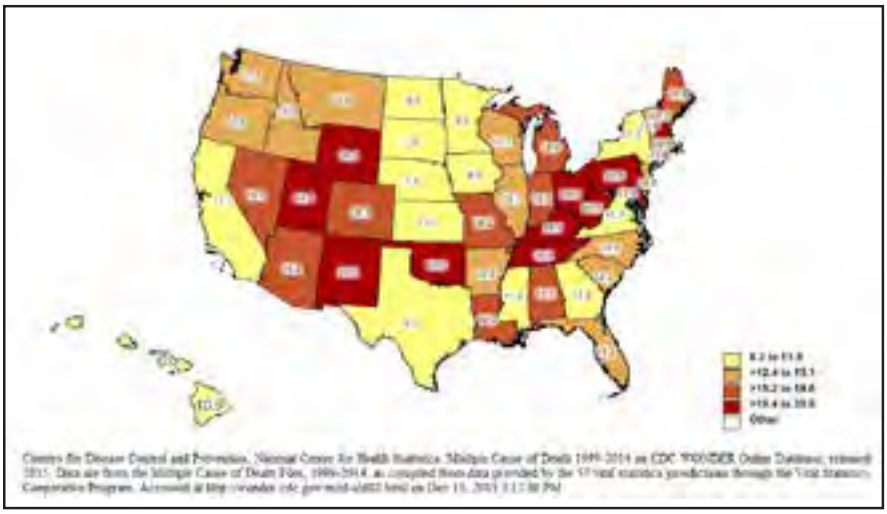
Unique aspects of the growing older adult population

The average life expectancy of females is projected to be 82 years by 2020. From 2000 to 2040, the population over age 65 will double (35 to >70 million). Improving medical technology means fewer sudden deaths (trauma, acute illness, etc.), and more deaths from chronic illnesses. More time on earth means developing more injury and illness, leading to more chronic pain.

Currently, approximately 80% of Americans die from chronic illnesses such as cancer, congestive heart failure, COPD and dementia. Older adults have an increased susceptibility to illness, higher likelihood of altered presentation of illness, and impaired recovery.

Hip fracture is an example of the older adult's increased susceptibility

Figure 1. ***Age Adjusted Drug Overdose Death Rate per 100,000 residents***



to illness and impaired recovery. Approximately 15% of women and 8% of men will experience hip fracture. Hip fracture is associated with considerable morbidity, including pain, medical complications and delirium with approximately 20% never returning home. Studies have shown hip fracture pain is poorly controlled in the hospital.[18] Improving hip and knee arthroplasty post-operative and rehabilitative pain control has been shown to decrease chronic pain and opioid use six months after surgery, while increasing mobility and function.[19] Prudent prescribing in acute injury to older adults can improve morbidity and possibly decrease abuse and addiction to prescription opioids following convalescence.

Depression is an example of altered presentation of illness in older adults. The prevalence of depressive disorders among those over the age of 65 is surprisingly low. 1% of those interviewed with standardized instruments met diagnostic criteria for major depressive disorder. However, the older adult prevalence of depressive symptoms not meeting the threshold for major depressive disorder (as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth edition) is substantial, with studies recording rates in the range of 15%. Unlike younger adults, the older population more frequently have somatic symptoms and less often report depressed mood. "Subsyndromal" depression, (presence of depressed mood with 2 - 3 additional symptoms of major depressive disorder), has been associated with increased use of health services, excess disability, and poor health outcomes, including higher mortality.[20,21] Since psychiatric disease is a strong risk factor for drug abuse, this high prevalence of depressive symptoms in older adults is likely a risk factor of prescription medication misuse, abuse, and addiction. Depression warrants thorough evaluation in the older population when prescribing potentially addictive medications.

Universal Precautions for Prescribing Opioids

Risk Stratification for Abuse, Misuse and Addiction

Many healthcare professionals only screen for addiction in individuals they think may be addicts, thus inadvertently strengthening the stigma of addiction. Screening is recommended by guidelines to help identify risk of addiction and misuse. However, the U.S. Preventative Services Task Force (USPSTF) has concluded there is insufficient evidence to determine the benefits and harms of screening for illicit drug use. There are many screening tools available, including but not limited to, the Screener and Opioid Assessment for Patients with Pain-Revised (SOAPP-R), Opioid Risk Tool (ORT), the Drug Abuse Screening Test (DAST), and the Diagnosis, Intractability, Risk, Efficacy tool (DIRE).[22]

The ORT (figure 2) is a 5-item yes-or-no self-report designed to predict the probability of a patient displaying aberrant behavior when prescribed opioids for chronic pain. It consists of items on family and personal history of substance abuse, age, histories of preadolescent sexual abuse and psychological disease. The substance abuse items contain subsections covering alcohol, illegal drugs and prescription drugs. The item on psychological disease has subsections distinguishing depression from other disorders. Each positive response is scored based on patient gender and the scores are summed to derive the probability of opioid-related aberrant behavior. Scores of 0-3 are associated with low risk, 4-7 with moderate risk, and >8 with high risk. Webster evaluated the ORT in 185 consecutive new pain clinic patients. Seventeen of 18 patients (94.4%) in the low-risk category did not display aberrant behavior. In contrast, 40 of 44 patients (90.9%) in the high-risk category and 35 of 123 patients (28.5%) in the moderate-risk category did display aberrant behaviors.[23]

The most common aberrant behaviors were solicitation of opioids from other providers, unauthorized escalation of opioid dose, abnormal urine or blood screening, and use of more opioids than prescribed. The ORT displayed excellent discriminatory ability in both men and women. Because of its brevity and ease of scoring, the ORT is

Figure 2. ***Opioid Risk Tool***

		Mark each box that applies	Item Score If Female	Item Score If Male
1. Family History of Substance Abuse	Alcohol Illegal Drugs Prescription Drugs	[ ] [ ] [ ]	1 2 4	3 3 4
2. Personal History of Substance Abuse	Alcohol Illegal Drugs Prescription Drugs	[ ] [ ] [ ]	3 4 5	3 4 5
3. Age (Mark box if 16-45)		[ ]	1	1
4. History of Preadolescent Sexual Abuse		[ ]	3	0
5. Psychological Disease	Attention Deficit Disorder, Obsessive Compulsive Disorder, Bipolar Disorder, Schizophrenia Depression	[ ] [ ]	2 1	2 1
		TOTAL		
		Total Score Risk Category	Low Risk 0-3 Moderate Risk 4-7 High Risk ≥ 8	

often favored. Its shortcoming is its susceptibility to deception.[23]

Treatment providers should at least ask if patients have a history of alcohol or drug abuse. A study of 295 unintentional opioid overdose deaths in West Virginia found that four out of five had a history of substance use disorder.[24] No matter what screening tool you use for addiction and misuse, greater levels of treatment compliance monitoring can be utilized depending on the perceived level of risk. If there is a moderate or high level of risk, consider involving an addiction specialist in the case. Universal application of the various tools available, including more than discussed in this article, can prove to be beneficial in the risk assessment of the older patient.

Treatment Compliance monitoring

A simple method of documenting compliance is requiring the use of a single pharmacy. The Pharmacist may recognize aberrant behavior; lost prescriptions, attempts for early refills, and inconsistency of who is filling the prescription. Monthly physician visits can assist with goals of treatment, documentation of pain related outcomes and other metrics utilized to evaluate adherence to the treatment plan and associated compliance documentation, such as pill counts in the office. Urine toxicology screening can be helpful to confirm the patient is taking their medication and not taking other illicit substances. It may be necessary to discuss urine toxicology results with a lab director or toxicologist, as there can be false positives and/or false negatives. Utilization of home health services (possibly dual roles of physical therapy, medication education and pill counts) can be helpful with supervising patients in the home. Always discussing the risks of higher dose of opioids (overdose, side effects) is extremely important. One study showed that doses between 50 and 100 milligrams of oral morphine equivalents had almost a fourfold increased risk of overdose, and doses over 100 mg had nearly a nine-fold increase.[25,26]

Another method of compliance monitoring is requiring consent to discuss their status with a patient's family. This is controversial, as it could be perceived as violating patient confidentiality. Considering the possible risks of taking opioids,

many consider this to be an invaluable source of information regarding medication compliance, detection of aberrant behavior and monitoring for adverse side effects.

Opioid treatment agreements

Sometimes referred to as "opioid contracts", opioid treatment agreements contain specific requirements patients must adhere to in order to continue therapy and may contain policies in the event of violations. There are limited observational studies of fair to poor quality suggesting an improved provider confidence in pain management with the use of opioid treatment agreements.[27] Their ability to protect providers from legal risk is uncertain, and may only serve to reduce physician flexibility in patient management by defining rigid policies for specific patient actions.[28] Analyses of the agreements have found them to be written at a mean grade level of 13.8, a problem for many patients.[29] Despite these drawbacks, opioid treatment agreements have positive aspects. They provide a thorough discussion of informed consent and are a source of patient education regarding safe use of opioids. Patients can be provided with a copy to reinforce this education and can be reviewed with them upon future visits.[30,31]

If patients break treatment agreements (illicit drugs present in urine drug screens, or other aberrant behavior indicative of addiction), do not simply "discharge" them from clinic. Offer assistance with finding substance abuse treatment programs, and ensure them you will continue to provide alternative treatment modalities for pain, other than opioids.

Home safety evaluation

Inquiring of patients if they feel safe at home and if anyone has ever stolen their medication are crucial questions to ask. Older adults are vulnerable and are susceptible to be taken advantage of by someone they know. Young adults use prescription opioids recreationally and are most likely to get them free from friends or family with a legitimate prescription.[32] Providers need to teach patients to store their prescription opioids in a safe place, such as a lockbox. Medications should not be kept in an unsecured, easily accessible medicine cabinet.

Depression screening

Psychiatric disease is a well-known risk factor for drug abuse. Older adults tend to have an altered presentation of depression making screening for depression essential. The nine items of the Patient Health Questionnaire (PHQ-9) cover the diagnostic criteria for major depressive disorder. The initial two questions ("PHQ-2") can be used for screening.[33] Serial administrations of the PHQ-9 can assess responses to treatment of depression. Patients scoring ≥3 on the depressed mood plus anhedonia questions on the PHQ-2 should be assessed with the remaining seven questions of the PHQ-9. Patients scoring 3 on the anhedonia questions alone should also be fully assessed. A complaint of depression need not be present for a diagnosis of major depressive disorder, provided the other symptoms significantly impair function and are not the direct result of somatic illness.[20] Older patients and physicians may have difficulty recognizing depression as result of its often-altered presentation; associated screening may warrant additional investigation.

State prescription drug monitoring programs

According to WV Code, Chapter 60A, Article 9-5, all practitioners as defined were required to have online/electronic access to the West Virginia Controlled Substances Monitoring Program database by July 1, 2011. Practitioners are required to access the database upon initial prescribing or dispensing any pain-relieving controlled substance for a patient and at least annually thereafter.[34] Additional access to the database beyond that which is required may be beneficial.

The West Virginia Board of Pharmacy data base is useful to see if patients are visiting more than one provider ("Doctor shopping") for opioid prescriptions. It verifies when and where patients fill controlled prescriptions, prescribing directions and associated pill counts. It can be particularly helpful in the emergency room setting and the primary care setting. If a patient is found to be doctor shopping, additional discussions should follow and if indicated should be offered treatment for addiction, as opposed to just being turned away.

Conclusion

We are ethically obligated to address pain and suffering in all patients, including the older population. This may, or may not, include prescribing opioids. We must learn how to prudently and cautiously prescribe opioids when indicated. The universal precautions outlined in this paper are taught in further detail in the online course, Best Practice Prescribing of Controlled Substances and Drug Diversion Training, available at the West Virginia Board of Medicine website.[35]

Clinicians have a critical role, in not only preventing the diversion of prescription drugs, but also in the treatment of addiction acutely and the long-term as with any other chronic medical illness affecting the elderly population. CME, including best practices for prescribing and other commonly

used tools in the assessment of these conditions, needs to continue to the benefit of the patients we serve. Considering the growth of the aging population and the under-recognition of prescription opioid abuse, misuse and addiction in older adults, additional evidence-based studies and associated education of the healthcare profession and their patients are needed.

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CME Post-Test

4. Which of the following is an advantage to using opioid treatment agreements?
   a. Legal protection for the prescribing physician
   b. Improved provider confidence in prescribing
   c. Education for patients and families about opioid administration, precautions and side effects
   d. A means of "discharging the patient" if they break the contract
5. Which of the following is likely to increase the risk of opioid abuse and misuse?
   a. History of using psychotropic drugs
   b. History of smoking
   c. History of incarceration
   d. History of insomnia
6. You are aware that opioid abuse, misuse and addiction in older adults is under-recognized. You are also aware of the universal precautions that should be taken when prescribing opioids. Which of the following would be important to screen for to possibly recognize risk of opioid abuse, misuse or addiction?
   a. Review the patient's profile on State prescription drug monitoring program
   b. Use the PHQ-9 to screen for depression
   c. A personal and family history of drug or alcohol abuse
   d. All of the above
7. The Opioid Risk Tool is probably the shortest, easiest method to screen for addiction. What is the biggest shortcoming of this tool?
   a. it does not provide good discriminatory ability from people who are at risk of addiction
   b. it is difficult to score
   c. it is difficult to administer
   d. it is susceptible to deception

Aging Skin: Skin Care and Differential Diagnoses for the Elder Mountaineer

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Disclosure: Drs. Zinn, Ellison, Meeker, Jalali and Ms. Leight disclosed discussion of off-label use for ivermectin.

Introduction

According to a recent Mayo Clinic study, skin related complaints are the most common reason that patients visit doctors.[1] The elderly population is particularly at risk for skin related problems given the cumulative intrinsic and extrinsic damage inflicted upon the skin with aging. Further, the prevalence of some dermatologic conditions increase with aging, ranging from relatively benign xerosis to potentially lethal skin cancers. Part one of this article reviews the pathophysiologic changes to the skin with aging and discusses approaches to optimize skin care. Part two discusses common rashes encountered in the elderly with an emphasis on treatment. Finally, part three focuses on recognition of skin cancer given that non-melanoma skin cancers are more common than all other malignancies combined in the elderly.

Part 1: Skin Aging

Skin aging is a complex biological process involving two main contributors: genetics and environment. Chronological or intrinsic skin aging is an inevitable, inherent genetic process that occurs with time. Reactive oxygen species generated during oxidative cellular metabolism and telomere shortening with subsequent cellular divisions lead to an eventual cellular death and cellular senescence.[2] Ultraviolet radiation (UVR) is the most important environmental factor involved in premature skin aging. Photoaging refers to the cumulative damage obtained from chronic ultraviolet (UV) light exposure.

As the top layer of the skin, the epidermis functions as barrier protection against harmful substances and prevents water loss. The stratum corneum, the outermost layer of the epidermis, thickens variably with aging.[3] Desquamation of the stratum corneum also slows throughout life leading to a buildup of corneocytes. Conversely, the amount of intercellular lipids within the epidermis decreases as skin ages. Filaggrin and its subsequent product, natural moisturizing factor (NMF), serve as key components of the stratum corneum to aggregate keratins. As aging of the skin occurs, filaggrin levels and thus NMF levels decrease, while the pH of the skin increases. It is the accumulation of these changes that lead to dull, xerotic, toughened skin with an increased propensity for pruritis.[3]

Deep to the epidermis is the dermis, comprised of collagens I and III, elastins, proteoglycans, and fibronectin. Complex networks that exist within the extracellular matrix of the dermis provide structural support, elasticity, tautness, and bind large amounts of water.[4] A reduced number and strength of papillary dermal microfibrils, disorganized elastic fibers, degeneration and disorganization of collagen, and a weakening of fibril networks lead to wrinkles, laxity of the skin, and propensity for easy bruising or senile purpura.[2,3] UVR contributes to the degradation of collagen and the extracellular matrix.

The foundation of optimal skin care in the elderly includes cleansing, moisturizing, and protecting from excessive sun exposure. Cleansing removes environmental contaminants, personal secretions, and desquamated corneocytes. As soaps and detergents can greatly exacerbate dry skin, using gentle emollient cleansers is recommended. Taking less frequent showers and avoiding bathing with hot water are additional steps to combat dry skin. To restore natural moisture to the stratum corneum, occlusives, emollients,

Objectives

Skin related complaints are common in the elderly. The aim of this article is to review the physiologic skin changes associated with aging, and to improve recognition and treatment of skin problems occurring in advanced age.

and humectants should be used. Occlusives, such as petroleum jelly and lanolin based ointments, are greasy materials that seal in moisture by forming an impermeable barrier on the skin. Emollients are mixtures of water and oil which act to decrease evaporation on the skin, similar to occlusives but with shorter-lived effects. Humectants are substances with a high affinity for water, thereby driving increased fluidity into the epidermis. Common humectants include urea, glycerin, and alpha hydroxy acids such as lactic acid and glycolic acid. Treatment with acid based humectants is particularly effective given the age-induced increased pH of the skin. Blaak et al., have found that long-term treatment with lotion of pH of 4.0 results in significant improvement of the stratum corneum barrier function and also with the appearance of dry skin in elderly patients.[5] Sun protection is recommended to decrease the rate of photoaging. Sunscreen with a sun protection factor (SPF) of 30 or above with broad spectrum UV protection (against both UVA and UVB rays), reapplied every 2-3 hours is ideal. If diminished vitamin D level is a concern for the patient, oral supplementation should be considered.[6]

Ultimately, aging of the skin is an inseparable combination of intrinsic aging and photoaging, although the latter can remarkably exacerbate the rate and severity at which we age. Adequate moisturizing to compensate for diminished cutaneous lipids, as well as strict sun protection to decrease photoaging effects, are staples of skin care in the elderly.

Part 2: Common Rashes

There are numerous rashes seen in the elderly population, some of which are almost exclusively seen in old age. Below are the most commonly seen rashes encountered in the elderly in the outpatient setting, beginning with eczematous dermatoses, followed by immune-mediated and

Figure 1. ***Dry flaking scale on the palms characteristic of xerosis.***

inflammatory dermatoses, and concluding with infectious rashes.

Part 2a. Eczematous Dermatoses

Xerosis of skin may be a primary finding or secondary manifestation of chronic medical conditions such as hypothyroidism. It presents with dry, flaky skin with or without associated pruritus. (Figure 1). It may be localized or generalized. Senescent skin changes such as decreased sebum, lipids, and sweat as well as reduced barrier repair, contribute to xerosis and pruritus.[4] Optimized skin care, paramount in treating this condition, was previously discussed.

Seborrheic dermatitis presents with scaly, oily patches and plaques predominantly on areas with higher density of sebaceous glands such as the scalp, eyebrows, nasolabial folds, and infrequently, the chest. The rash may be pruritic, although often it is asymptomatic. Treatment with topical ketoconazole 2% shampoo or cream can provide relief. Low potency topical steroids can also be used in short duration, but prolonged use on the face should be avoided.

Seborrheic dermatitis has a chronic, relapsing course. Patients with immunosuppression or underlying neurologic disorders such as Parkinson's disease have more severe presentations and are more refractory to therapy.[7,8]

Nummular eczema, which presents as coin-shaped erythematous, eczematous plaques favoring the lower extremities, tends to be more common in the elderly. Often, allergic contact dermatitis to a topically applied allergen triggers this condition. Treatment can prove challenging. Patients require optimization of skin care and avoidance of any identifiable offending agent. Minimizing topical products, switching to fragrance-free hygiene products, and frequent moisturizing with a petrolatum-based ointment may be helpful. Patch testing should be considered to screen for allergens contributing to contact dermatitis.

Stasis dermatitis, another eczematous dermatitis favoring the lower extremities, is associated with underlying venous stasis, which worsens with increasing age. Pathogenesis involves a damaged capillary permeability barrier and passage of fluid and plasma proteins into the tissue, as well as chronic inflammation and microangiopathy.[4] Stasis dermatitis presents as pruritic, eczematous, hyperpigmented patches on distal lower extremities. Optimization of skin care, compression stockings, and topical corticosteroids should be considered for treatment.[2,4] Referral to a vascular specialist might be needed to determine if surgical intervention is indicated.

Figure 2. *Eczematous patches on dorsal hands.*

Contact dermatitis, another eczematous dermatitis, can be divided into an allergic form, which requires prior sensitization, and an irritant form, which does not require sensitization (Figure 2). The former is seen with chronic exposure to allergens and may develop within a short or long period after the exposure has begun, while the latter is seen with more acute exposure to irritants. Allergens commonly encountered include preservatives, metals such as nickel, and fragrances.[4] Patch testing for common allergens and strict avoidance of reactive allergens will usually lead to resolution of the rash.

Part 2b. Immune-Mediated and Inflammatory Dermatoses

Rosacea's incidence increases with age, especially in the Caucasian population. Rosacea most commonly presents as erythematous patches with telangiectasias on the cheeks and nose. Occasionally, inflammatory papules and pustules can occur, but it is the absence of comedones that distinguishes rosacea from acne.[2,4] Phymatous changes, characterized by proliferation of sebaceous glands, and ocular involvement are less common variants of rosacea.[4] Triggers such as ultraviolet light, dry skin, heat, stress, hot beverages, and spicy foods are common. Trigger avoidance is paramount to treatment success. Sun protection and moisturizers also play an important role in controlling rosacea flares. Topical metronidazole, sulfur based washes, and azelaic acid are commonly used treatments. Papulopustular rosacea as well as ocular rosacea require oral antimicrobials, often of the tetracycline family.

Drug eruptions can be seen in any age group: however, the increased number of prescription and over-the-counter drugs used by the elderly makes this a concern for this population. Patients typically present with a morbiliform, relatively symmetric eruption involving the trunk and extremities. There are a variety of drug eruptions with differing lag times between medication exposure and onset of the rash. However, the most common exanthematous drug

eruptions appear within 7 to 21 days of initiating a new medication and may appear even after a drug has been discontinued.[4] Obtaining an accurate history is essential. Some drug eruptions may have concomitant systemic involvement and any complaints of skin pain, fever, cutaneous desquamation, and mucous membrane involvement should raise concern for a more serious medication reaction such as toxic epidermal necrolysis.[4]

Bullous pemphigoid is a disease of the elderly and presents as pruritic tense bullae favoring the flexural creases, and sometimes as erythematous urticarial plaques.[4] Prompt diagnosis with skin biopsy and immunofluorescence studies is crucial. Medications, especially furosemide, can trigger bullous pemphigoid and should be discontinued if implicated.[9] Long tapers of corticosteroids with or without other immunosuppressive medications are often needed to control the disease.

Part 2c. Infectious Rashes

Tinea infections are common and may involve the feet (tinea pedis), inguinal region (tinea cruris), and less often the scalp (tinea capitis) or hands (tinea manuum).[4] Tinea infections can also be generalized (tinea corporis). Onychomycosis is a common co-existing finding, especially with tinea pedis. Treatment should take into consideration the involved sites and may include topical or oral antifungals. Diabetic patients may benefit from concomitant treatment of onychomycosis and interdigital tinea pedis given the increased risk of cellulitis in this population.

Herpes zoster usually presents as a unilateral dermatomal vesicular eruption with associated pain. Immunization is recommended in the elderly population and the Center for Disease Control and Prevention (CDC) recommends herpes zoster vaccine for use in people aged 60 and above.[10] Immunization decreases the incidence of herpes zoster by 51.3 percent, while reducing the incidence of postherpetic neuralgia by 66.5 percent.[11] Treatment with antivirals should preferably be initiated within 72 hours of onset of symptoms.

Infestations may also be seen in this age group. Scabies infestations are particularly rampant in long-term healthcare facilities. Sudden onset of a pruritic eruption in the setting of a long-term care facility should prompt a high index of suspicion for scabies. Interdigital and genital skin is preferentially involved. Topical permethrin 5% cream and oral ivermectin are both effective treatments, and should be repeated after 10-14 days. Care must be taken to clean and wash personal items as well as bedding and clothing at the hottest setting available, preferably with steam. Household members may also require treatment of scabies.

Part 3: Skin Cancers

The three most common types of skin cancers seen in adults include basal cell carcinoma (BCC), squamous cell carcinoma (SCC), and melanoma. The annual incidence of non-melanoma skin cancers (NMSC), including the basal cell and squamous cell carcinomas, is estimated at 230 per 100,000 people in the US, making the occurrence of NMSC more common than all other cancers combined. An estimated 20% of Americans will develop NMSC in their lifetimes.[4]

Approximately four times more common than squamous cell carcinoma, basal cell carcinoma (BCC) is the most common type of NMSC. BCC occurs most commonly on the face, neck, upper chest, shoulders, and back in sun-exposed areas. Early identification and surgical removal is the best treatment approach. Commonly described as pearly pink papules with telangiectasias, BCCs are often slow-growing and persistent in nature (Figure 3). Bleeding without associated trauma, recurrent skin breakdown, and scab formation are common presenting clinical complaints.

BCCs should be surgically removed to avoid further growth and destruction of the surrounding tissues and to prevent possible metastasis.

Figure 3. ***Classic features of a basal cell carcinoma including a pearly colored papule with prominent telangiectasias, erosions, and crusted scabs.***

Figure 4. ***Classic features of a squamous cell carcinoma including a firm, tender, pink to erythematous keratotic nodule.***

Figure 5. ***Diagram depicting the ABCDE's of melanoma.***

Case reports of metastatic BCCs are exceedingly rare.

Squamous Cell Carcinoma (SCC) is the second most common type of skin cancer. Actinic keratoses (AKs), are precursors to SCCs with approximately 0.1% of AKs evolving into SCCs each year. AKs range in appearance from rough patches of skin to erythematous hyperkeratotic papules. Treatment options for actinic keratoses include cryotherapy or field therapy with 5-fluorouracil, imiquimod, ingenol mebutate, or photodynamic therapy. Progression of an AK or a de novo SCC is most commonly seen in sun exposed areas including arms, hands, face, head and neck. Clinically, SCCs often present as painful, pink papules that have a hard, keratotic surface (Figure 4). The keratoacanthoma type of SCC can grow very rapidly, over several weeks and classically forms a crateriform nodule with a central keratotic core.[4] Bleeding of SCCs occurs less commonly when compared to BCC.

Patients with immunosuppression, including people with HIV or iatrogenic immune suppression from organ transplantation, have an incidence of squamous cell carcinoma up to 250 times higher than baseline patient risk.[4] In contrast to the general population, SCCs are the most common skin malignancy among the immunosuppressed. SCCs metastasize in >5% of cases. This risk of metastasis increases with increased tumor thickness as well as with certain high risk cancer locations including the ear, lips, and mucosa.[4]

Melanoma is the skin cancer associated with the greatest morbidity and mortality, killing 8000 people in the United States each year.[12] Melanoma is strongly linked to sun exposure and tanning bed use. The ABCDE's of Melanoma is a useful tool to help physicians and patients alike with melanoma detection (Figure 5). Early detection of melanoma is critical. Patient self examinations as well as full body skin examinations by trained healthcare professionals are crucial for early identification.

The high mortality associated with melanoma is attributed to its unpredictable pattern of metastasis. Unlike SCC, which rarely metastasizes when the cancer is small in size, melanoma can metastasize when the primary tumor is extremely small. Melanoma frequently metastasizes when the primary tumor becomes invasive. Dermatological evaluation and screening for early detection is vital. Excision with wide local margins and possible adjuvant therapy with novel immune checkpoint inhibitors and targeted chemotherapy agents are the preferred treatments. Research on new metastatic melanoma treatments is ongoing and results from this work may change the future of melanoma therapy.

For all skin cancers the most important aspects of prevention are vigilant sun protection, diligent self examinations to look for evolution of skin lesions and full body skin checks by a trained healthcare provider.

Skin care and skin disease provide a unique challenge in the elderly population. The lifelong accumulation of sun damage, along with the intrinsic skin changes of aging, result in a thickened, yet weakened, epidermal barrier. Skin rashes, infestations, and infections are common in this population, and may represent concomitant underlying illnesses or medication reactions. Further, management of skin cancer in the elderly comes with significant associated morbidity and mortality. Sun protection, moisturizing and frequent dermatological screenings are paramount to skin health in the Elder Mountaineer.

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CME Post-Test

8. What is the most common cutaneous malignancy in an adult patient with history of organ transplant?
   a. Basal Cell Carcinoma
   b. Squamous Cell Carcinoma
   c. Melanoma
   d. Seborrheic Keratosis
   e. Cherry Angioma

9. Which of the following does NOT contribute to the dull, xerotic, toughened skin with a tendency to itch in the elderly?
   a. Intrinsic skin aging
   b. Photoaging
   c. Increased pH of the skin with aging
   d. Increased intracellular lipids within the epidermis with aging
   e. Decreased desquamation of the stratum corneum with aging

10. What is the most common clinical presentation of bullous pemphigoid?
   a. Pruritic, tense bullae with a flexural distribution
   b. Painful bullae on the hands and feet induced by sunlight
   c. Grouped vesicles on an erythematous base
   d. Superficial erosions with prominent mucous membrane involvement
   e. Diffuse morbilliform exanthema

It Takes a System to Respect Patients' End-of-Life Wishes

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Director, WVU Center for Health Ethics & Law

West Virginia has an innovative, nationally recognized system to respect patients' end-of-life treatment wishes. It starts with good advance care planning. Advance care planning is a process of communication between the physician and the patient regarding the patient's wishes for future treatment. Ideally, the participants in the conversation include the physician, the patient with decision-making capacity, and a close family member or friend who the patient trusts to make decisions when the patient is no longer able. In the conversation the physician explains the patient's current overall health condition, moves to learn the patient's values and goals for medical care, and then asks the patient to designate a person, usually the close family member or friend who has accompanied the patient, to be the patient's Medical Power of Attorney representative. This person will work with physicians in interpreting and implementing the patient's treatment goals at a time in the future when the patient is unable to make medical decisions. If the patient is seriously ill and the physician would not be surprised if the patient died in the next year, as part of advance care planning the Institute of Medicine in its 2014 report, *Dying in America*, recommended completion of a Physician Orders for Scope of Treatment (POST) form.[1] The POST form converts the patient's preferences for treatment into medical orders which by West Virginia law are to be honored by all treating health care providers.[2] The power of the POST form depends on the strength of the underlying patient–physician communication and on the establishment of a statewide system for communicating and honoring those orders.[3]

West Virginia has such a system and has been recognized nationally for it (Figure).[4] It includes 1) strong, clear health care laws, the West Virginia Health Care Decisions Act and the West Virginia Do Not Resuscitate Act; 2) trained advance care planning facilitators; 3) a POST program; 4) an electronic online registry for treating health care providers to access a patient's advance directive, do not resuscitate (DNR) card, and/or POST form in a medical emergency; and 5) Emergency Medical Services that checks the Registry in the transport of medically unstable patients (Table).

West Virginia is one of only two states in the country considered to have a "mature" POST program (www.polst.org). To qualify to be considered mature, more than 50% of all healthcare setting (hospitals, nursing homes, and hospices) in all regions of the state have to be demonstrated to be using the POST form. West Virginia has also garnered national attention because of its online West Virginia e-Directive Registry. This registry receives advance directives, DNR cards, POST forms, surrogate selection forms, and guardianship papers from treating healthcare providers and the public and with the consent of patients or their legal agents releases them to treating healthcare providers at the time of a medical crisis. In a March 13th, 2015 *New York Times* article, West Virginia was noted as a pioneer in end-of-life planning because of its POST program and online registry.[4]

POST programs have become a national best practice for identifying and respecting patients' end-of-life wishes by translating them into medical orders. In its 2014 report, *Dying in America: Improving Quality and Honoring Individual Preferences near the End-of-Life,* the Institute of Medicine encouraged all states to adopt a POST or similar type program.[1] The National Quality Forum and AARP have also recognized the POST program and "internet-

Objectives

1. *Describe the process of advance care planning;*
2. *Explain West Virginia's nationally recognized system to respect patients' wishes and the components of that system; and*
3. *Explain the advantages of the POST form compared to advance directives to respect West Virginians' preferences to die outside the hospital.*


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End-of-Life Care
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Table. Deliverables of West Virginia's System to Provide High-Quality Care for Patients with Advanced Illness

- Standardized practices, policies, and forms
- Trained advance care planning facilitators
- Timely discussions prompted by prognosis
- Surprise question, "Would I be surprised if this patient died in the next year?"
- Clear, specific language on an actionable brightly colored, easily identified POST form
- Orders honored throughout the system including Emergency Medical Services
- Quality improvement activities for continual refinement
- Online secure electronic registry for 24/7 access to patients' directives and orders

based registries" as preferred practices to improve the care of the dying by honoring individuals' preferences near the end-of-life.[5]

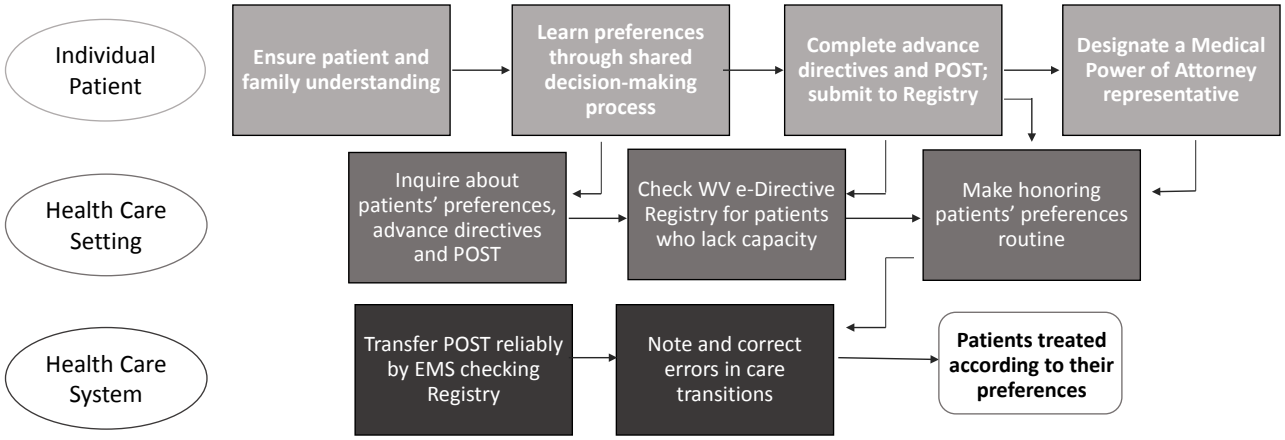
West Virginia's e-Directive Registry has grown steadily since its creation in October 2010. It has received over 50,000 forms with more than 1,000 new forms received per month. It provides 24 hours a day, 7 days a week online access to treating healthcare providers through the West Virginia Health Information Network login function (http://www.wvhin.org/default.aspx). It is a password-protected HIPAA-compliant system. It provides accurate, relevant information about a patient's preferences for treatment in a medical crisis. Because of the volume of forms received by the West Virginia e-Directive Registry, in May 2015 the e-Directive Registry contracted for a new fax service which allows an unlimited number of faxes to be received at the same time. The new fax number for the registry is 844.616.1415.

Advance directives are another success story for West Virginia because more West Virginians have completed advance directives than residents of any other state. Based on market research surveys conducted by the West Virginia Center for End-of-Life Care (www.wvendoflife.org), 50% of West Virginians have one or more types of advance directives. The next closest state to have documented advance directive completion by its citizens is New York with 42%. Advance directives were first developed in California in the 1970s because of fears by patients of lingering deaths, intense, painful suffering, tremendous burdens on family, and no control by patients or family over the end-of-life care treatment that a patient receives. Now all 50 states and the District of Columbia have advance directive laws and forms. Research has shown, however, that advance directives are not as effective as initially thought. Research by multiple researchers including those at the WV Center for End-of-Life Care have demonstrated that advance directives do not impact a patient's site of death.[5] Though 92% of West Virginians state a preference to die outside of the hospital, only 57% of deceased West Virginians who have submitted advance directives to the West Virginia e-Directive Registry do, and there is no significant difference between this 57% and the 59% of all West Virginians who die outside of the hospital.

In contrast to advance directives, the POST form has been shown to have much more of an impact on where patients die. Eighty-eight percent of West Virginians who submitted a POST form with comfort measure orders to the Registry died outside of the hospital.[5] This is as would be expected since the POST comfort measure orders read, "Do not transfer to hospital for life-sustaining treatment. Transfer only if comfort needs cannot be met in current location."

Advance directives are still helpful in patient care. The medical power of attorney document provides treating healthcare providers the name of the person the patient trusts to make decisions for him or her if the patient loses decision-making capacity. Also, a West Virginia Living Will, which only goes into effect if the patient is terminally ill or in a persistent vegetative state and also lacks decision-making capacity, states the patient's preferences not to receive life-prolonging interventions that would serve solely to prolong the dying process or maintain the person in a permanently unconscious state. Advance directives have generally been found to be most helpful once a patient has been hospitalized and a physician has determined that the patient lacks decision-making capacity. The West Virginia Center for End-of-Life Care recommends that all West Virginians over the age of 18 complete one or both types of advance directives so that the person they want to be making medical decisions for them and the type of treatment they do and do not want at the end of life can be known and respected. The cases of Karen Ann Quinlan, Nancy Cruzan, and Terri Schiavo, all young women in their 20s at the time they lost decision-making capacity, underscore the importance of completing advance directives since it cannot be predicted in advance when a situation may

Figure. West Virginia's *System* to Provide Patient-Centered, High-Quality Care for Patients with Advanced Illness*



*Clinician answers "No, I would not be surprised" to the surprise question, "Would I be surprised if this patient died in the next year?"

arise in a person's life when advance directives will be helpful.

POST forms, which are medical orders, are identified by emergency medical services as they are transporting patients to emergency departments, and a POST form with comfort measures orders may lead to the patient being admitted to a hospice or spared unwanted intubation in the emergency department and mechanical ventilation in an intensive care unit.

Since 75% of West Virginians repeatedly say in surveys conducted over the past decade that at the end-of-life they would prefer to live a shorter period of time to avoid pain, suffering, and being kept alive on machines, the POST form more than advance directives allows West Virginians with such preferences to be treated according to their wishes and with the emphasis on comfort as opposed to treatments which might increase their suffering.[5]

For the end-of-life care in West Virginia to be exemplary and nationally respected, it is based on a system of care (Figure). There are seven deliverables that distinguish the West Virginia system to respect patients' wishes (Table).

One not previously mentioned component of West Virginia's system to improve end-of-life care is its hospital-based palliative care teams. In 2014, West Virginia hospitals provided a total of 3,676 palliative care consultations. Palliative care consultants identified patient's goals for treatment, provided pain and symptom management, provided psychological and spiritual support to patients and families, and assisted patients and families and healthcare professionals to identify a discharge plan based on the patient's overall condition and preferences. Not surprisingly, the most common diagnosis of patients receiving palliative care consultations in West Virginia hospitals is cancer. Other common diagnoses are lung disease, strokes, dementia, and heart disease. The most common discharge location for patients seen by hospital-based palliative care teams is hospice either at home or in a hospice house. Only about a fifth of those seen in consultation die in the hospital.

In summary, West Virginia's Center for End-of-Life Care is contributing to national best practices, and its citizens are benefiting. Through research in collaboration with those in other states, Center personnel have demonstrated that the POST form is superior to advance directives in impacting patients' site of death. The number of forms submitted to the West Virginia e-Directive Registry is increasing and the number of people logging on to the West Virginia e-Directive Registry to search for patients with advance directives and medical orders is up over 300% from 2014. West Virginia's Palliative Care Network is continuing to grow with more patients having their pain and symptoms controlled and more being discharged home where they prefer

to be at the end of life. Although these outcomes speak quite highly to West Virginia's system for end-of-life care, there are still many opportunities to improve the system including a greater percentage of West Virginians completing advance directives, more hospitals developing palliative care services, and more nursing homes assisting their residents to complete POST forms.

The accomplishments in West Virginia are only possible because of the continuous support by the Governor and the West Virginia Legislature and the oversight of the West Virginia Department of Health and Human Resources through the Bureau for Public Health. For a small state with limited resources, the Center for End-of-Life Care has enabled West Virginia to stand out nationally as a model program to assist other states in providing better end-of-life care to their citizens. For questions about West Virginia's innovative program to respect patients' end-of-life treatment wishes or to receive forms or resources, please visit the Center for End-of-Life Care website, www.wvendoflife.org, or call 877.209.8086.

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CME Post-Test

11. According to research done by the West Virginia Center for End of Life Care, what percentage of adult West Virginians have completed advance directives?
    a. 30%
    b. 40%
    c. 50%
    d. 60%
    e. 70%

12. Which national organization has recommended completion of a Physician Order for Scope of Treatment form for seriously ill patients for whom the physician would not be surprised if the patient died in the next year?
    a. Institute of Medicine
    b. National Quality Forum
    c. Center for Medicare and Medicaid Innovation
    d. American College of Physicians
    e. American Medical Association

13. What is the legal status of advance directives in the United States?
    a. The majority of states have advance directive laws.
    b. Most states have Medical Power of Attorney laws but not Living Will laws.
    c. Most states have Living Will laws but not Medical Power of Attorney laws.
    d. All 50 states and the District of Columbia have advance directive laws.

2016 Calendar of Events

MAY 23-26: WVMGMA Regional Meetings - *Locations throughout West Virginia*

JUNE 11-15: AMA Annual Meeting - *Hyatt Regency, Chicago*

JUNE 11: Annual West Virginia University Otolaryngology Alumni Meeting - *Morgantown, WV*

AUGUST 4-5 & 11-12: Certified Medical Insurance Specialist (CMIS) Course - *WVSMA Offices, Charleston, WV*

AUGUST 26-28: 2016 WVSMA Annual Healthcare Summit - *The Greenbrier, White Sulphur Springs, WV*

SEPTEMBER 22-23: WVMGMA Fall Conference - *Stonewall Jackson Resort*

OCTOBER 13-14: State Office Managers Association Conference - *Lakeview Golf Resort & Spa, Morgantown, WV*

OCTOBER 20-22: Appalachian Addiction & Prescription Drug Abuse Conference - *Embassy Suites, Charleston, WV*

OCTOBER 21, 28 & NOV 4, 11, 18: Certified Medical Coder (CMC) Course - *WVSMA Offices, Charleston, WV*

OCTOBER 28-30: WV Academy of Otolaryngology - Head & Neck Surgery Annual Meeting - *The Greenbrier, White Sulphur Springs, WV*

NOVEMBER 12-15: American Medical Association Interim Meeting - *Orlando, FL*

2017

MARCH 24-25: Physician Practice Conference & Annual Business Meeting, *Embassy Suites, Charleston, WV*

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Morgantown	5/24	Wheeling	5/12
Bridgeport	6/2	Beckley	5/19
Weirton	6/9	Martinsburg	5/26

If you need additional information about CARE or CME programs, please contact Steve Brown.

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Making a Dent in Undiagnosed and Untreated Depression among Older West Virginians

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Abstract

Importance: Depression, a serious and debilitating disease, remains under-diagnosed and inadequately treated among older adults.

Objective: To describe the prevalence of depression among older West Virginians and report the extent to which primary care providers screen Medicare beneficiaries for depression.

Methodology: Descriptive analysis using 2014 Behavioral Risk Factor Surveillance System to estimate depression prevalence; Medicare Part B claims, 2012 – 2014, to measure depression screening.

Findings: In 2014, depression affected 10.1%, 95% CI [8.6%, 11.6%] of older West Virginians. While screening increased, less than 4% of Medicare beneficiaries seen in primary care that year were screened.

Conclusion: We have a significant opportunity to improve diagnosis, treatment and quality of life for older West Virginians with depression, and Medicare reimbursement for screening is available to primary care providers. Although many older depressed patients can be treated in the primary care setting, integration of behavioral health and primary care has distinct benefits.

Introduction

Depression is a serious and debilitating disease that, by 2030, is projected to be one of the three leading causes of disease burden world-wide.[1] Yet, despite its seriousness and significance, depression remains under-diagnosed and inadequately treated among older adults.[2-4] Left untreated, depression can lead to numerous adverse outcomes including poorer quality of life, reduced compliance with treatment, worsening chronic disease management, and death from suicide or other causes.

In this paper, we discuss the prevalence of depression among older adults nationally and in West Virginia; note the challenges faced by primary care practitioners in recognizing and initiating care; examine claims data showing primary care providers' screening for depression among older Medicare beneficiaries in West Virginia; and consider ways in which we can respond to the needs of older West Virginians with depression.

Prevalence

While not a normal part of aging, depression is prevalent among older people in the United States. The National Institute of Mental Health estimated the 12-month prevalence of major depressive episode to be 5.1% among those aged 50 years and older in 2013.[5] In the primary care setting, where practitioners manage almost two thirds of older adults with major depression, prevalence estimates for those aged 55 and older range from 6% to 9%.[6-8]

In West Virginia, rates of depression are particularly high, increasing the potential for under-service. In 2006 (the most recent year during which most states administered the optional depression module as part of the Behavioral Risk Factor Surveillance System, BRFSS), West Virginia had one of

Objectives

1. *To raise awareness about the burden of disease imposed by depression among elder West Virginians.*
2. *To examine the extent to which primary care providers screen Medicare beneficiaries for depression in West Virginia*
3. *To consider ways primary care and behavioral health can collaborate to address challenges associated with depression in elder West Virginians.*

the highest adult age standardized rates of major and other depression, 14%.[9] In a different analysis, also using 2006 BRFSS data, Hout et al identified West Virginia as one of five states in which over 16% of depressed adults had at least one health service deficit, defined as experiencing one or more of the following in the past 12 months: no health insurance, no health care provider, deferred medical care because of cost, and/or no routine medical exam.[10] Taken together these findings suggest depression is prevalent in West Virginia, and, when not identified, many West Virginians with depression may not receive care, even though treatment would benefit them. This includes older West Virginians.

Challenges and opportunities

Depression causes emotional suffering and is associated with reduced quality of life, impaired functioning, psychiatric and physical co-morbidity, and mortality.[11-13] A recent meta-analysis associated late-life depression with increased risk for all-cause dementia, Alzheimer's disease, and vascular dementia.[14] Health care utilization is also increased with late-life depression.[15,16] Among all age groups, older adult males have one of the highest risks of suicide.[17] In cases of suicide, there may be missed opportunities to intervene. For example, one study showed that more than 50 to 75 percent of older adults who commit suicide saw their physician for general medical care during the preceding month, including 39% who were seen in the week prior to their death.[18]

Because of the frequency with which older adults are seen in primary care, this setting provides an opportunity for both recognition and initiation of treatment. However, for many reasons, depression can be particularly difficult to detect in older patients. O'Connor et al summarize these concisely noting that: (1) medical conditions or medications can cause symptoms of depression (e.g., weight loss or appetite change, psychomotor retardation, loss of energy or fatigue, insomnia or hypersomnia, difficulty concentrating); (2) older patients tend to present with somatic complaints rather than with more typical symptoms such as depressed mood; and (3) older patients have high levels of co-morbidity with medical conditions, including cancer, cardiovascular disease, neurological disorders, metabolic disturbances, arthritis, and sensory loss.[6] In a systematic literature review, Cepoiu et al identified other potential reasons for under recognition and under treatment of depression by non-psychiatric physicians, irrespective

of patient age. They grouped these into patient, provider, and system barriers. Excluding those mentioned above, they listed patient resistance to a diagnosis of depression; provider concerns for potential patient stigma, time pressures, the belief that the diagnosis is burdensome, inadequate knowledge about diagnostic criteria and treatment, lack of a psychosocial orientation, inadequate insight into different cultural presentations of mental illness; and the system barriers of productivity pressures, third-party mental health coverage limitations, restrictions on specialist, drug, and psychotherapeutic care, no systematic method for detecting and managing depressed patients and inadequate continuity of care.[19]

Given the challenges, it is not surprising that, in many cases, there is a failure to recognize depression in primary care and that under-treatment appears to be more significant in older than younger depressed patients.[19-22]

Depression Screening of Medicare Beneficiaries

Treatment of depression begins with recognition of the condition. The U.S. Preventive Services Task Force (USPSTF) recommends depression screening for the general adult population and specifies that screenings should occur with adequate systems in place to ensure "accurate diagnosis, effective treatment and appropriate follow-up."[23] The American College of Preventive Medicine (ACPM) supports the USPSTF recommendation, adding that all primary care practices should have such systems, either within the setting itself or through collaboration with mental health.[24]

Effective October 14, 2011, Medicare Part B began covering annual depression screening of up to 15 minutes for Medicare beneficiaries in primary care settings when staff-assisted depression care supports are in place.[25] Primary care providers receive payment for screening by using Healthcare Common Procedure Coding System (HCPCS) G0444 (annual depression screening, 15 minutes).

Methods

To estimate the prevalence of depression among West Virginians aged 65 and older, we used the most recent BRFSS data (2014)[26] and a proxy measure (i.e., rating mental health not good for 14 days or more in the last month) validated by Hout to be predictive of current depression as measured by the Personal Health Questionnaire Depression Scale (PHQ-8). The BRFSS is a state-based system of telephone surveys conducted by the state health departments in partnership with the Centers for Disease Control and Prevention. Similar to other states, West Virginia uses a disproportionate stratified sample design. The CDC publishes full details about sampling methodology and data quality with the data. For this paper, we used the BRFSS data and SAS procedures for complex survey designs to calculate the percent, with 95% confidence interval, of West Virginia respondents aged 65 years or older who reported their mental health was not good for 14 days or more in the last month.

Given the challenge of identifying and initiating depression care for older adults, recommendations from clinical practice guidelines and Medicare's relatively recent coverage for depression screening, we also set out to determine the extent to which West Virginia Medicare beneficiaries were screened in primary care as measured through billing codes. To do this, we identified all fee-for-service Medicare beneficiaries with coverage at any time during each of three years – 2012, 2013, and 2014. Using Medicare Part B data, we counted the number of beneficiaries who had one or more primary care visits (HCPCS codes 99201–99205, 99211–99215, G0402, G0438, G0439, G0444) during the year and used this to measure opportunities for depression screening. Next, we calculated the percent of these beneficiaries for whom providers submitted claims for depression screening (HCPCS G0402, G0438, G0444). We included G0402 (Initial preventive physical examination) and G0438 (Annual wellness visit, initial) in the numerator because these services necessarily include depression screening and G0444 cannot be billed in combination with these codes. Their inclusion gives a fuller measure of depression screening. Because CMS also has HCPCS codes that providers can use to record the status of follow-up (G8431–G8433, G8510, G8511), we examined the use of these codes in combination with the depression screening code. We made two additional queries. First, we examined the National Provider Identifers (NPIs) of clinicians billing for depression screening to determine which professions are using the code. Finally, for 2014, we examined the characteristics of patients screened for depression. We used SAS software, version 9.2 (SAS Institute Inc., www.sas.com) for all analyses.

Results

On the basis of BRFSS data, we estimate the 2014 prevalence of depression to be 10.1%,

Table 1: West Virginia Medicare Fee-for-Service Beneficiaries, Primary Care Encounters,[1] and Screening for Depression, 2012 - 2014

Year	Number of Medicare Beneficiaries (A)	Number of Medicare Beneficiaries with a Primary Care Encounter (B)	Percent (B/A)*100	Number of Medicare Beneficiaries Screened for Depression (C)	Percent (C/B)*100
2012	216,341	128,427	59.4	3,683	2.9
2013	219,642	130,594	59.5	3,740	2.9
2014	218,185	128,001	58.7	4,918	3.8

Data Source: Medicare fee-for-service Part B claims for the annual time periods.
[1]Primary care encounter defined as visits coded 99201-99205, 99211-99215, G0402, G0438, G0439, G0444

Table 2: Depression Screening Claims (Code G0444, G0438, G0402) for Medicare Fee-for-Service Beneficiaries Paired with Follow-up Codes for an Encounter on the Same Day, 2014

Pairing of Depression Screening Code G0444, G0438, G0402 with:	Frequency (%)
Screening for clinical depression is documented as being positive and a follow-up plan is documented (G8431)	10 (0.2)
Screening for clinical depression is documented as negative, a follow-up plan is not required (G8510)	317 (5.9)
Other: Screening for clinical depression documented as positive, follow-up plan not documented, reason not given (G8511), Screening for clinical depression documented as positive, follow-up plan not documented, documentation stating patient is not eligible (G940) or Screening for depression not documented, documentation stating patient is not eligible (G8433)	32 (0.6)
Unpaired	4,986 (93.3)

Data Source: Medicare fee-for-service Part B claims for the time period 1/1/2014 to 12/31/2014.
Note: Not all claims met conditions for coverage and, hence, the number of claims (5,345) exceeds the number of unique Medicare fee-for-service beneficiaries who received screening (4,918).

Table 3: Disciplines Submitting Medicare Fee-for-Service Claims for Depression Screening[1]

Disciplines	2012	2013	2014
Family Medicine	156	174	191
Internal Medicine	70	70	82
Other	75	80	83

Data Source: Medicare fee-for-service Part B claims for the annual time periods.
[1]Screening for depression identified through use of HCPCS code G0444 (annual depression screening, 15 minutes), G0402 (Initial preventive physical examination; face-to-face, services limited to new beneficiary during the first 12 months of Medicare enrollment), G0438 (Annual wellness visit, initial).

95% CI [8.6%, 11.6%], of West Virginians aged 65 and older.

In Table 1, we show the percentage of Medicare beneficiaries with fee-for-service coverage for whom a bill was submitted for depression screening in the years 2012 through 2014. In each year, about 59% of all beneficiaries had one or more primary care visits; however, providers billed for depression screening for less than 4% of these patients. Nevertheless, the number of screenings billed annually increased in West Virginia.

For screenings in 2014, the claims generally did not include codes indicating the results as positive or negative for depression. It is impossible to say how many patients were identified as depressed and how many of those had a plan for follow-up. See Table 2. Most of the primary care providers who billed screenings for depression identified themselves as family medicine or internal medicine. Less than 25% of screenings were billed by other providers, including nurse practitioners and physician assistants. See Table 3.

Patients screened for depression in West Virginia are primarily white, mirroring the racial characteristics of the state's population. More screened patients are female than

Table 4: Characteristics of West Virginia Medicare Fee-for-Service Beneficiaries Screened for Depression, 2014[1]

Gender	Total # of Beneficiaries	% of Total
Female	2,727	55.4%
Male	2,191	44.6%
Race		
Black	94	1.9%
White	4,766	96.9%
Other/Unknown	58	1.2%
Age Category[2]		
65-74	2,904	59.0%
75-84	1,513	30.8%
85+	501	10.2%
Location[3]		
Rural	2,115	43.0%
Urban	2,769	56.3%
Missing	34	0.7%

Data Source: Medicare fee-for-service Part B claims for the time period 1/1/2014 to 12/31/2014.
[1]Screening determined by billing for HCPCS code G0444 (annual depression screening, 15 minutes), G0402 (Initial preventive physical examination; face-to-face, services limited to new beneficiary during the first 12 months of Medicare enrollment), G0438 (Annual wellness visit, initial).
[2]Age calculated as of 12/31/2014.
[3]Urban/rural status determined by beneficiary zipcode.

male, consistent with the literature. More live in urban areas than rural. Fewer screened patients are over age 75. See Table 4.

Addressing the Challenges

Primary care providers have a major role to play in identifying and treating older West Virginians with depression. Yet, it is unlikely that primary care providers alone will be able to meet all needs, given the burden and complexity of depression in our state. Results in this paper indicate low rates of billed depression screening in West Virginia seniors. This may not mean that screening does not happen, but it is unlikely to involve standardized instruments or to be systematized.

One reason it may not be happening is that active screening for depression could overwhelm practices' capacity through significant identification of patients needing diagnosis and treatment. The behavioral health system also may lack the capacity and penetration to respond to growing needs. The solution likely includes shared responsibility and collaboration between primary and behavioral health care, as well as technologies such as tele-behavioral health and mHealth (e.g., mobile apps for self-management).

Integrated care, also known as collaborative care, improves outcomes for people with depression.[27] Benefits include decreased depression, increased quality of life, decreased stress, and lower rates of psychiatric hospitalization. In addition, integration of behavioral health and primary care services increases recognition of behavioral needs and disorders, increases access, decreases stigma, decreases inappropriate use of medical services, positively impacts patient adherence to treatment of both physical and behavioral disorders, and increases physician knowledge, skill sets and comfort through collaboration.

Blount described a hierarchy of collaboration that moves from coordinated care through co-located care to integrated care.[28] Heath et al further elaborated and proposed a standard framework for collaboration/integration.[29] At its simplest, coordinated care involves referral from one provider to another with infrequent information exchange driven by compelling circumstances. As coordinated care matures, communication about shared patients increases, driven by specific patient issues. Co-location of treatment offices resolves some of the coordination problems that may occur and facilitates communication and consultation between primary care and behavioral health. As collaboration increases, regular face-to-face interactions about specific patients occur, and coordinated plans for difficult patients are developed. Integrated care involves a team approach, unified treatment plans, and integrated processes and systems. At its best, communication occurs consistently at system, team and individual levels; cultures blur or blend; and collaboration is driven by a shared concept of team care. Additionally, integrated care commonly includes

the health home model; a stepped approach to care which, except for acutely ill patients, starts at the lowest intensity; and a method for determining which populations are to be served by primary care and which by specialty behavioral health.[30]

Tele-behavioral health can support the move to collaborative and integrated care approaches by strengthening relationships within teams and across organizations, "expanding the walls" of a clinic's service offerings. It can expedite access to behavioral health specialists in two ways: primary care providers can conduct consultation at a distance and patients can participate in videoconference sessions with behavioral health specialists. Patient acceptance of tele-behavioral health services is high and outcomes are comparable to face-to-face visits.[31]

The USPSTF Recommendations make clear that a wide range of different arrangements can constitute adequate systems to ensure accurate diagnosis, effective treatment and follow-up; and the Recommendations include guidance for implementation. For example, a screening program, including a designated nurse to advise physicians of positive screening results and a protocol to facilitate appropriate behavioral health referral, may be sufficient. On the other hand, the USPSTF acknowledges the strong evidence for the effectiveness of the systematic team-based collaborative care model, as described above.

While establishing a basic system to support screening is fairly straight-forward, developing the more advanced forms of integrated care or building patient centered health homes is complex. One way of approaching the resolution of complex problems is through collaborative learning. In recent years, learning and action networks (LANs), or community coalitions, are bringing patients, providers and other stakeholders together to address common issues. These coalitions have the power to concentrate problem-solving resources and tackle tough issues. For example, in West Virginia, stakeholders in five communities recently came together to focus on a high needs population, i.e., hospitalized patients dually-eligible for Medicare and Medicaid with depression and other co-morbid condition(s). Among other outcomes, communities were able to realize a pre-hospital discharge referral rate (to primary or behavioral health care) of 65% (225/349) in the target population. This is a beginning but much more remains to be done.

Conclusions

Our descriptive analysis is subject to some limitations. We do not eliminate previously diagnosed patients from the denominator of our annual screening measure; however, given the paucity of screening that is occurring, this is unlikely to materially change findings. Too, previously diagnosed patients can benefit from annual re-screenings. This analysis also includes only Medicare beneficiaries under fee-for-service, and billing data may under-represent screenings.

Still, the analysis of BRFSS and claims data presented here suggests that depression is common among older adults in West Virginia but may go unrecognized. This presents a significant opportunity to improve diagnosis, treatment and quality of life for individuals with depression. Medicare reimbursement is available to primary care practitioners for depression screening and there are several screening tools available. Although many older depressed patients can be treated in the primary care setting, integration of behavioral health and primary care has distinct benefits and there are a range of effective approaches for collaboration and integrated care management, including the use of tele-behavioral health. Ultimately, as we gain experience bringing communities together to build coordinated, collaborative systems of care, we will learn more and be better able to implement solutions tailored to the difficult and complex problems facing older West Virginians with depression.

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CME Post-Test

14. The prevalence of depression among West Virginians aged 65 and older is estimated to be about 5%
    a. True
    b. False

15. The U.S. Preventive Services Task Force recommends routine depression screening for adults and adolescents in clinical practices,
    a. When psychiatrists are members of the practice
    b. Provided there are systems in place to assure accurate diagnosis, effective treatment and follow-up
    c. In all circumstances without exception
    d. Only when there will be continuing involvement by the patient's primary care physician

16. Medicare covers depression screening for beneficiaries
    a. Under Part B
    b. In primary care settings
    c. Annually
    d. All of the above

17. Claims data show that depression screening for Medicare beneficiaries is wide-spread in West Virginia.
    a. True
    b. False

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The Long-Term and Post-Acute Care Continuum

Todd H. Goldberg MD, CMD, FACP
Associate Professor and Director of Geriatrics, WVU Charleston Division/CAMC

***Due to the excellent reference material in this article and its perfect fit with this special issue, we have reprinted this article from the Nov/Dec 2014 issue of the* WV Medical Journal.**

As a geriatrician, a physician specializing in the care of the elderly, I have found that one of the most interesting as well as challenging aspects of providing geriatric care is understanding all the different types of care available for seniors, and appropriately advising patients and colleagues. I have repeatedly noticed that not only the general public but even many physicians don't fully appreciate the variety of care settings for seniors. Families need to understand what options are available for their loved ones, and health care providers need to understand what options are available for their patients. Too often I have seen, for example, patients discharged from the hospital on the assumption they can get certain types of tests or followup care in their "nursing home" when in fact the patient lives in an independent or assisted living facility where no such services are available. Therefore it will be helpful to summarize what the aging network calls "the continuum of care," following the trajectory of a hypothetical senior patient (*Mrs. "S.P.")* from independence down to the end of life.

As background, it is necessary to be familiar with Medicare and Medicaid and what they cover. Since their establishment in 1965 as Titles 18 and 19 to the Social Security Act (http://www.ssa.gov/OP_Home/ssact/ssact-toc.htm), both Medicare (Health Insurance for the Aged and Disabled) and Medicaid (Medical Assistance for the Poor) cover aspects of long term care (LTC) but in different ways. Medicaid covers long term nursing home care for those who qualify financially and medically, but generally does not cover residential care/assisted living. Medicare is more complicated due to its four different parts. Medicare Part B covers physician services and therapies, generally regardless of location (i.e. physicians bill Medicare Part B for patients seen in hospitals, outpatient or LTC settings, but using different billing codes based on setting). Medicare Part A covers hospitalizations, hospice, home care, and skilled nursing home care, but only temporarily after a 3 day hospital stay (about which, see more below). Medicare Part D covers drugs and vaccines regardless of settings, and Medicare Part C consists of various managed care plans, which vary in benefits but always cover at least whatever traditional Medicare covers. Most, if not all, seniors in America have Medicare. Medicaid has strict financial qualifications which differ by state. Those who qualify for both Medicare and Medicaid are termed "dual eligibles." In addition to U.S. government web sites such as www.medicare.gov, a good source of facts on Medicaid and Medicare may be found at the AARP Public Policy Institute web site, http://www.aarp.org/research/ppi/.

Simultaneously with the passage of Medicare and Medicaid in 1965, the federal government passed the "Older Americans Act" which funds social programs for seniors via the U.S. Administration on Aging ("AoA") and state/local Area Agencies on Aging ("AAA's") (http://www.eldercare.gov/Eldercare.NET/Public/About/Aging_Network/Index.aspx). AAA's offer many services including senior centers in most communities, where the elderly can go for activities and meals during the day for a small fee.

The case: Mrs. S.P. is an 80 year old widow with osteoporosis and mild cognitive impairment due to early stage Alzheimer's disease, who still lives alone in her own home in a "55-plus" community. Her daughter a close friend/neighbor help her with shopping, paying bills, and traveling to appointments, but she is safe to be home alone most of the time. She sometimes goes to a Senior Center for lunch and companionship, visits her primary care physician's office every few months, and still manages her own prescriptions with occasional help and reminders from the daughter and the neighbor.

Independent Living: Like Mrs. S.P., a majority of seniors live independently in their own private homes or apartments, alone or with friends or loved ones, and are able to function sufficiently, schedule and travel to medical and other appointments, obtain food and medicine, and generally manage their own basic needs. "Independent Living" includes private homes or apartments, subsidized or other congregate apartments for seniors, sometimes attached to other levels of care in a residential care community. Most independent seniors' outpatient medical needs are covered by Medicare Part B and Medicare Supplement policies, including Medicaid. When function starts to deteriorate but the need for personal assistance is modest, seniors are often helped by their families, friends, or other informal nonpaid caregivers and are able to stay at home until something changes.

Home Care: Mrs. S.P. is hospitalized for a urinary tract infection with delirium. She recovers but remains deconditioned and cannot ambulate as well as before or get out to her doctor's office. She is not yet judged to require 24 hour care. Thus

the hospital social worker sets her up for home nursing care and therapy upon discharge, and her doctor offers to follow her at home as well.

Agency Home Care: Medicare Part A pays for skilled home care by a visiting nurse agency, if the patient is predominantly homebound and requires intermittent skilled nursing care and therapies (http://www.medicare.gov/coverage/home-health-services.html). Care is not provided every day or indefinitely, and generally the patient will have had a recent change in condition such as acute illness or hospitalization. With the exception of special state "waiver programs" (discussed below), custodial or non-skilled long-term care at home is generally not covered by any health insurance, but there are many non-medical agencies and companion services available for a fee.

Physician Home Care: Medicare Part B covers all medically necessary physician home visits, using home visit codes 99341-50 (Giovino, 2000). For physician home visits under Medicare Part B, the patient does not have to be completely home bound, though the reason for the medical necessity of the visit must be documented. Conversely, under the latest regulations, in order to be eligible for skilled agency home care under Medicare Part A, the patient must be certified home bound, and effective 2011 must be seen "Face to Face" by the physician or NPP (non-physician provider; nurse practitioner or PA) within 90 days before or 30 days after the start of home care services (http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/Downloads/SE1038.pdf). A form documenting the "Face to Face" visit, including the reason for the visit and for the patient's homebound status, must be provided to the home health agency in order for the agency to get paid and the patient to get services. The physician/NPP may bill Medicare Part B for both the face to face visit (office, hospital, nursing home or home visit), and additionally for filling out the home health certification forms (home care certification/recertification codes G0179-GO181) (Nicoletti, 2005).

Waiver Programs: For patients who qualify for both Medicare and Medicaid (dual eligibles) and who otherwise would qualify to be in a nursing home, state "Medicaid Waiver Programs" may provide extra home and community based care. Depending on state funds and regulations, extra social and nursing support may be available to help such individuals remain at home rather than being in a nursing home, which most people would prefer. The State of West Virginia does offer this "Waiver" program to a limited number of aged/disabled individuals subject to the availability of state funds (http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/Waivers.html).

Mrs. S.P's primary care physician visits her at home, bills Medicare Part B for a home visit code, 99349, and returns the Face to Face certification form sent by the home care agency by fax. Several days later

he receives in the mail a home care plan of care certification form (Form "485") from the agency, and bills Medicare code G0180 for signing this form and returning it to the agency. The home care agency then bills Medicare Part A for their services which continue for several weeks. After the home care episode is over, in consultation with the visiting nurse and family, the doctor decides that Mrs. S.P. is no longer safe to live at home alone due to increasing frailty and dementia and requires care most of the day and assistance with medications and ADL's. After a period of trying Adult Day Care, she is admitted to an Assisted Living Facility.

The necessity of, and insurance coverage for, long term care is often defined based on functional impairment and the need for assistance in activities of daily living. To qualify for nursing home care, the patient must usually be impaired in 4 activities of daily living (ADL's; 5 in West Virginia). The five classic basic/self-maintaining activities of daily living (ADL's) are bathing, dressing, toileting, transferring in and out of bed, and eating. More advanced functions such as going out and traveling, keeping track of money and medicine, and using the telephone are termed "Instrumental" or "Intermediate" activities of daily living (IADL's) (Lawton & Brody, 1969). To qualify for assisted living, less assistance is needed than for a nursing home (i.e. dependent in less than 4-5 ADL's), but there still must be some functional need such as provision of medications and meals. To qualify for payment under private long-term care insurance policies for any type of LTC, again some documented ADL impairment with corroborating medical justification is generally required, usually with a 100 day elimination period depending on the policy.

Assisted Living: When an older person, such as Mrs. S.P., needs enough assistance in ADL's that they are unsafe to live alone and don't have enough informal/family supports to survive safely at home, the next level of care is usually assisted living, also known as personal care, residential care, boarding homes or rest homes. These facilities range from small adult foster homes to large institutional settings and are generally privately owned and operated on a fee for service basis. Assisted living, like non-medical home care, is not usually covered by insurance unless the individual has purchased a private long term care insurance policy for such a contingency. Assisted living facilities (ALF's) are licensed and regulated by the individual states, but not as rigorously as with nursing homes; they vary in their capabilities and requirements under state law. Consumers must clearly understand what services they are paying for. Usually ALF's provide light duty nursing (including medication administration, insulin injections, and checking vital signs and labs) 24 hours a day, as well as outpatient therapy and activities. ALF's usually dispense medicine and provide three meals a day. Most ALF patients have at least one ADL deficit and often more, but are not completely dependent in all ADL's. ALF's do NOT usually have medical care available onsite and cannot care for anyone with heavy nursing needs (e.g. skilled wound care, feeding tubes, I's & O's (fluid intake/output), catheterization, IV's or other injectable medications other than insulin). Importantly, in most states including WV, ALF's cannot be responsible for individuals who are not ambulatory enough to vacate the building fairly independently in case of an emergency.

Physicians and NPP's may see ALF patients either in their office or at the facility, in which case "Domiciliary Care" codes 99324-99337 are used to bill Medicare Part B. The different billing codes used by Medicare since 2006 for visits to private homes vs assisted living homes and nursing homes are explained in the following Medicare document: https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/mm4212.pdf.

Definitions, terminology, and regulation of assisted living also vary greatly from state to state. A very general definition for assisted living is a "facility where persons not related to the owners are provided assistance with ADL's, meals and medications in a residential setting." In West Virginia, Assisted Living Regulations may be found at 64CSR 14, http://www.wvdhhr.org/ohflac. These regulations in WV differentiate between assisted living facilities (4 or more beds), residential care facilities (17 or more units part of a larger independent living community), small boarding/rest homes, and small unlicensed homes. Assisted Living and Residential Care are defined in WV as "places providing personal assistance and/or supervision to persons who are dependent upon the services of others by reason of mental or physical impairment, and who may require limited/intermittent nursing care." The consumer, and health professionals recommending these facilities, should have a full understanding of the type of facility being looked at and exactly what is provided, since they vary greatly (AGS, 2005). Alzheimer's Care or Memory Care units are another variant of Assisted Living which

provides secure care and extra supervision for dementia patients. There are approximately 100 ALF's in West Virginia with about 3000 beds, and about 50,000 ALF's nationally, serving over 1 million individuals.

Adult Day Care: For some older persons who have family members who can care for them at night at home, but who need activities and care during the day (e.g. Mrs. S.P., whose daughter works), Adult Day Care may be an option (http://www.eldercare.gov/Eldercare.NET/Public/Resources/Factsheets/Adult_Day_Care.aspx). These programs, available in most localities, offer several hours of care and supervision during the day, including meals and activities, and sometimes medication and therapies while the patient is there, several days per week. Most Adult Day Care programs are self-pay and not covered by insurance, but some programs have state funding or subsidies. An important variant of the Adult Day Care program, where available, is the "PACE" program – The Program of All Inclusive Care for the Elderly. PACE is generally a day-care center based intensive care management program, aimed at keeping nursing home-qualified patients on both Medicare and Medicaid ("dual eligibles") at home, which both saves money and improves quality of life. Modeled on the pioneering "On Lok" day care program in Chinatown in San Francisco, this excellent program has been replicated in many other areas of the country, but is unfortunately not available in West Virginia at this time due to a lack of state funding. A good summary of the history and nature of PACE programs may be found at http://www.npaonline.org/website/article.asp?id=12&title=Who,_What_and_Where_is_PACE?

Nursing Homes: After a few months at the ALF, Mrs. S.P. falls and breaks her hip. She is now non-ambulatory and dependent in several ADL's and thus needs complete 24 hour care. For post-acute care, she is considered for an inpatient rehabilitation facility (IRF) but is felt to be too weak to qualify for an intensive rehabilitation program. The hospital social worker now refers her for nursing home placement. The hospital physician signs a "PAS" form (Pre Admission Screening) which certifies that the patient has at least 4-5 ADL deficiencies and needs to be in a skilled nursing facility for rehabilitation and possibly long-term care. The physician bills Medicare Part B for seeing her in the hospital and then in nursing home, and the skilled nursing facility bills Medicare Part A for up to 100 days of skilled care.

Nursing homes (NH's), also known as nursing facilities (NF's) or skilled nursing facilities (SNF's), care for the sickest, neediest people in our society. When someone is too impaired to live at home or in the relatively unsupervised ALF setting, the next stop is usually a nursing home. Patients may stay in a NH temporarily for rehabilitation and recuperation after a minimum 3 day hospitalization (in which case Medicare A pays for up to a few months), or long term for the rest of their lives (in which case Medicare does NOT pay for the nursing home but Medicaid does after personal assets have been spent down). Regardless of setting, Medicare (Part B) generally pays for doctor's bills and outpatient testing and therapies. Medicare Part A pays the SNF 100% of skilled care fees for days 1-20, partially for days 21-100 (with a patient co pay currently set about $143/day), and nothing thereafter. The full/cash prices of nursing homes are even more expensive, averaging $248/day nationally, or over $90,000 per year! (http://www.medicare.gov/coverage/nursing-home-care.html.) In order to qualify for SNF benefits under Medicare Part A, the individual must have been hospitalized for 3 days – the notorious "3 day rule." "Observation" days do not count towards the 3 day payment window, a very controversial and problematic requirement which many Medicare beneficiaries and their families may not appreciate. The patient staying in the hospital may not even be aware that he or she is under "observation status" and not actually considered to be officially hospitalized for Medicare purposes, which may lead to confusion and unexpected bills – see recent articles in the New York Times and Wall Street Journal, (http://newoldage.blogs.nytimes.com/2013/10/29/two-kinds-of-hospital-patients-admitted-and-not/?_r=0) and (http://online.wsj.com/news/articles/SB10001424052702303376904579135732284488114). CMS regulations regarding inpatient payment have become even stricter in the past year, with patients staying over in the hospital but less than "two midnights" paradoxically being considered "outpatients" subject to Medicare Part B rather than Part A.

Federal nursing home regulations are part of the Social Security/Medicare law, as cited above, and are the same for every NF/SNF in the US, administered by the Centers for Medicare and Medicaid Services (CMS, formerly HCFA). These extensive regulations stem from the 1987 "OBRA" law (Omnibus Budget Reconciliation Act) which contained numerous nursing home reforms in response to a 1986 Institute of Medicine study on improving the quality of care in nursing homes (IOM, 1986). The congressional law may be found at 42USC and the corresponding CMS regulations may be found at 42CFR Part 483 – "REQUIREMENTS FOR STATES AND LONG TERM CARE FACILITIES." These are available online at http://www.law.cornell.edu/cfr/text/42/483. State nursing home regulations essentially mirror the federal requirements and differ only slightly from state to state. The WV State regulations for nursing homes (64CSR 13) are available on the OHFLAC website, http://www.wvdhhr.org/ohflac. Each year, state health surveyors on behalf of Medicare and Medicaid inspect each and every nursing home in the US and prepare a list of citations or violations of the state and federal NH regulations. Survey and quality information may be seen by any member of the public at www.nursinghomecompare.gov. The "State Operations

Table 1: Coverage for different levels of post acute care and therapy

Level of Care	Medicare Payment to Physician/ NPP	Medicare Payment to Institution/ Therapy Provider	Medicaid Payment to Institution	Private/ Other Medical Insurance	Self Pay	Comments/References/for additional information:
Outpatient Therapy	Medicare Part B pays NPP/ physician for out-patient services	Medicare Part B pays therapy provider	Medicaid pays provider for service (primary/ secondary)	Yes	Yes (co pays/ deductibles)	Patient travels from home to outpatient therapy provider. Therapy providers may also have sites within independent living or assisted living facilities.
Home Care	Medicare Part B pays physician / NPP for home visits and care certification/ oversight.	Medicare Part A pays agency for nursing care and therapies	Medicaid may pay for home/ waiver care for those eligible (see text)	Yes: Private medical insurance may pay for limited home care; private LTC insurance may cover LTC at home	Yes (co-pays/ deductibles for skilled care; private pay for non-skilled personal care).	Patients must be homebound and certified as such Face to Face by Physician. Refs. Giovino 2000, Nicoletti 2005, http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/Downloads/SE1038.pdf. American Academy of Home Care Medicine, www.aahcm.org.
Inpatient Rehab Facility (IRF)	Medicare Part B (for physician/ NPP visits)	Medicare Part A	Yes in most states, No in WV.	Yes	No – insurance usually pays. May be co-pays / deductibles.	Refs: American Academy of Physical Medicine and Rehabilitation, www.aapmr.org; http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/Inpatient_Rehab_Fact_Sheet_ICN905643.pdf.
Assisted Living/ Personal Care Facility	Medicare B pays MD/ NPP for office/ home visits.	None	None	No (Unless patient covered by private LTC insurance).	Yes (most Assisted Living is private self-pay).	AGS 2005, Assisted Living Federation of America, www.alfa.org; http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/mm4212.pdf.
Nursing Home Care	Medicare Part B pays physician/ NPP for NF/ SNF visits.	Medicare Part A (only up to 100 days)	Medicaid pays for LTC after Medicare and private pay exhausted	Private insurance may pay for SNF care similar to Medicare	Yes (for expenses not covered by Medicare/ Medicaid).	Ouslander 1994; Evans 1995; American Medical Directors Association for Long-Term Care, www.amda.com; American Health Care Association, http://www.ahcancal.org/.
Hospice	Medicare Part B continues to pay for physician visits separate from hospice	Medicare Part A	Medicaid pays provider	Private insurances may cover hospice care if terminal illness	No – insurance usually pays.	American Academy of Hospice & Palliative Care Medicine http://www.aahpm.org/.

Manuals" used by the surveyors, listing all nursing home regulations and interpretive guidelines in detail, are available at: http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_pp_guidelines_ltcf.pdf. Nursing facilities are required to respond to and correct all citations or else face financial penalties or loss of their operating licenses.

Due to this complex and strict regulatory system, nursing homes are standardized and similar everywhere in America, varying only in ownership, size and perhaps quality. Of about 15,000 nursing homes in the US, 82% of facilities have 26 or more beds, and approximately 65% are privately owned for profit; the rest are nonprofit (25%) or governmental ownership (10%). About 2/3 of nursing home patients are paid for by Medicaid (http://kff.org/medicaid/fact-sheet/overview-of-nursing-facility-capacity-financing-and-ownership-in-the-united-states-in-2011/). There are about 129 nursing homes in West Virginia – lists and quality ratings may be found at the OHFLAC website as well as Medicare's "Nursing Home Compare" site (http://www.medicare.gov/nursinghomecompare/search.html). The distinction between NF and SNF refers chiefly to the payer source (Medicare Part A or other insurance for the period of SNF care, Medicaid or self-pay for long-term NF care); in reality most facilities contain both skilled/non-skilled patients who may even be intermingled on the same unit, the difference only being relevant for billing purposes. Physicians see both skilled and non-skilled nursing home patients similarly, as medically necessary and as required by regulations – once every 30 days for the first 90 days then once every 60 days thereafter. Medicare Part B may be billed by the physician or NPP for any medically necessary or legally required visits for as long as the patient remains in the facility, using nursing facility CPT codes 99304-99318.

Medically, the needs of nursing home patients encompass all of geriatric medicine. Several articles in the literature offer helpful overviews of the medical care of nursing home residents. (Ouslander & Osterweil 1994; Evans et al. 1995), as does the online reference "UpToDate" (Gillick, 2013).

Hospice Care: After 100 days in the nursing home, Mrs. S.P. exhausts her Medicare Part A benefits, but needs to remain for long-term care, which is covered by Medicaid due to her lack of financial assets. After several more months her dementia and frailty continue to progress, and she stops eating and getting out of bed. In consultation with the nursing home staff and family, the doctor refers her for hospice care.

When an individual gets to the final 6 months of life due to a terminal illness, they are entitled to Hospice Care under Medicare Part A and most other insurances. Hospice is a philosophy of care and a Medicare benefit program, not necessarily a place. It can be provided at home, in a hospital, in a nursing home, or in an inpatient hospice facility if such exists in a given area (in Charleston, WV we are fortunate to have the Hubbard Hospice House). In some states there are multiple competing hospices in every area, but in WV there are exclusive hospices licensed in each region across the state. The diagnosis to qualify for hospice is not only cancer but any terminal illness, including heart or lung disease or Alzheimer's. Once certified by a doctor and hospice agency to be appropriate, extra nursing and supportive care is provided until death, and even post-death grief counseling is provided to the family, a truly wonderful benefit. Both healthcare providers and the general public should be more aware of and accepting of hospice as they face death, as it is a valuable service which people often don't accept and utilize until the very end, for too short a time. The patient's end of life care preferences in West Virginia should be documented on the state-approved "POST" form, Physicians Orders for Scope of Treatment, available from the WV Center for End of Life Care, www.wvendoflife.org. Many other states utilize similar forms under different names such as POLST and MOST. A summary of hospice eligibility guidelines for different diseases is available at http://www.hov.org/hospice-eligibility-guidelines.

In summary, patients needing long term/chronic care have four basic options: 1) care at home, including waiver programs; 2) assisted living; 3) nursing homes; or 4) adult day care/PACE. Patients needing only short term rehabilitative or "post- acute care" have essentially six different options for rehabilitation and therapies depending on their needs and preferences and location: 1) home physical therapy via agency home care, 2) outpatient therapy (available for patients independent at home or in assisted living), 3) acute inpatient rehabilitation facilities (IRF's)/rehab hospitals (e.g. in West Virginia, Peterson Rehab Hospital in Wheeling; CAMC General's Medical Rehab Unit, and four HealthSouth Rehabilitation Hospitals across the state), 4) long-term acute care hospitals (LTAC), 5) skilled nursing facilities, and, 6) for terminally ill patients, hospice is the final option (Kane, 2011). Each has their own criteria and systems for eligibility and reimbursement, as summarized in Table 1. Note that for long-term/chronic ventilator patients, LTAC is the only option in this state, as West Virginia nursing homes do not take ventilator patients. Other states may not have similar restrictions. Note also that acute and long-term care systems for mental illness and for mental retardation have completely different systems of facilities and regulations, and are not discussed in this article, nor are programs for children/non-elderly persons.

Ideally, as a person's needs change, they would move smoothly from one care setting to another as determined by their physicians, nurses, families, therapists, social workers, and other relevant/knowledgeable professionals. However, often both the public and professionals don't really know of or understand what

is available. So, unfortunately people often tend to bounce back and forth from home to hospitals to nursing homes in a haphazard manner based on emergencies and other circumstances. In some areas either state or local departments of aging or private geriatric care managers can help better monitor, plan and supervise safe and appropriate "transitions of care" – an emerging concept which is critically important in avoiding problems such as excessive hospital readmissions.

So while in theory there is a "continuum of care" ranging from outpatient to inpatient to home care to nursing home care to hospice, in reality all these components of the healthcare system tend to operate in their own independent spheres with different regulations and funding streams and too little coordination and communication. In the future it is hoped that electronic health records will follow the patient and communicate from setting to setting, and that different components of the healthcare system will learn to work together more effectively. It all starts with both lay people and professionals understanding the system, communicating and knowing what is actually available in your particular area and for your particular needs.

For more information on available facilities and services for older adults, some sources to consult include the AARP, Alzheimer's Association, federal, state and local government agencies including Medicare.Gov; state and county Aging departments, social workers in the hospital or other facilities, and the WVU Geriatric Education Center website, which posts a list of Caregiver Resources for Elder Care at http://www.wvgec.org/pages/Publications.

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Rural Disparities in Cancer Care: A Review of Its Implications and Possible Interventions

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Abstract

Cancer care has greatly improved in the last few decades, as evidenced by a 22% decline in the overall cancer-related death rate in the United States since 1991. However, the question presents itself whether rural residents, for whom the latest advancements are not as accessible, are also realizing these benefits as much as their urban counterparts. The aim of this study is to provide a review of the literature regarding the disparities in cancer care facing rural Appalachia and specifically West Virginia (WV) as well as possible solutions towards bridging this gap. We find that WV has a higher cancer incidence and mortality rate with fewer oncologists per resident, while rural areas in general have lower clinical trial participation and different treatment regimens. Though programs have been put in place such as mobile mammography clinics and local outreach, more work can be done in WV in the realms of teleoncology, virtual tumor boards, patient support groups, and physician training programs.

Introduction

In West Virginia (WV), the overall cancer-related death rate from 2008-2012 was 191.1 deaths per 100,000 residents, significantly higher than the national average of 166.4 (Table 1).[1] Though trends suggest that overall cancer-related death rates are falling both in WV and nationally, the 12% relative decline noted in WV from 1990 to 2011 lags behind the 22% national average decline, placing it second lowest behind Oklahoma at 9%.[2] This suggests a disparity in cancer care between WV and the nation at-large, which has prompted many studies examining this issue. Furthermore, such disparities have direct implications for WV given that it has the third highest national proportion of the elderly (those 65 years of age or older) at 17.3% of its population, and the elderly tend to have more cancer diagnoses.[3] As the segment of the aging population continues to increase so will the burden of cancer care in WV and the US. In fact, by 2030, total projected cancer incidence is estimated to increase by roughly 45% primarily driven by a 67% increase in cancer diagnoses of the elderly.[4]

Rural Cancer Incidence

Residents of WV from 2008-2012 had age-adjusted all-site cancer incidences of roughly 456.3 new diagnoses per 100,000 residents per year, which is significantly higher than the national rate of 432.3.[1] Cancer sites with significantly higher incidence rates in WV include lung, colorectal, bladder, kidney and renal pelvis, and cervical cancers (interestingly, prostate cancer had a significantly lower incidence rate). A variety of factors that differentiate residents of Appalachia (defined as regions in Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and all of WV) from other Americans likely contribute, including lower income and education levels as well as higher rates of poor health behaviors (ie. tobacco use).[5,6] Even among their Appalachian counterparts, WV residents have a higher incidence of particular cancers, such as cervical cancer.[7] Environmental exposures may play a role in increased cancer incidence in WV, as residents of rural counties with mountaintop coal mining have been found to have increased community cancer risk.[8] However, this merits more robust study given that results of research on this topic are mixed.[9]

Interestingly, when looking at cancer incidence rates at the county level in WV, urban counties constitute the top three spots and rural counties the bottom two (using the Health Resources Service Administration's definition of rural).[10] Hampshire, Cabell, and Wirt counties have the highest incidence rates at 594.8 (95% CI: 553.7 - 638.3), 590.1 (95% CI: 569.9 - 610.9), and 572.1 (95% CI: 493.7 - 660.1) cases per 100,000 residents, whereas Doddridge (336.7; 95% CI: 283.0 - 398.2) and Grant (343.5; 95% CI: 303.3 - 387.9) counties have the lowest.[11]

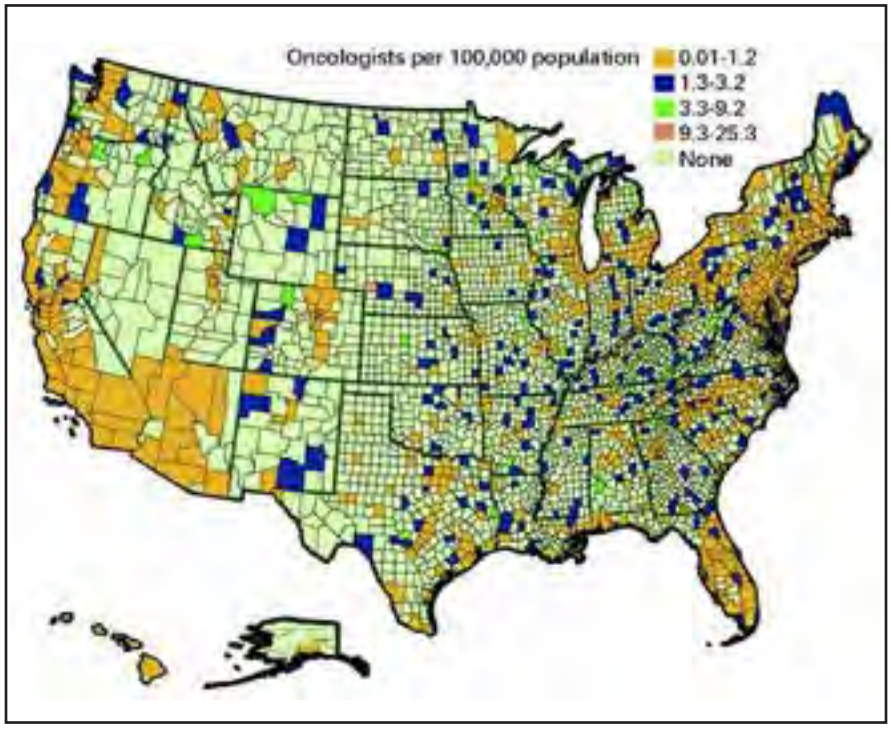
Objectives

1. *To describe the disparities in cancer care in West Virginia*
2. *To recognize possible solutions to cancer care disparities*

Table 1

Rates (per 100,000 residents)	United States of America	West Virginia	WV / National Ratios
All-Site Cancer Incidence Rate	432.3	456.3	1.056 (95% CI: 1.034 - 1.079)
All-Site Cancer Mortality Rate	166.4	191.1	1.149 (95% CI: 1.011 - 1.187)
Lung and Bronchus Cancer Incidence Rate	60.4	77.1	1.278 (95% CI: 1.212 - 1.345)
Lung and Bronchus Cancer Mortality Rate	45.0	59.6	1.324 (95% CI: 1.248 - 1.405)
Breast Cancer Incidence Rate	122.1	115.2	0.944 (95% CI: 0.904 - 0.985)
Breast Cancer Mortality Rate	21.3	22.3	1.047 (95% CI: 0.950 - 1.153)
Prostate Cancer Incidence Rate	105.1	90.4	0.860 (95% CI: 0.820 - 0.902)
Prostate Cancer Mortality Rate	19.6	16.0	0.807 (95% CI: 0.720 - 0.904)
Colorectal Cancer Incidence Rate	38.9	44.3	1.137 (95% CI: 1.062 - 1.219)
Colorectal Cancer Mortality Rate	14.7	17.2	1.171 (95% CI: 1.049 - 1.308)
Bladder Cancer Incidence Rate	20.2	24.5	1.213 (95% CI: 1.106 - 1.330)
Bladder Cancer Mortality Rate	4.4	4.5	1.018 (95% CI: 0.821- 1.263)
Kidney and Renal Pelvis Cancer Incidence Rate	15.8	18.7	1.182 (95% CI: 1.063 - 1.313)
Kidney and Renal Pelvis Cancer Mortality Rate	3.8	3.5	0.923 (95% CI: 0.724 - 1.178)
Cervical Cancer Incidence Rate	7.4	9.6	1.298 (95% CI: 1.120 - 1.505)
Cervical Cancer Mortality Rate	2.3	3.4	1.478 (95% CI: 1.154 - 1.895)

Figure 1



Further research is needed to investigate the factors such as greater amounts of air pollution that might account for higher cancer incidence in urban counties.

Physician Supply and Mortality

Also of relevance to treatment of cancer is the supply and training of physicians. At the moment, 10% of physicians practice in rural areas, and only 4.8% of newly trained physicians are choosing to practice in such areas.[12] In WV, there are currently 76 oncologists, which for a population of roughly 1.85 million translates to an oncologist density of 4.1 specialists per 100,000 residents.[13] This falls on the lower end of the rest of the country, and of particular note is the scarcity of cancer specialists in many counties throughout the state (Figure 1, Kirkwood et al.).[14]

The importance of physician supply at the county-level to cancer survival is well supported in the literature. Aneja et al. has found that the presence of one radiation oncologist in a county results in a nearly 5% decline in prostate-cancer related deaths,[15] and even more robust mortality reductions have been noted for esophageal (22-79%) pancreatic (27-51%), and colorectal (12-47%) cancers.[16,17,18] The presence of one urologist in a county also may lead to a roughly 20% reduction in prostate and bladder cancer-related

deaths.[19] Similar trends exist for other cancers; for example, rural county residence is associated with a 5% increase in sarcoma-related mortality.[20] Likewise, residents who lived more than 50 miles away from a gynecologic oncologist had a nearly 60% higher risk of ovarian cancer mortality.[21]

Thus, the establishment of training programs in medical oncology and radiation oncology is key to ensuring that an adequate cancer workforce is available. Both West Virginia University and Marshall University Schools of Medicine currently have medical oncology fellowships, though neither at the moment has residency programs in radiation oncology.[22,23]

WV has significantly higher mortality rates for all-sites, as well as lung and bronchus, colorectal, and cervical cancers. When further examining the data by country, from 2008-2012, the top four counties with the highest cancer-related mortality rates per 100,000 residents were Webster (248.3; 95% CI: 209.8-292.4; urban), Wyoming (240.5; 95% CI: 215.5-268.4; rural), Lincoln (240.5; 95% CI: 214.0-269.6; urban), and Mingo (240.4; 95% CI: 216.0-266.9; rural) counties. Those with the lowest mortality-rates were Hardy (151.4; 95% CI: 126.7-179.9), Grant (129.7; 95% CI: 105.6-158.2), and Pendleton (127.9; 95% CI: 101.0-161.1) counties, all of which are rural.[2] Given that two of the top four are urban counties, this suggests that physician supply/proximity may be only one of a variety of factors that account for the higher mortality rates observed in WV. Even so, the effect of access to oncologists and radiation oncologists on cancer death rates has been supported by many studies in the literature.

Prevention and Treatment of Cancer in Rural America

The incidence of cancer is generally higher in Appalachia.[24] Additionally, mortality to incidence ratios are higher, specifically for breast, cervical, and prostate cancers, which some attribute to a lack of federally qualified health centers that provide cancer screening.[25] Lower rates of screening in rural areas are documented in the literature. For example, in Kentucky, residents of Appalachian counties were half as likely to have a colonoscopy or sigmoidoscopy performed within the past 10 years as their non-Appalachian counterparts.[26] As many screenings, such as colonoscopies, often are dependent upon physician recommendation, it is likely that factors such as lack of access to primary care contribute to these findings. This has implications for delayed presentation and initial staging of cancer. For example, white and African-American women residing in rural Mississippi were 4% and 19% more likely, respectively, to be diagnosed with advanced regional/distant breast cancer than their urban counterparts.[27] Similarly, late-stage diagnosis of melanomas is associated with areas of lower median education levels, as is the case in rural counties.[28]

Many studies have also focused on differences in breast cancer treatment in rural areas and implications for survival. Freeman et al. showed that following surgery, early-stage breast cancer patients in Appalachian counties of Kentucky are less likely to receive adjuvant radiation therapy,[29] which is associated with a 12.1% decline in 10 year survival.[30] This has been confirmed by other studies and is attributed to a paucity of radiation oncologists as well as radiation therapy facilities.[31] Additionally, patients in rural areas may be less likely to receive adjuvant chemotherapy. In a study of breast cancer patients in Wisconsin having similar likelihoods of recurrence, Andreason et al. revealed only 36% of rural patients underwent adjuvant chemotherapy compared to 52% of those in urban areas.[32] All of these factors likely contribute to changes in breast cancer mortality in rural areas. Though the number of breast cancer-related deaths in Appalachia have declined by 17.5% from 1969-2007, this reduction is not as robust as that observed in non-Appalachian counties (28.3%).[33]

Variations in treatment regimens for rural patients also exist for other cancers. Notably, retrospective studies have found that only 46.5% of elderly lung cancer patients in rural and medically-underserved areas of WV received guideline-concordant care, which was associated with a nearly one year decline in survival outcomes.[34] Baldwin et al. observed that rural cases of early-stage prostate cancers are 3.4% less likely to receive standard treatment regimens.[35] Similarly, rural patients with stage III colon cancer who had to travel 50 miles or greater were less likely to receive adjuvant treatment than those closer to treatment sites.[36]

Clinical Trials in Appalachia

Also of importance is whether rural patients are given the opportunity to participate in clinical trials, which may provide novel treatment strategies for cancer sites with poorer prognoses such as brain neoplasms and other cancers that have progressed on standard therapy. Prior studies have demonstrated that areas with higher socioeconomic levels, approved cancer programs, and greater oncologist density (all of which are significantly lower in rural Appalachia) are associated with increased clinical trial participation.[37] Furthermore, research shows that rural residents are much less likely to be recruited for such trials.[38]

There are barriers to involving rural participants in clinical trials. A survey of principal investigators'(PIs) attitudes at 5 academic centers in South Carolina found that PIs perceive rural residents as being the most difficult to recruit.

Reaching out through local doctors for participants was not common, and it was very uncommon to look for other means (ie. faith-based organizations, television, radio, etc.) of participant recruitment.[39] Furthermore, PIs perceive rural residents as having less knowledge and understanding of clinical trials.[40] From the perspective of patients, residents of rural areas often believe that clinical trials are deceptive in nature, lack general knowledge regarding the purpose of clinical trials, and are often dissuaded by complicated informed consent forms. These barriers make rural residents less likely to participate in clinical trials relative to urban residents.[41,42]

Review of Attempted Solutions

Telemedicine, or the use of telecommunication to provide medical care from a distance, may have a role in improving cancer care in rural areas. Perhaps the most prominent example of teleoncology in the US is the University of Kansas Medical Center's (UKMC), which reported successful implementation of remote supervision of chemotherapy.[43] Patients come to a local health site where a nurse follows directions for the physical exam from the oncologist communicating via video. Relevant information, such as labwork, radiographs, etc., is then faxed to the corresponding oncologist for continuous review and monitoring. To provide incentives for chemotherapy administration, this system had local sites collect revenues. Costs in this model decreased with time and steadily approached those of traditional encounters. Patient satisfaction from other models of telemedicine was positive overall following treatment.[44,45] Roughly half of patients in the UKMC study had some concerns regarding nurses rather than physicians performing certain aspects of the physical exam, though all patients surveyed expressed satisfaction with the model overall. Telemedicine may also be particularly helpful for post-treatment follow-ups. For example, a study done in British Columbia, Canada, found that a telemedicine program for colorectal cancer patients with geographic barriers led to a rise in the number of follow-ups with 80% of patients satisfied with the program.[46]

Of concern with telemedicine is the safety of remotely monitoring chemotherapy. Pathmanathan et al. compared the incidence of adverse effects (ie. febrile neutropenia, diarrhea, vomiting) between rural and urban patients in Australia with either metastatic colorectal or node-positive breast cancers undergoing chemotherapy treatment over a 24 month period, and no significant difference in the occurrence of any side effects was noted.[47] Similarly, ambulatory cancer patients in Singapore were monitored via a pharmacist-run teleoncology service, which utilized a short-message-service algorithm to guide patients thru a decision-making process to provide information should a

pharmacist not be available to talk. This trial had 73% adherence, and of those who completed the service, nearly 2/3 of patients were satisfied.[48] These results support the feasibility and safety of chemotherapy administration and monitoring via telemedicine.

Unlike chemotherapy, radiation therapy is more difficult to provide remotely given high financial barriers to obtaining the necessary equipment. As such, rural patients travel to large referral centers to receive radiation, though telemedicine may be of use in reducing trips for treatment planning and simpler protocols (ie. external beam radiation as opposed to brachytherapy, which requires more active surveillance). In Japan, one study was able to accurately transmit radiotherapy plans from a workstation at a cancer center to an affiliated hospital 50 km away to allow for editing of beam data remotely.[49] Prior studies conducted in Japan also demonstrated accurate reproducibility of planned isocenters (the point at which beams of radiation converge) for 3D-conventional radiotherapy.[50] Similar successful attempts at a teleradiotherapy network were reported in Germany for treatment of Hodgkin's lymphoma by means of high-quality transfer of imaging data and real-time teleconferences.[51]

Unique to cancer care, particularly for more difficult and rare cases, are tumor boards. Thus, telemedicine's application led to the advent of virtual tumor boards (VTBs) to allow local providers the opportunity to consult with specialists. As an example, the University of North Carolina (UNC) offered this option to community physicians. Ninety-one percent of participating UNC oncologists felt that the presenting physician's questions were addressed and that the information provided was adequate for discussion, and 19% felt that VTBs were less likely to lead to a consensus on treatment. Furthermore, only 9% experienced some sort of technology glitch during meetings. VTBs seem to be a viable and satisfactory option, though noted barriers include a lack of time for such meetings.[52] Other VTB initiatives by Baylor and in the UK have been implemented with high physician satisfaction.[53,54] VTBs have been noted to increase the likelihood that cases from community centers are discussed at tumor boards, expedite the process of interdisciplinary discussion, and reduce travel burden for rural providers.[55]

Telemedicine also has the potential to improve management of cancer-associated mental health issues. In rural areas, patients do not have access to support groups or counselors. A virtual connection of patients facing similar circumstances to address associated symptoms such as depression and pain could be helpful. As an example, a Stanford study found that breast cancer patients in rural areas showed significant decreases in both depression as well as post-traumatic stress disorder (PTSD) symptoms after participating in a videoconference support group.[56] The Indiana Cancer Pain and Depression Trial (INCPAD) noted similar results as patients who received telecare management via telephone and automated symptom monitoring had declines in depression and pain scores.[57]

Other initiatives aim at educating providers and patients about cancer care through developing networks between community stakeholders and cancer providers. Of most relevance to WV is the Appalachian Community Cancer Network (ACCN), a National Cancer Institute-designated Community Network Program with partners in Kentucky, Ohio, Pennsylvania, Virginia, and WV. In WV, the ACCN has worked closely with the Webster County Cancer Education Project to provide breast and cervical cancer screening as well as the Wetzel County Cancer Coalition to assist patients with transportation for treatment.[58] The network also provides guidance, support, and mini-grants to organizations facing difficulty in implementing educational interventions.[59] WVU also has a mobile mammography clinic, which in 2009 was able to provide 360 mammograms in 20 counties across the state, with roughly 50% of women from underserved backgrounds, and by 2015 had provided services to nearly 8,700 women.[60,61] A statewide network has also been established to involve more WV residents in clinical trials.[62]

Outside of WV, there are other successful rural outreach and educational programs. Physician awareness programs in Arkansas have led to significant increases in screening recommendations for prostate, breast, and colorectal cancers.[63,64] Similarly, in Mississippi, an educational outreach program had 883 community volunteers complete 16 hours of training in cancer awareness and the importance of clinical trials. The volunteers also attended monthly continuing education meetings to disseminate information in their respective communities regarding screenings provided by the state's Department of Health. Following the program, pap smears increased 23% and mammograms increased 117%.[65]

Conclusion

Disparities in rural Appalachia with regards to cancer incidence, mortality, and treatment are well documented. To address the lack of specialists practicing in rural WV, a variety of education and screening outreach programs have been implemented and met with success. However, other possible solutions, notably telemedicine, virtual tumor boards, patient support programs, and physician training programs in radiation oncology have yet to be implemented or documented in WV. Success with

these initiatives in areas facing similar challenges suggests more work can be done to bridge the gap in cancer care for West Virginians.

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CME Post-Test

18. The all-site cancer mortality rate per 100,000 residents in WV is significantly higher than the national average. a. True b. False

19. Monitoring of chemotherapy via telemedicine has proven to be as safe as traditional encounters in studies done thus far. a. True b. False

20. The oncologist density in WV is roughly 10 per 100,000 residents. a. True b. False

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Improving Rural Bone Health and Minimizing Fracture Risk in West Virginia: Validation of the World Health Organization FRAX® Assessment Tool as a Phone Survey for Osteoporosis Detection

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Abstract

West Virginia ranks second nationally in population ≥ 65 years old placing our state at greater risk for osteoporosis and fracture. The gold standard for detecting osteoporosis is dual X-ray absorptiometry (DXA), yet over half of West Virginia's counties do not have this machine. Due to access barriers, a validated phone-administered fracture prediction tool would be beneficial for osteoporosis screening.

The World Health Organization's FRAX® fracture prediction tool was administered as a phone survey to 45 patients; these results were compared to DXA bone mineral density determination.

Results confirmed that the FRAX® phone survey is as reliable as DXA in detecting osteoporosis or clinically significant osteopenia: 92% positive predictive value, 100% negative predictive value, 100% sensitivity and 91% specificity when compared to the gold standard. These promising results allow for the development of telephone-based protocols to improve osteoporosis detection, referral and treatment especially in areas with health care access barriers.

Introduction

Osteoporosis detection in West Virginia is limited by resources and our rural population. West Virginia is the second most rural state in the nation with over 67% of our population living in towns of less than 2500 people and 50 of our 55 counties federally designated, either in part or full, as Health Professional Shortage Areas or Medically Underserved areas.[1-3] Additionally, 16.5% of our population is 65 years of age or older (second in the nation).[4,5] This large cohort means that the risk of osteoporosis and osteoporosis-related fracture, two age-related conditions, is increased for West Virginia.[6] It is surprising to note that over a quarter of a million (77%) of West Virginia's female residents over 50 years of age have osteoporosis or diminished bone mass.[7] Nationally, osteoporosis remains a public health threat to almost 55% of the people aged 50 years and older.[8] The National Osteoporosis Foundation (NOF) estimates that in the United States, 10 million people already have the disease, while 34 million more are estimated to have low bone mass, increasing their risk of fracture.[8] In addition to the personal and local burden of osteoporosis, there is also a national burden in terms of healthcare dollars. Currently, total costs in the United States are more than $19 billion dollars and this number is expected to rise by almost 50% by 2025. These frightening statistics argue for a low cost, widely applicable method of screening large populations in rural areas where the availability of sophisticated diagnostic tools such as the dual-energy x-ray absorptiometry (DXA) scanner is limited.

A DXA scan is considered the gold standard to assess bone mineral density (BMD) and detect osteoporosis.[9] By calculating BMD, physicians are able to evaluate for osteoporosis, to assess for risk of fracture, and to monitor response to treatment. However, in West Virginia,

Objectives

1. *To raise awareness about the burden of osteoporosis among elder West Virginians.*
2. *To examine the validation of the phone based administration of FRAX as an effective, alternative tool for osteoporosis screening.*
3. *To consider incorporation of FRAX as an alternative to formal DXA bone mineral density determination to predict those at greatest risk for fracture facilitating appropriate osteoporosis detection and management in rural populations.*

Figure 1: ***Map of West Virginia's 55 counties with highlighted counties indicating the presence of a free standing DXA unit. 7***

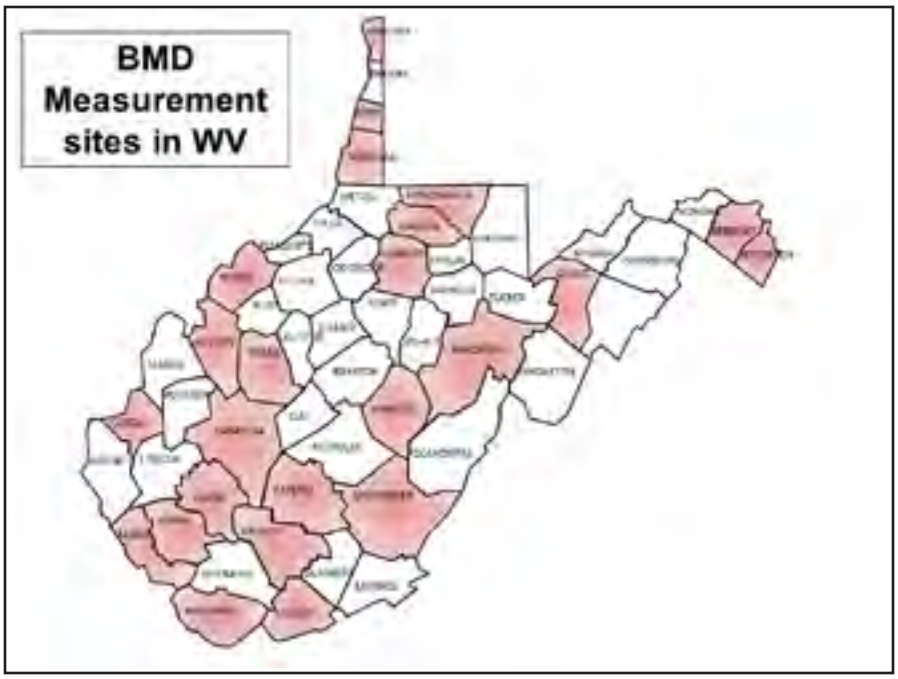

Figure 2: ***The World Health Organization (WHO) fracture prediction tool (FRAX®).[13] Adapted with permission from International Osteoporosis Foundation, Fracture Risk Assessment Tool Educational Slide-kit. Available at http://www.iofbonehealth.org/health-professionals/frax.html.***

access to DXA scanners is limited, with the most recent data suggesting only 24 of 55 counties having a free standing DXA unit (Figure 1).[10] In addition to limited access, distance is a factor that negatively impacts the delivery of rural healthcare.[11] A 20% drop in osteoporosis screening rates occurs when a DXA is located over 5 miles from a patient.[12] This combination of a rural and aging population places West Virginia at the forefront of an "osteoporosis epidemic" and effective strategies need to be developed to better serve the needs of this population. This is where FRAX could play a role in improving access and detection of osteoporosis.

The World Health Organization (WHO) has a validated, internationally accepted fracture prediction tool -- FRAX®-- which is used to detect individuals at risk for fracture. Independent risk factors of the patient are incorporated into the FRAX® algorithm and consist of: country of origin, age, gender, weight, height, previous fracture, parental history of hip fracture, current smoking, use of glucocorticoids, rheumatoid arthritis, secondary osteoporosis, alcohol consumption (3 or more units/day) and, when available, BMD at the femoral neck (g/cm2) obtained by DXA (Figure 2).[13] The algorithm corrects for the different contributions of each independent risk factor to yield the ten year probability of sustaining either a hip fracture or other major osteoporotic fracture.[13] When the absolute risk of sustaining a hip fracture within the next ten years is 3% or above, or the risk of major orthopaedic fracture is 20% or above, treatment is considered cost effective and has been shown to decrease the rate of subsequent fractures.[14-21] Because this tool can be used without BMD data, we hypothesized that FRAX could be used as a phone screening tool and would correlate very well with osteoporosis detection using the gold standard of BMD using DXA.

Methods

This study was IRB approved (#396973) and involved four steps: (1) identification of a pool of rural patients "at risk" for fracture; (2) randomly contacting patients to see if they would like to participate in the research protocol; (3) obtaining FRAX and DXA information for each patient enrolled; and (4) communicating these results to the patient and primary care provider (PCP).

Identification of Patients

We determined the variables used to screen "at risk" populations in Marshall Health's Allscripts EMR by consulting an expert in the field of osteoporosis detection and screening -- Dr. Richard Dell of Kaiser Permanente. Dr. Dell was contacted because he uses an EMR to automatically identify patients for bone health screenings in their 11-hospital system. Patients were screened for inclusion by using the population health management tool within Allscripts. There were 6 inclusion criteria and 1 exclusion criteria. Inclusion criteria included (1) all women 65+ years old; (2) all men 70+ years old; (3) all patients over 50 years of age with a fracture of the proximal humerus, distal radius, hip or vertebral compression fracture; (4) patients on 3+ months of steroids; (5) patients on Lupron; and (6) including only patients that live within rural and urban designations (RUCA's) consistent with rural (requirement of the funding mechanism). Exclusion criteria included patients already completing a DXA scan within the past two years. A total of 572 potential study patients were identified. From this list, we excluded patients not living within a rural RUCA zip code designation.

Contact for Study Participation

From the list of potential study patients living in rural RUCA's, two of the authors (FS, KS) randomly contacted the patient by phone to see if they would like to participate in the research protocol. A standardized phone discussion was generated indicating that we were contacting the patient from the Department of Orthopaedic Surgery at Marshall University and conducting a research study on weak bones (osteoporosis) and this study would include a brief 2-3 minute phone conversation and by participation a free DXA scan would be arranged at our testing facility. Response was impressive with the first 57 phone calls producing 55 people willing to participate. Consultation with a statistician was completed as part of the granting mechanism and sample size needed was determined to be n=45.

FRAX and DXA Completion

Fifty-five study patients completed FRAX with the phone survey taking an average of two minutes. The 10-year absolute risk of fracture for the patient was then generated and recorded and the patient was immediately notified of their fracture risk. This information was printed and mailed to the patient along with a voucher for a free DXA scan at the Erma Byrd Clinical Center on a set date in June or August 2013. The free voucher was developed in conjunction with the Senior Services Division and Cabell Huntington Hospital Radiology with the study protocol paying for the DXA scans with no charges to the study patients. A total of 45 patients were able to complete the DXA scans. Those unable to complete the scans on the study dates were contacted by the research team nurse (LM) and alternative arrangements were made including a letter sent to their PCP containing their FRAX data.

Communication of Results

All patients received their FRAX test results including a professional interpretation of the DXA scan (n=45) by an International Society for Clinical Densitometry (ISCD) certified endocrinologist (OO). These results were sent by mail to the patient and also forwarded to the participant's PCP. The research study nurse's (LM) phone number was provided to the study participants and she assisted with any questions or interpretations of the results including coordination of follow up if needed. A three month follow up phone call was completed on all patients (LM).

Results

The total number of patients completing the study protocol was 45 (June 19, 2013- August 27, 2013). There were 6 males and 39 females. The age range was 52-81 years of age with a mean age of 65.8 years. Results of the FRAX phone-screening tool and DXA scan were analyzed by two authors (TWB, FS). When the absolute risk of sustaining a hip fracture in a study participant within the next ten years was 3% or above, or the risk of major osteoporosis fracture was 20% or above, the FRAX screening was considered positive for osteoporosis/clinically significant osteopenia and treatment was recommended.[14-21] FRAX results demonstrated 25 patients requiring pharmacological management (presence of osteoporosis/ clinically significant osteopenia). Of note, the FRAX scores were re-calculated for all participants using the empirically determined height and weight data obtained during DXA scanning. These "corrected" scores were used in the final data analysis. For the DXA results, 23 patients were recommended to receive pharmacological management (Table 1).

Forty-three of 45 patients had the CORRECT diagnosis of either presence or absence of fracture risk threshold requiring treatment with **100% sensitivity, 91% specificity; 92% positive predictive value**

Table 1: Results of DXA Scan versus FRAX Predicted Risk of Fracture

		DXA Scan Results	
		Positive	Negative
FRAX Predicted Risk of Fracture	Positive	23	2
	Negative	0	20

and 100% negative predictive value (Table 1). In two patients FRAX over-predicted the need for pharmacological management. In both patients the recommendation for pharmacological management was reversed if FRAX was recalculated using the BMD of the femoral neck empirically determined with DXA. For these two patients additional information is presented.

The first patient was a 77-year-old female with only one FRAX parameter above threshold -- 3.6% risk for femoral neck fracture (above the treatment threshold of 3%). Using the BMD data this risk was reduced to 2.1% and was consistent with the formal DXA reading of no recommendation for pharmacological management. The second patient was a 64-year-old female with two FRAX parameters above threshold – 4% risk for femoral neck fracture and 21% risk of major osteoporotic fracture (above the treatment threshold of 20%). Using the BMD data these risks were reduced to 2.3% and 16%, both below thresholds for pharmacological management and consistent with the formal DXA reading.

Previously, treatment decisions for osteoporosis management were based solely on BMD testing and T-score generation with previous publications highlighting that identical T-scores can produce vastly different fracture risks.[22-24] In this study cohort, only 10 patients had a T-score of -2.5 or lower. In the 23 patients with final recommendation for pharmacological management for osteoporosis/clinically significant osteopenia, only 39% (9/23) had a T-score of -2.5 or lower.

It is worth noting that the three-month follow-up on all patients resulted in 100% returning for further osteoporosis evaluation and management with their PCP (n=45).

Discussion

In this study, FRAX has been used and validated as an effective phone-screening tool to determine "at risk" populations for osteoporosis/clinically significant osteopenia. There was a 4.4% risk (2/45) of over-prediction of fracture risk above pharmacological treatment thresholds using FRAX algorithms calculated without BMD data. This risk was reduced to 0% when FRAX was recalculated using BMD data obtained from DXA. It is clear from a recent review that FRAX is useful for prediction of pharmacological interventions where facilities for BMD determination are sparse like in West Virginia; but BMD should be used in calculations on "those close to a probability-based intervention threshold".[25] In the two patients where FRAX over-prediction occurred, both were within 1% of the threshold value for treatment and in each, DXA was performed, which changed the recommendations for pharmacological management. It is worth noting that osteoporosis is a skeletal disorder characterized by low bone strength and increased risk of fracture; therefore, treatment decisions should not be based on T-score alone. [22] In this study cohort, the majority (61%) of the study patients receiving a recommendation for pharmacological management

for osteoporosis/clinically significant osteopenia actually had T-scores above -2.5 (14/23).

In summary, detection of patients at greatest risk for fracture is facilitated by the FRAX tool and can be easily accomplished by a phone call with nearly equivalent results to that of the gold standard DXA scan. In a state with limited resources and multiple barriers to health care access, incorporation of a simple phone screening tool will help to improve osteoporosis screening, detection and treatment which has been shown to reduce fracture incidence and the fiscal burden associated with fracture care.[14-21,26,27]

Acknowledgements

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CME Post-Test

21. According to the WV Osteoporosis and Arthritis Program, how many WV counties have DXA scanners?
    a. 55 counties
    b. 40 counties
    c. 24 counties
22. The FRAX fracture prediction tool provides an absolute 10-year risk of hip or major osteoporotic fracture. Can this tool be used without having BMD of the femoral neck?
    a. Yes
    b. No
23. Current recommendation for treatment of osteoporosis and clinically significant osteopenia are based on the risk of fracture. Which strategy below would provide the most utility at determination of those greatest at risk for fracture?
    a. T score alone
    b. Z score alone
    c. Physical examination
    d. FRAX score (>3% for hip frature and >10% risk for major osteoporosis fracture)
    e. FRAX score (>3% for hip fracture and >20% for major osteoporosis fracture)

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The Impact of Alzheimer's Disease in an Aging Rural Population

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Abstract

West Virginia already has a large elderly population, and it is expected to increase along with the elderly population of the nation as a whole. Since the most important risk factor for Alzheimer's disease is older age, it is not surprising that the prevalence of Alzheimer's disease is projected to increase significantly over the next thirty-five years. This paper discusses the prevalence of Alzheimer's disease in West Virginia, programs available to assist people and caregivers affected by the disease, and the associated economic burden of the disease.

Introduction

Baby Boomers are reaching retirement age, leading to expansion in the senior citizen population. As the United States population ages, the prevalence of Alzheimer's disease is projected to increase significantly as increasing age is the most common risk factor for the disease. In the 2010 census, West Virginia (WV) was noted to be the second oldest state in the country with 17.8% of its population over age 65.[1] For this reason, it is especially imperative for the state of West Virginia to address the problem of caring for potentially large numbers of Alzheimer's patients. Eventually, no state will be left unscathed by the economic and social burden of caring for and treating Alzheimer's patients.

Prevalence in WV

Currently, there are 5.3 million Americans diagnosed with Alzheimer's disease and 5.1 million of those people are age 65 years old or older.[2] Two-thirds of those affected by the disease are female, possibly due to the fact that women have a longer life-expectancy. It is estimated that by 2050 there will be 13.8 million people diagnosed with Alzheimer's disease.[2] In people over age 65 years, Alzheimer's disease is the fifth leading cause of death, with only heart disease, cancer, COPD, and stroke being greater.[3] It is the 6th leading cause of death when taking into account people of all ages with accidents additionally being more common.[3] Most importantly, there is no cure for the disease.[4] Alzheimer's disease, the most common form of dementia in the country, can significantly affect a person's ability to carry out activities of daily living, thus putting a strain on resources required to assist people living with the illness.[4]

There are currently 36,000 people over age 65 living in WV with Alzheimer's disease. Twelve percent of WV citizens that are 65 or older have been diagnosed with Alzheimer's disease.[5] The Alzheimer's Association anticipates a 22.2% increase in the number of West Virginians diagnosed with Alzheimer's disease by 2025.[5]

Programs Available in WV

In order to serve the future needs of people with Alzheimer's disease and their caregivers, additional programs will need to be implemented and resources provided. In 2014 it was estimated that 15.7 million family members and friends provided the care for patients with Alzheimer's disease.[2] These caregivers are at greater risk for anxiety, depression, stress, fatigue and irritation.[6,7] Education and support are valuable to caregivers and relieve some of the adverse effects of day-to-day life with an Alzheimer's patient.[8]

With a new diagnosis of Alzheimer's disease, the patient and caregiver could first look to the Alzheimer's Association by visiting their website www.alz.org or calling their helpline (1-800-272-3900) which is available twenty-four hours a day, seven days a week. This organization provides information about the disease in the form of text, video, and seminars for both the patient and the caregiver.[9] A calendar of the

Objectives

After reading this manuscript the reader will be able to:

- *State the prevalence of Alzheimer's disease in West Virginia.*
- *Name local resources and support groups for patients with Alzheimer's disease and their caregivers.*
- *Recall the economic cost of Alzheimer's disease both locally and nationally.*

various support groups held in WV by the Alzheimer's Association can also be found on their website.[10]

Another non-profit organization that provides information and counseling to Alzheimer's patients and their caregivers is the Alzheimer's Foundation of America (AFA). Their website is www.alzfdn.org and their free helpline can be reached at (1-866-232-2484).[11] The AFA offers a free monthly teleconference given by experts in the field for family and professional caregivers of Alzheimer's patients.[12] The National Institutes of Health has resources for providers to use in the diagnosis, treatment, and management of the Alzheimer's patient, as well as training curricula, clinical trial information, and printable resources that clinicians can provide their patients and caregivers (available at www.nia.nih.gov/alzheimers/publication).[13]

For patients living in rural WV, the Savvy Caregiver Program may be the best way to obtain information and caregiving skills. The Savvy Caregiver Program consists of a six section course that can be completed at the user's own pace along with "Alzheimer Caregiving Strategies" in the form of a CD-ROM or video.[7,14] Hepburn et al evaluated the usefulness of this program by providing a survey to 102 participants at baseline and follow-up (52 of which completed both the baseline and follow-up survey). Their research showed improved competence, mastery, sense of self, and global measure of distress in the caregivers who used the program.[14] Another study in rural Colorado showed the levels of depression were more greatly decreased in caregivers of rural areas over urban areas.[7]

Caregivers who use respite care find it to be an invaluable service, but there is little evidence that shows it improves their mental health. Nevertheless, respite care could still be recommended by physicians managing the health of the caregiver.[14] The Lighthouse program and Family Alzheimer's In-Home Respite (FAIR) are two programs that offer respite care to WV residents for a fee based on the patient's income.[15,16] The Lighthouse program is available to patients aged 60 years and older who meet the functional qualifications after evaluation by a registered nurse. The program offers assistance in personal care, mobility, nutrition, and household care.[15] FAIR is available for unpaid caregivers of WV Alzheimer's patients. The FAIR program provides trained workers to give caregivers a much needed break while providing companionship to the patient.[16] A similar program that is available through the Veterans Affairs Medical

Center (VAMC) provides support to eligible caregivers of veterans including home assistance and other services. This program can be reached through the VAMC's Caregiver Support Line at 1-855-260-3274.[17] Hospice has also extended its services to include respite and palliative care either in the home or in a hospice facility.

Two other popular resources are the Medicaid Aged and Disabled Waiver (ADW) Program and the Legislative Initiative for the Elderly (LIFE) Program.[18,19] The ADW Program provides in-home and community services including long-term direct care and support services. It enables an individual to stay at home rather than enter a long-term care facility. Applicants must be medically and financially eligible based on an assessment by a medical professional and the county Department of HHR in order to participate in the program.[18] The LIFE Program is available for West Virginia residents ages 60 and older.[19] It is a source of funding to senior centers in each county of WV to provide services such as home delivered meals, transportation assistance, heavy cleaning, yard maintenance, managing medications, caregiver support, and many others depending on the county of residence. In order to apply for eligibility or get county specific information, patients should contact their local senior center or visit www.wvseniorservices.gov.[19]

Economic Impact

Alzheimer's disease is one of the most costly chronic diseases.[2] In total cost to society, Alzheimer's disease is the third most costly disease in the United States—only after cancer and heart disease.[20] Since Alzheimer's disease affects the elderly, there are usually many coexisting conditions that can also influence the cost of care.[21] Moreover, hospital stays for patients with dementia cost 3.2 times more compared to patients without dementia.[22] In 2015, the direct cost of caring for those with Alzheimer's disease in America was approximately $226 billion --with half of those costs borne by Medicare.[2] The average per-person Medicare spending for seniors (65 and older) with Alzheimer's disease and other dementias is three times higher than for seniors without dementia. Medicaid payments are nineteen times higher for seniors with Alzheimer's disease or other dementias compared to seniors without dementia.[2] Nearly 1 in 5 Medicare dollars is spent on people with Alzheimer's disease and other dementias, and in 2050 it is estimated to increase to 1 out of every 3 Medicare dollars spent.[2]

Although delay in disease progression through early diagnosis and intervention would reduce costs, no treatments or programs to date are known to significantly alter the course of dementia.[22] Medications currently available for use in Alzheimer's disease aim to control symptoms rather than prevent or reverse damage that occurs to the brain. There are 5 drugs approved by the FDA to treat the cognitive symptoms of Alzheimer's disease. Three are acetylcholinesterase inhibitors (donepezil, galantamine, and rivastigmine), one is an N-methyl D-aspartate (NMDA) receptor antagonist (memantine), and one is a combination of the two (donepezil and memantine).[23] These medications attempt to improve the symptoms associated with memory loss and can be found on Medicare's approved drugs list, however although clinical trials show improvement in cognitive test scores, the functional benefit is minimal and the cost of these drugs are high (ex. donepezil 10mg $215/month and Namenda XR 28mg $357/month from www.goodrx.com).[24] Studies on monoclonal antibodies (aducanumab and solanezumab) are in clinical trials and may show promising results for future treatment of Alzheimer's disease.[25,26] These drugs aim to treat the cause (specifically beta-amyloid plaques) and not just the symptoms of the disease, but they are likely to be very expensive as are most monoclonal antibody drugs used for other diseases.

One of the costs attributable to dementia is that of institutional and home-based long-term care.[21] Any intervention that improves the patient's functioning so that care may be given at home or in an assisted-living facility as opposed to a nursing home could lead to a substantial cost savings.[27] The cost of care for someone with Alzheimer's disease increases substantially when the caregiver is no longer able to care for their family member at home. Informal caregiving, which is unpaid and usually provided by a spouse or adult child, accounts for roughly 60% of all care provided to patients with Alzheimer's disease.[27] In 2014, the number of caregivers of people with Alzheimer's disease in WV was 108,000. The total amount of hours of unpaid care in 2014 was estimated at 123 million hours with a value of $1.499 billion.[5] Additionally, the healthcare costs for caregivers are often higher than other people of the same age and estimated to be $75 million in WV alone.[5]

Conclusion

Above we reviewed some programs in WV to help link caregivers with services, financial aid, and local support. Caregiver support could be cost-effective by helping improve the health of caregivers, and allowing more people with dementia to remain at home. Alzheimer's disease is an issue of local and national importance. The prevalence of this disease will only increase in the future, pending curative treatment. Until that time, it is important for physicians to be prepared to aid in the education, treatment, and support of patients with Alzheimer's disease and their families.

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CME Post-Test

24. In 2010, what percentage of WV's population was 65 and older?
    a. 16 %
    b. 37 %
    c. 42 %
    d. 50 %

25. What program(s), specific to WV, help(s) people diagnosed with Alzheimer's disease, other related dementias, and their caregivers?
    a. FAIR
    b. Alzheimer's Assist
    c. Lighthouse
    d. Both A and B
    e. Both A and C

26. Delaying a patient's admittance to a full-time facility by supporting caregivers can reduce the overall cost of care for a patient.
    a. True b. False

Major Trauma and the Elder West Virginian: A Six Year Review at a Level I Trauma Center

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Abstract

Background: Trauma was the seventh leading cause of death for persons 65 and older in West Virginia (WV) in 2010. In 2007, fatality rates for both accidental falls and motor vehicle crashes were higher in West Virginia than the nation as a whole. US Census Data from 2010 showed WV to have one of the oldest median ages in the nation (surpassed by Maine and Vermont) and currently 16% of the population of WV is over 65 years of age.

Methods: This is a retrospective observational study of data extracted from the John Michael Moore Trauma Center (JMMTC) trauma registry for the time period of January 1, 2009 to December 31, 2014.

Results: There were 3,895 patients, aged 65 years or older, treated at the Jon Michael Moore Trauma Center in Morgantown, WV during the study time period. Accidents accounted for 98.6% of the injuries. The elderly were most commonly injured in their place of residence (59.8%). The top two mechanisms of injury were falls (75.2%) and motor vehicular crashes (13.9%). Frequently, disposition from the Emergency Department was to a higher level of care: Intensive Care Unit (32.3%) and Step-down Unit (21.2%). The most common serious injuries were intracranial hemorrhage (40.0%), lower extremity fractures (38.1%), and spine fracture (26.0%). The average hospital stay was 5.6 days and the average ICU stay was 3.2 days. Hospital discharge dispositions frequently resulted in care out of the home; skilled nursing facility (22.0%), rehabilitation facility (15.5%), morgue/funeral home (6.6%), and long-term residential care facility (5.7%). The most common pre-existing medical conditions were hypertension (71.9%), diabetes mellitus (29.3%), chronic obstructive pulmonary disease (19.5%), and dementia (18.8%).

Conclusion: Elder West Virginians most frequently are injured in falls and motor vehicular crashes. Pre-existing medical conditions are very common. Trauma in the elderly creates a significant burden on the patient, their families, and on the health care system in West Virginia. Injury prevention interventions have the potential to diminish the impact of trauma on elder West Virginians.

Introduction

Summation analysis of the data reported in the WV Vital Statistics 2011 Report reveals that accidents, all causes, were the seventh leading cause of death for persons 65 and older in West Virginia (WV) in 2011.[1] Accidental falls and motor vehicle crashes are the most common causes of injury in older West Virginians.[2] In 2010, Census data showed WV to have the third oldest median age in the United States at 38.9 years and that elder West Virginians were 16% of the State's population. It is projected this percentage will grow to 25% by 2030.[3]

According to the Centers for Disease Control and Prevention, one in three seniors will fall every year.[4] The risk of falling increases with age, with some studies reporting fall rates in excess of 40% per year for persons over the age of 85. Minor injuries, such as contusions, bruises, sprains and superficial lacerations, occur about 40% of the time after a

Objectives

The purpose of this article is to review the five year experience, from 2009 to 2014, of elder West Virginians at the Jon Michael Moore Trauma Center, Morgantown, West Virginia, one of West Virginia's two Level I Trauma Centers. Trauma is the seventh leading cause of death for West Virginia seniors over the age of 65. This study will highlight the impact of major trauma on the aging population of rural West Virginia, and the health care systems that care for these patients. This study will describe the causes of serious traumatic injuries in West Virginia seniors, and the impact these injuries have on the health care systems and on the seniors themselves. Pre-hospital and hospital resources utilized by the patients are reported. Injuries and co-morbid medical conditions are identified, in addition to the hospital dispositions for the seniors. The impact of the pre-existing medical conditions on the treatment of the injuries is discussed. Injury prevention interventions for the most common mechanisms of injury are briefly reviewed. By 2020, one in four West Virginians will be over the age of 65. Much work needs to be done in prevention of trauma in the elderly. This article helps us start moving in this direction by examining what is currently known.

fall. More serious injuries, fractures and internal injuries, occur about 5% of the time. In addition to increased risk of falling with advancing age, the risk for more severe injury increases with age. Elderly women living in the community are more likely to fall than older men. Seniors who fall have a significantly increased risk for entering long term care facilities after their fall.

In 2007, fatality rates for both accidental falls and motor vehicle crashes were higher in West Virginia than the nation as a whole.[2] The disparities in fatality rates for accidental falls and motor vehicle crashes are likely multifactorial. Little has been reported on the characteristics of trauma in the elderly, especially in a rural population. Taylor et al. reported age as an independent risk predictor of mortality.[5] Rogers et al. found older, rural trauma patients die more frequently than younger patients and also had worse survival than urban senior trauma victims.[6] This review of the experience of elder West Virginians at the Jon Michael Moore Trauma Center (JMMTC) will highlight the impact of trauma on the aging population of rural WV and the health care systems that care for them. This study will describe the causes of serious traumatic injuries in WV seniors and the impact this has on the health care system and on the seniors themselves. Pre-hospital and hospital resources utilized are reported as well as hospital discharge dispositions for the seniors. Co-morbid medical conditions and injuries will be described.

Methods

Selection of Cases

West Virginia University (WVU) Hospital's Jon Michael Moore Trauma Center in Morgantown, West Virginia, is a Level I Adult Trauma Center that cares for more than 4,500 trauma patients annually. The JMMTC is one of only two Level I Trauma Centers in West Virginia. The patients in this study came from 41 of the 55 counties in West Virginia. Over 100 patient data elements are entered into the Trauma Registry for each patient that include demographic information, injury location, injury date and time, cause of injury, out-of-hospital assessment/treatment, emergency department (ED) admission/assessment/treatment, hospital assessment/treatment, disposition and diagnosis, and patient outcome. Data for this study were extracted from the JMMTC registry for the time period of January 1, 2009 to December 31, 2014. All patients 65 years and older were included in the study, none were excluded. Age, gender, location of injury, mechanism of injury, hospital and ICU length of stay, discharge disposition, pre-existing conditions, and injuries were extracted. Up to 13 pre-existing conditions were entered into the trauma registry for each patient. These pre-existing conditions were summed and reported as a prevalence percentage. Over 230 distinct physical injuries were coded for the patients in the data set. These individual injuries were condensed into 12 anatomic regions for simplified reporting.

The project was approved by the WVU Institutional Review Board (Protocol Number 15092920). Waiver of individual consent and HIPAA waiver was granted.

Results

There were 3,895 patients, aged 65 years or older, in the JMMTC Registry during the study period. This sample accounted for 16.9% of all patients entered in the trauma registry during this time. Women outnumbered men (57.9% vs. 42.1%) and were significantly older (M = 79.0 years, SD = 8.5 vs. 76.8, SD = 8.2, P < 0.001) than their male counterparts. The age range for women was 65 to 105 and for men 65 to 108. Accidents accounted for 98.6% of the injuries, 1.1% were assaults, and 0.3% were self-inflicted. The most common mechanisms of injury are listed in Table 1.

Ambulance was the mode of arrival for 78.6% of patients and 8.7% arrived by medical helicopter. In the ED, 42.9% had partial Trauma Team activation and 6.7% had full Trauma Team activation. Approximately 36% of patients were evaluated primarily by the ED Staff without Trauma Team activation,

Table 1. Mechanism of Injury

Mechanism	Number of patients	% of Total
Fall	2927	75.2
Motor Vehicle Crash	542	13.9
All Terrain Vehicle Crash	61	1.6
Motorcycle Crash	54	1.4
Physical Blow	49	1.3
Automobile versus Pedestrian	39	1.0
Laceration	31	0.8
Crush	28	0.7
Lawn Tractor Crash	27	0.7
Altercation	25	0.6
Gunshot Wound	21	0.5
Farm Tractor Crash	18	0.5
17 Other Mechanisms of Injury, Each With Incidence <0.5%	80	1.8

Table 2. Destination at Hospital Discharge

Discharge Destination	N	%
Home*	1887	48.4
Skilled Nursing Facility	857	22.0
Rehabilitation Facility	604	15.5
Morgue/Funeral Home	258	6.6
Residential Institution	221	5.7
Intermediate Care Facility	36	0.9
Other**	32	0.8

**Includes dispositions of "home, no assistance", "home, with home health", "home, rehab outpatient"*
***Includes "acute care hospital", "burn center", "jail/prison", "long term acute care", "other", "psychiatric facility", and "unable to complete treatment/AMA".*

and 4.9% were directly admitted from outside facilities. From the ED, 32.3% of patients were admitted to an ICU, 21.2% were admitted to a Step-down unit, 39.7% were admitted to a floor bed, and 6.6% were admitted to the operating room. The average hospital length of stay was 5.6 days (SD = 6.5), the average length of stay for patients admitted to the ICU was 3.2 days (SD = 4.2). For the study population as a whole, almost 60% of the seniors were injured in their place of residence, 53.1% in their home and 6.7% in a residential institution. Table 2 displays the hospital discharge dispositions for the data set as a whole.

Table 3 displays the location where the injuries occurred as well as the hospital discharge dispositions by 5 year age groups.

Almost all of the elderly patients had one or more pre-existing condition (90.5%), while 64.2% had two, 36.0% had three, 18.3% had four, 7.4% had five, 2.4% had six, and 0.72% had seven. The prevalence of these pre-existing conditions is listed in Table 4. Table 5 displays the frequencies of injuries experienced by this group of elder West Virginians.

Discussion

Trauma is a significant cause of morbidity and mortality in elderly West Virginians. By 2030, 25% of West Virginians will be over the age of 65. Women significantly outnumbered men in our study and although the age ranges for men and women were similar, women were significantly older. Theses age and gender differences are reflective of the elderly population of WV. Almost 80% of the patients were transported to the trauma center by ambulance and almost 9% of the patients were transported by medical helicopter. Nearly 50% if the patients had trauma team activation on arrival in the Emergency Department. Over 50% of the elderly patients were admitted to the ICU or a Step-Down Unit from the ED. The high intensity of resource utilization of the elderly trauma patient will result in increased pressure on both pre-hospital and hospital resources as this population grows.

For 6.6% of the seniors in the study group, that single trauma resulted in their death during the admission. For persons over the age of 85 the mortality rate was 10%. Table 3 shows that with increasing age, the likelihood of going home at hospital discharge decreases and the likelihood of requiring a rehabilitation facility, nursing home, long term care facility or residential facility increases, except in the 100+ age group. This loss of independence, even if only temporary for those elderly discharged to a rehabilitation or skilled nursing facility, has significant implications for these individuals and their families.

Table 4 shows that pre-existing medical conditions were extremely prevalent in the study group. Nearly 20% of the seniors had four or more pre-existing conditions. The type and frequency of the pre-existing conditions is mirrored in the prevalence of these conditions in WV. These pre-existing conditions and the traumatic injuries result in complex interactions, complicating the management of the elder trauma patient. Management of diabetes becomes more complicated during the admission when patients are not at their baseline level of physical activity, not eating normally, and having stress hormonal response to their traumatic injuries. Poor glucose control negatively impacts wound healing and predisposes patients to other complications. Hyperglycemia is associated with increased mortality in patients with intra-cranial hemorrhage. Smoking negatively impacts wound healing. For patients with COPD, especially those still smoking, rib fractures present a significant risk for respiratory compromise and pneumonia.

The frequencies of the injuries reported here are skewed toward a more severe injury pattern than reported by Whiteman and colleagues in the 2012 article on falls in older West Virginians.[7] The 2012 study included all patients in the WV State Trauma Registry, which includes patients that were less severely injured and admitted to the State's Level II, III, and IV Trauma Centers. Additionally, the current study includes patients injured in MVC's, a higher injury mechanism of injury likely to result in more severe injuries. Over 40% of the patients had an intracranial hemorrhage and over 12% of the patients in the study were on antithrombotic therapy for pre-existing conditions. Pre-existing anti-thrombotic therapy can make intracranial hemorrhages significantly worse. Treatment of intracranial hemorrhages with platelets and prothrombin

Table 3. Injury Locations and Hospital Discharge Dispositions by Five Year Age Range

Percentage	Age Group							
	65-69	**70-74**	**75-79**	**80-84**	**85-89**	**90-94**	**95-99**	**100+**
Injured at Home	41.8	46.4	53.3	58.1	63.1	64.8	61.7	60.0
Injured at Residential Facility	1.5	3.1	5.0	7.4	11.0	16.8	26.7	26.7
Injured on Street	24.9	21.6	15.8	13.5	10.0	3.5	1.7	0.0
Injured at Recreation Venue	5.9	4.1	2.0	1.9	1.0	0.0	0.0	0.0
Injured at Public Building	3.0	2.1	2.6	3.1	2.4	2.9	3.3	0.0
Injured at Other Locations^	22.9	22.7	21.3	16.0	9.5	12.0	6.6	13.3
Discharge Home*	66.7	57.7	48.0	44.0	32.8	27.6	21.7	40.0
Discharge to Rehabilitation	14.3	15.3	14.8	17.0	17.1	15.2	15.0	0.0
Discharge to Residential Facility	1.7	2.6	4.5	5.9	9.3	13.0	25.0	26.0
Discharge to Skilled Nursing Facility	12.4	17.4	23.7	24.5	29.0	33.3	26.6	20.0
Dead	2.7	5.0	7.0	7.3	10.5	9.5	10.0	13.0
Discharged other**	2.2	1.9	2.0	1.3	1.4	1.3	1.6	0.0

^Includes "farm", "mine", "industry", and "other/unspecified".
**Includes dispositions of "home, no assistance", "home, with home health", "home, outpatient rehabilitation"*
***Includes "acute care hospital", "burn center", "intermediate care facility", "long term acute care", "other", "psychiatric facility", and "unable to complete treatment/Against Medical Advice".*

concentrates is very expensive. Until recently, no reversal agent was available for the novel oral anticoagulants/direct thrombin inhibitors. However, the Food and Drug Administration has just approved Idarucizumab, an antibody fragment that selectively binds to dabigatran.[8] Although Idarucizumab appears to be effective in reversing the effects of dabigatran, it is not effective for the other direct thrombin inhibitors. In addition, discontinuation of the antithrombotic therapy increases the risk for stroke, myocardial infarction and other thrombotic events.

Three-quarters of the injuries in elderly West Virginians presenting to our trauma center were injured in a fall. Elements of the Centers for Medicare and Medicaid Services Medicare annual wellness visit have the potential of identifying seniors at risk for traumatic injury. Minkemeyer et al. recently reviewed several fall risk assessment tools and recommended the Timed Up and Go test as an simple and quick evaluation tool that primary care providers in West Virginia can use in their practices to identify patients at risk of falling.[9] Implementation of injury preventions measures, however, can be challenging, especially when pre-existing medical conditions and their treatment increases the risk for traumatic injury and its severity when it occurs.

Home is the most dangerous location for elder West Virginians, almost 60% the injuries occurred at their place of residence. The percentage of elderly injured at their place of residence increased with age. Multiple studies have identified high yield interventions for preventing falls in older adults.[10,11] Long-term exercise programs that include balance, gait and strength training can decrease falls. Home modifications can decrease the incidence of falls in frail seniors. Vitamin D supplementation, to achieve a level of 30-50 nanograms/milliliter, in older women can decrease falls by 40%.[12,13] Psychotropic medications and polypharmacy increase the risk of falls in older adults. If high risk medications cannot be stopped, reducing the dose may be helpful in limiting falls. Primary care providers should review the medication lists at least yearly and assess the need for all medication. Management of postural hypotension and cardiac dysrhythmias also decreases the risk of falls. Use of gait stabilizing devices, especially outdoors in the winter months can reduce falls. Low intensity vibration plate therapy is helpful in improving balance and strength. All of these interventions have been shown to have benefit in reducing falls in community dwelling

Table 4. Pre-existing Conditions

Pre-Existing Condition	Percent
Hypertension	71.9
Diabetes Mellitus	29.3
Chronic Obstructive Pulmonary Disease	19.5
Dementia	18.8
History of Myocardial Infarction	16.0
Congestive Heart Failure	15.4
Anti-Thrombolytic Drug Therapy*	12.3
Current Smoker	8.9
Major Psychiatric Disorder	6.3
Advanced Directive Limiting Care	5.8
Cerebrovascular Accident	5.3
Obesity	4.9
Other Pre-existing Conditions**	3.9
Functionally Debilitated Health Status	3.0
Alcohol Use Disorder	1.9

**Includes Aspirin, Warfarin, Glycoprotein IIb/IIIa Inhibitors, and Novel Oral Anticoagulants/Thrombin Inhibitors*
***Not otherwise specified*

seniors. Most of these interventions have not been found to be as useful in minimizing the fall risk in seniors in long residential care facilities.

Country roads may take us home in WV, however, they can prove to be a dangerous place for WV senior citizens. Motor vehicular crashes are the second most common mechanism of injury in elderly West Virginians. The percentage of elderly West Virginians in our study group injured on the streets steadily decreased with age.

Limitations

The study is retrospective and observational. It is limited by the lack of long term follow up of the patients. The benefits of rehabilitation therapies cannot be determined with the data in the JMM Trauma Registry. Additionally, the data for this study is from only one of the two Level I trauma centers in WV and as such may not be representative of the severe trauma in the elderly for the entire State of West Virginia.

Conclusions

Trauma admissions for elderly West Virginians at the JMMTC were common, accounting for 16.9% of the trauma registry patients. Non-intentional injury accounted for 98.6% of the injuries. The most common mechanisms of injury were falls and motor vehicular crashes. The most common location for the injuries to occur were where the elderly reside and on the highways. The most common serious injuries were intracranial hemorrhages, lower and upper extremity fractures, and spine fractures. Pre-existing medical co-morbidities were extremely common and almost two thirds of the seniors had multiple. Hypertension, diabetes mellitus, COPD, and dementia were the most common co-morbidities. Nearly 1 in 8 of the seniors was on anti-thrombotic therapy. With increasing age, the likelihood of the elderly in our study population returning home at hospital discharge steadily decreased. Overall, 6.6% of the seniors died as a result of their trauma, and over 10% of the patients over age 85 died from their major traumatic event.

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Table 5. Injury Distributions

Injury	# with the diagnosis	% with the diagnosis
Head and neck soft tissue injury*	1955	50.2
Intra-cranial hemorrhage**	1557	40.0
Lower extremity fracture	1484	38.1
Concussion†	1390	35.7
Upper extremity fracture	1119	28.7
Spine fractures	1011	26.0
Skull and facial fractures	915	23.5
Lower extremity soft tissue injuries*	893	22.9
Upper extremity soft tissue injuries*	738	18.9
Rib fracture	649	16.7
Intra-thoracic injury‡	410	10.5
Intra-abdominal injury§	177	4.5

**Includes lacerations, contusions, abrasions, hematomas and tissue avulsions to the body area. STI excludes fracture to the body area.*
***Includes subdural hemorrhage, subarachnoid hemorrhage, intra-parenchymal hemorrhage, epidural hematoma and cerebral contusion*
†Includes loss of consciousness and concussion
‡ Includes: pneumothorax, hemothorax, myocardial contusion
§ Includes: liver laceration, bowel injury, aortic injury, spleen injury, renal injury

CME Post-Test

27. Compare fatality rates for accidental falls and motor vehicle crashes in WV residents older than 65 to national rates:
    a. WV rates are equal to national rates
    b. WV rates are higher than national rates
    c. WV rates are lower than national rates
    d. WV rates of accidental falls are lower, but MVC rates are higher than national rates
    e. WV rates of MVC are lower, but accidental falls are higher than national rates

28. Senior WV residents who are entered in the JMMTC Trauma registry due to trauma are how likely to die due to their fall?
    a. 2.2%
    b. 4.4%
    c. 6.6%
    d. 8.8%
    e. 10%

29. Which group of 3 below represent the most common traumatic injuries in the elderly?
    a. Rib fracture, femur fracture, and pelvis fracture
    b. Lower leg fracture, pelvis fracture, and lumbar spine fracture
    c. Facial fracture, c-spine fracture, and upper arm fracture
    d. Head and neck injury, intracranial bleed, and lower extremity fracture
    e. Intracranial bleed, concussion, and hand fracture

Neurocognitive Degeneration: Diseases, Diagnosis Management, and the Impact on West Virginia

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Introduction

The sequelae of having an aging population is a national healthcare challenge that is especially felt in West Virginia. According to the US Census Bureau, 17.8 percent of West Virginians are over the age of 65 compared to the national average of 14.5 percent.[1] West Virginians also have higher than the national average rates of elderly patients living with disability (44.3% versus 36.5%) and living alone (12.1% versus 9.8%).[2] This puts our patients at higher risk for adverse events, increased morbidity, and significant safety risks.

Dementia signifies a significant impairment in activities of daily living (ADLs) which include mobility, hygiene, dressing, feeding, and toileting. A significant portion of the at-risk population live at home alone making these deficits easily missed or underappreciated by providers and families. The current medical system has become equipped to diagnose physiologic, metabolic, and physical disease with systematic blood pressure monitoring, guidelines for laboratory testing, and sophisticated imaging techniques. However, modern technology has not developed a standardized method for diagnosing diseases of cognitive function. This places the diagnostic responsibility entirely upon the providing clinician to not only ask the appropriate questions, but to understand what the answers mean and treat accordingly.

Dementia affects 6.9% of Americans over the age of 60, with this number doubling every 10 years thereafter.[3] Combined with the understanding that the "oldest old" (90 years or older) represents the fastest growing segment of the US population makes addressing age related illnesses of utmost importance.[2] Alzheimer's disease is the leading cause of neurocognitive degeneration followed by either vascular dementia or Lewy body disease depending on which epidemiologic studies one considers.[4] Based on the West Virginia Alzheimer's Disease Registry, in 2014 there were an estimated 36,000 West Virginians living with Alzheimer's disease.[5] This does not account for those living with non-Alzheimer's related dementia.

The goal of this paper is to help lay a foundation for a diagnostic approach, to discuss potential risk factors, and to review safety and treatment options for dementia. Neurocognitive degeneration will continue to place a huge demand on the health care system and require a significant amount of resources especially in a state like West Virginia. West Virginia has an aging population and the demographics of this population significantly increase the projected prevalence of this disease. The hope is to help equip our clinicians with the knowledge to help prevent, diagnose, and manage dementia. This will not only improve the lives of our patients but will also better our state as a whole.

Diagnosis and Initial Work-up

The field of neurocognitive degeneration has and will continue to evolve. In the most recent DSM-V criteria, an amnestic state is no longer required to make the diagnosis of neurocognitive degeneration. Dementia is now, instead, defined as a progressive decline in any one of six regional modalities of learning and memory, language, executive function, complex attention, perceptual-motor

Objectives

This paper is intended to educate providers on the disease burden, diagnostic strategy, and potential resources to use in treating patients with neurocognitive degeneration. The prevalence of dementia is estimated to be roughly 1-2% at the age of 65, then increases to 10-15% by age 80 nationwide. According to the 2013 US Census Bureau West Virginia has close to 300,000 people over the age of 65 years old, with some 90,000 of them living alone in their household. With the understanding that neurocognitive dysfunction doesn't just affect ones memory, but also executive function, personality, visuospatial skills, and mobility having an educated medical society to ensure optimal diagnosis is essential not only for administering treatment modalities but also for safety of the patient and population at large. Risk factors for dementia do not just include aging, but also include a significant number of comorbid conditions including diabetes, hypertension, hyperlipidemia, smoking, and in-activity, which represent a major degree of disease burden in our patient population. This paper will discuss the American Academy of Neurology guidelines on the approach to safety in patients diagnosed with cognitive impairment as well as the approach to pharmacologic and non – pharmacologic agents in dementia.

Table 1. Clinical Syndrome, symptomatology, and anatomic findings of Neurocognitive Degenerative Diseases.

Clinical Syndrome	Symptoms/Clinical Findings	MRI/Anatomical Abnormalities
Alzheimer's Disease (AD)	Amnestic state, impaired learning, repeatedly asks the same questions	Atrophy in hippocampus and temporal lobes, enlarged ventricles
AD with Aphasia – Logopenic	Word-finding difficulty, repetition difficulty, specifically affecting longer sentences/ phrases	Left posterior perisylvian or parietal atrophy
Primary progressive aphasia – Semantic variant	Impaired confrontation naming, impaired comprehension, loss of object knowledge	Anterior temporal lobe atrophy
Primary progressive aphasia – nonfluent variant	Slow, halting speech, with spared word knowledge	Left Posterior frontoinsular atrophy
Posterior cortical atrophy	Difficulty with facial recognition, object recognition, difficulty drawing complex figures	Occipital lobe atrophy
Lewy Body Dementia	Visual hallucinations, parkinsonism features, impaired complex figure drawing	Occipital hypometabolism on PET, overall though less atrophy than in AD
Progressive Supranuclear Palsy	Parkinsonism with bradykinesia, falls, supranuclear gaze palsy, and executive dysfunction	Atrophy of midbrain, "hummingbird sign"
Corticobasal syndrome	Parkinsonism with rigidity, bradykinesia, typically asymmetric motor findings, with executive, visuospatial, or language dysfunction	Asymmetrical cortical atrophy, often parietal lobe
Behavioral-variant frontotemporal dementia	Disinhibition, apathy, impulsive, hyperorality, and ritualistic behavior	Frontal or anterior temporal lobe atrophy
Vascular Dementia	Slowed mentation, impaired executive function, depressed mood, stepwise pattern of progression	Injury in a vascular distribution, typically with extensive subcortical involvement

function, or social cognition. To make a diagnosis, a patient has to have symptoms falling into these categories that lead to significant impairment in activities of daily living.[6] A pre-dementia state known as mild cognitive impairment only differs from dementia in that there is significant symptomatology in one of the six modalities but with preservation of ones activities of daily living. Once the clinician is able to identify the areas of deficit, an ultimate diagnosis of dementia type (i.e. Alzheimer's disease, Alzheimer's disease variants, Primary Progressive Aphasia, Behavioral Variant-Frontotemporal Dementia, or Parkinsonism diseases) can be applied based on characteristics of the disease (Table 1).

Prior to being able to understand the pathologic state, it is essential to understand the normal, healthy neurocognitive network. Understanding the functional regions of the brain helps to localize and delineate the specific dementia type. To have completely normal function, all regions must work in coordination to balance sensory input with motor output in a controlled, purposeful manner.

The region of learning and memory is best localized to the hippocampus and temporal lobes. Learning or consolidation of memory requires these anatomic structures to be intact and is best assessed by registration and recall on exam. Memory requires consolidation, but also activation of the language center which allows for recognition of information, sensory processing for understanding, and motor output to express that understanding. Given the vast nature of this network, the specific modality of memory and learning is extremely vulnerable to any type of insult. For this reason, dysfunction in memory and learning can be found in nearly all types of dementia. However, Alzheimer's disease is characterized by the predominance of this amnestic state.

Language centers are localized to the dominant hemisphere's perisylvian region, most commonly the left hemisphere, involving the posterior inferior frontal region, posterior superior temporal gyrus, and the connecting fibers of the arcuate fasciculus. Any pathology affecting these areas will lead to some type of language problems. However, even if these networks are completely functional, dysfunction in a more broad scale affecting the frontal lobe, parietal lobe, or basal ganglia can still lead to significant language impairment. The language dominant dementias are a subcategory of the frontotemporal lobar dementias specifically called Primary Progressive Aphasias as well as an Alzheimer's disease variant Logopenic Dementia. There are many language assessment tools but, in general,

all language is broken down into three main components: fluency, comprehension, and repetition, with well described localization depending on the type and degree of impairment.

Nearly all mental status exams evaluate for memory and language function. The remainder of disease assessment proves to be much more challenging to identify. Frontal lobe dysfunction is found in nearly all neurocognitive degenerative diseases specifically involving executive function, complex attention, and social cognition. Dysfunction in this domain is much harder to assess and often more subtle, but is a major contributor to overall morbidity. Patients with frontal lobe dysfunction might physically be able to eat, dress, and bathe, but they can lack the motivation to do so. So while their physical exam may be unremarkable, their functional ability can be dramatically impaired. The main behavioral dominant dementia is Behavioral Variant Frontotemporal Dementia. The Montreal Cognitive Assessment (MoCA) has been shown to be more sensitive and specific relative to the Mini Mental Status Exam for detecting mild cognitive impairment and frontal lobe dysfunction.[7, 8]

The perceptual-motor component encompasses two different categories of disease: the visuospatial category and the Parkinsonism dementia category. Vision localizes to the occipital lobe and is easiest to identify by history assessment and complex figure drawing. The main perceptual dominant dementia is Posterior Cortical Atrophy, an AD variant. Parkinsonian features are best evaluated by a comprehensive physical exam and include Lewy body dementia, Corticobasal Syndrome, and Progressive Supranuclear Palsy. These can localize to different areas of the brain, but all have dysfunction with dopamine pathways.

In addition to regional understanding, it is very important to establish a timeline of symptom progression. The primary neurocognitive degenerative disorders have a steadily progressive pattern of decline, while that of a vascular dementia is step-wise. Rapidly progressive dementias occur over weeks to months and have their own disease pathologies and work-up approaches. Once the provider has characterized the disease, a targeted work-up can be initiated.

The American Academy of Neurology (AAN) recommends obtaining vitamin B12 and thyroid-stimulating hormone levels, as well as structural brain imaging (either MRI scan or head CT) as a standard work-up for reversible causes of dementia.[9] In a patient with a typical pattern of progression, an exhaustive work-up for reversible causes has proven to be of low yield and is very cost ineffective.[10] If the progression is rapid, the history suggests an underlying systemic pathology, or a patient falls into a high risk population for alternative disease states, then a more extensive work-up is justified, but is out of the scope of this article.

Risk Factors, Treatment and Safety

Age is not the only risk factor for development of dementia. Dementia has additional risk factors including diabetes, hypertension, hyperlipidemia, physical inactivity, obesity, smoking, and social isolation.[11-14] Unfortunately, West Virginia has a much higher prevalence than the national average for diabetes (13% versus 9.6%), obesity (35.1% versus 29.4%), physical inactivity (31.4% versus 25.3%) and smoking (27% versus 19%).[15] Further contributing to morbidity in our population are the high rates of disability, elders living alone, and a large number of people who lack a high school education. All of these factors contribute to our patient population being increasingly vulnerable to adverse outcomes. Although controlling these risk factors after the diagnosis of neurocognitive decline has failed to show clear benefit, there have been multiple studies showing that people without these comorbidities have a significantly lower likelihood of developing dementia.[11-14] Using prior population data, a recent study estimated that a 25% reduction of cardiovascular risk factors (diabetes, hypertension, and obesity) would decrease the number of AD cases by 233,000.[16] Furthermore, a 25% reduction in physical inactivity would drop the number by an additional 232,000 cases in the United States alone.[16] Across seven modifiable risk factors including diabetes, hypertension, obesity, depression, physical inactivity, smoking, and education/cognitive inactivity, a 25% reduction in these factors would prevent up to 3 million cases of dementia worldwide.[16]

When it comes to treatment, there are very few effective options. The only Federal Drug Administration (FDA) approved medications are cholinesterase inhibitors and N-methyl-D-aspartate receptor antagonists, both of which are only approved in Alzheimer's disease. At most there is modest benefit, up to 10% improvement, in clinical outcomes of cognition, with even less improvement in actual quality of life measurements.[17, 18] The Agency for Healthcare Research and Quality (AHRQ) stated that "treatment of dementia with cholinesterase inhibitors and memantine can result in statistically significant but clinically marginal improvement in measures of cognition and global assessment of dementia."[19] The modest benefit of these treatments needs to be weighed against the potential for adverse effects and the cost of these medications. Cholinesterase inhibitors have been shown to have a 69% increased risk for bradycardia and a 49% increased risk for having a pacemaker implanted.[20]

When a diagnosis of neurocognitive degeneration has been made, treatment can be discussed but the primary focus should be placed on safety and environmental modification. Aside from ensuring patient safety and assessment of ADLs, the clinician should also take into account the instrumental ADLs which enable independent living and include driving, preparing food, managing money, paying bills, and maintaining

a house. Speaking with family is essential to obtain an accurate functional assessment, address safety concerns, and get insight into personality changes. Family members need to be involved in the treatment decisions as well as safety planning. With regards to driving restrictions, the AAN recommends clinicians perform a Clinical Dementia Rating Scale (Table 2) or carry out a questionnaire about recent motor vehicle accidents and driving practices.[21] Patients with a clinical dementia rating scale of 2 or higher are thought to be unsafe drivers.[21] This information is then provided to patients and families who ultimately are held liable for any future accidents. Some states, like Pennsylvania, require mandatory reporting of patients with moderate or severe dementia. At this time West Virginia does not require such reporting.

Discussion

Given the aging population, extent of comorbid disease burden, and major morbidity risk factors in West Virginia, it seems imperative that all medical providers consider screening for dementia in at risk populations, even in the absence of patient or family reported cognitive problems. While there is seldom adequate time allotted for such screening in routine office visits, the Annual Wellness Visit (AWV) covered annually by Medicare part B is an ideal time to screen for functional and cognitive decline in an aging population, with cognitive evaluation being a standard component of the initial AWV. Making a diagnosis of dementia relies on a high index of suspicion, adequate history taking, appropriate neurocognitive testing, and a comprehensive physical exam.

Given the significant prevalence of all major risk factors for dementia, lack of effective treatment, and monumental safety concerns, equipping our state's primary care providers and specialists with the training, skills, and resources to manage dementia patients is essential. Based on this extensive review of the data, the area of most cost-effective potential seems to be primary disease prevention and optimal management of cardiovascular risk factors. In addition, it is prudent to continue to push for a cultural shift away from physical inactivity and social

Table 2: Clinical Dementia Rating Scale [22]

Impairment Level	None (0)	Questionable (0.5)	Mild (1)	Moderate (2)	Severe (3)
Memory	No memory loss or slight inconsistent forgetfulness	Consistent forgetfulness, partial recollection of events	Moderate memory loss; more marked for recent events; defect interferes with daily activities.	Severe memory loss; only highly learned material retained.	Severe memory loss; only fragments remain.
Orientation	Full oriented	Fairly oriented except with slight difficulties with time relationships.	Moderate difficulty with time relationships, oriented in familiar areas.	Severe difficulty with time relationships, almost always disoriented to place.	Oriented to person only.
Judgment & Problem Solving	Solves everyday problems, such as financial affairs; judgment is preserved.	Slight difficulty in solving problems, similarities and differences, social judgment maintained.	Moderate difficulty on handling problems, similarities and differences, social judgment maintained.	Severely impaired in handling problems, similarities and differences; social judgment impaired.	Unable to make judgment or solve problems.
Community Affairs	Independent function in job, shopping, social groups	Slight impairment in these activities.	Is not independent in these activities, appears normal to casual inspection.	Is not independent outside home, appears well enough to be taken to events outside the home.	Is not independent outside the home, appears to be too ill to be taken to events outside the home.
Home and Hobbies	Daily life at home, hobbies, and intellectual interests well maintained.	Daily life at home, hobbies and intellectual interests slightly impaired.	Slight impairment of tasks at home, more difficult chores, hobbies, and interests are abandoned.	Only simple chores are maintained, restricted interests, poorly maintained.	No significant function at home.
Personal Care	Fully capable of self-care.	Fully capable of self-care.	Needs assistance.	Requires assistance in dressing and hygiene.	Requires much help with personal care; frequent incontinence.

isolation towards regular exercise and cognitive training techniques.

The annual societal cost of dementia is estimated at $41,000 to $56,000 per case.[23] With an estimated disease burden in West Virginia of at least 36,000 cases, this equates to a total of $1.48 billion dollars spent annually in our state alone. In a state that has a steadily aging population with significant comorbidities, the health care community must strive to work towards prevention and appropriately diagnose, manage, and help patients and families plan for the future in the setting of a dementia diagnosis. Planning for the future includes both safety planning as well as end of life care planning to avoid unwanted medical interventions which will undoubtedly raise overall costs without providing any additional quality of life. The challenges ahead that encompass neurocognitive degeneration will undoubtedly affect our state, arguably to a greater degree than many other states, and will require the entire medical community to work together to provide the absolute best care possible for our fellow mountaineers.

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CME Post-Test

30. Which of these is not a risk factor for dementia?
    a. Being physically inactive
    b. Drinking 1 beer a day
    c. Long standing obesity
    d. Continued smoking
    e. Diagnosis of diabetes

31. What is the highest risk age population for neurocognitive dysfunction?
    a. 65 and over
    b. 80 and over
    c. 90 and over
    d. 55 and over

32. What three things does the American Academy of Neurology recommend for a routine dementia work-up?
    a. Vitamin D, Syphilis screen, and neuro psych testing
    b. Complete blood count, comprehensive metabolic panel, and thyroid function testing
    c. Functional MRI imaging, spinal tap, and electroencephalogram (EEG)
    d. Vitamin B12, Thyroid stimulating hormone level, and MRI imaging

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4) a b c d	12) a b c d e	20) a b	28) a b c d e
5) a b c d	13) a b c d	21) a b c	29) a b c d e
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7	Improving Rural Bone Health and Minimizing Fracture Risk in West Virginia: Validation of the World Health Organization FRAX® Assessment Tool as a Phone Survey for Osteoporosis Detection										
8	The Impact of Alzheimer's Disease in an Aging Rural Population										
9	Major Trauma and the Elder West Virginian: A Six Year Review at a Level I Trauma Center										
10	Neurodgenerative Disease: Diagnosis, and the Impact on West Virginia										

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2. A cover letter to the editor must accompany the manuscript, listing
   a. How this report will advance the understanding of a disease, drug or medical problem in general.
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   e. Conclusion (80 words max.): clearly state the main conclusions derived from this experience.
   f. References: If a manuscript contains more than 20 references, the additional references may be abridged due to space constraints. In this case, a notation to contact the authors for the complete list is published at the end of the article.

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