West Virginia Medical JOURNAL

March/April 2013
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West Virginia State Medical Association

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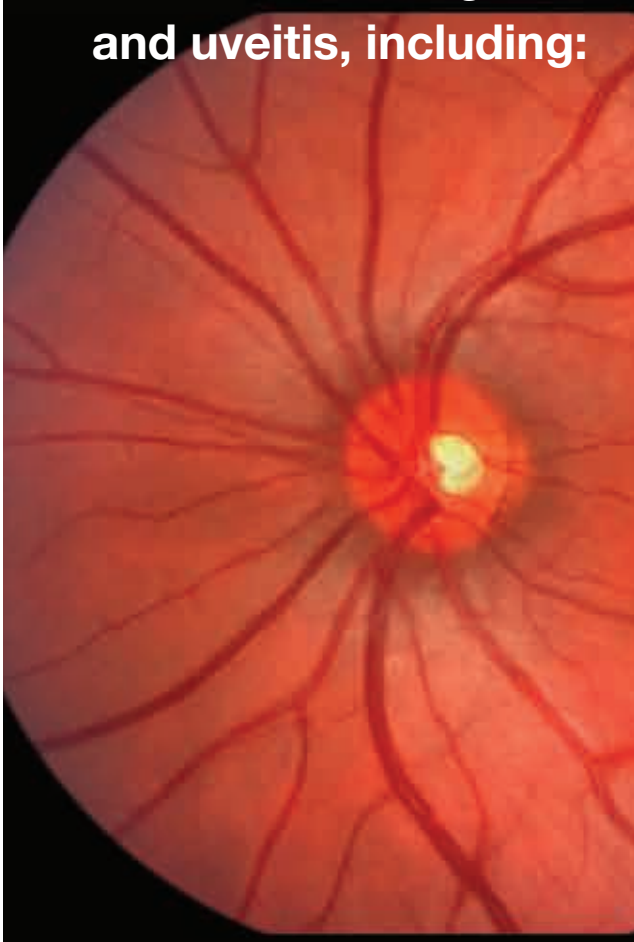

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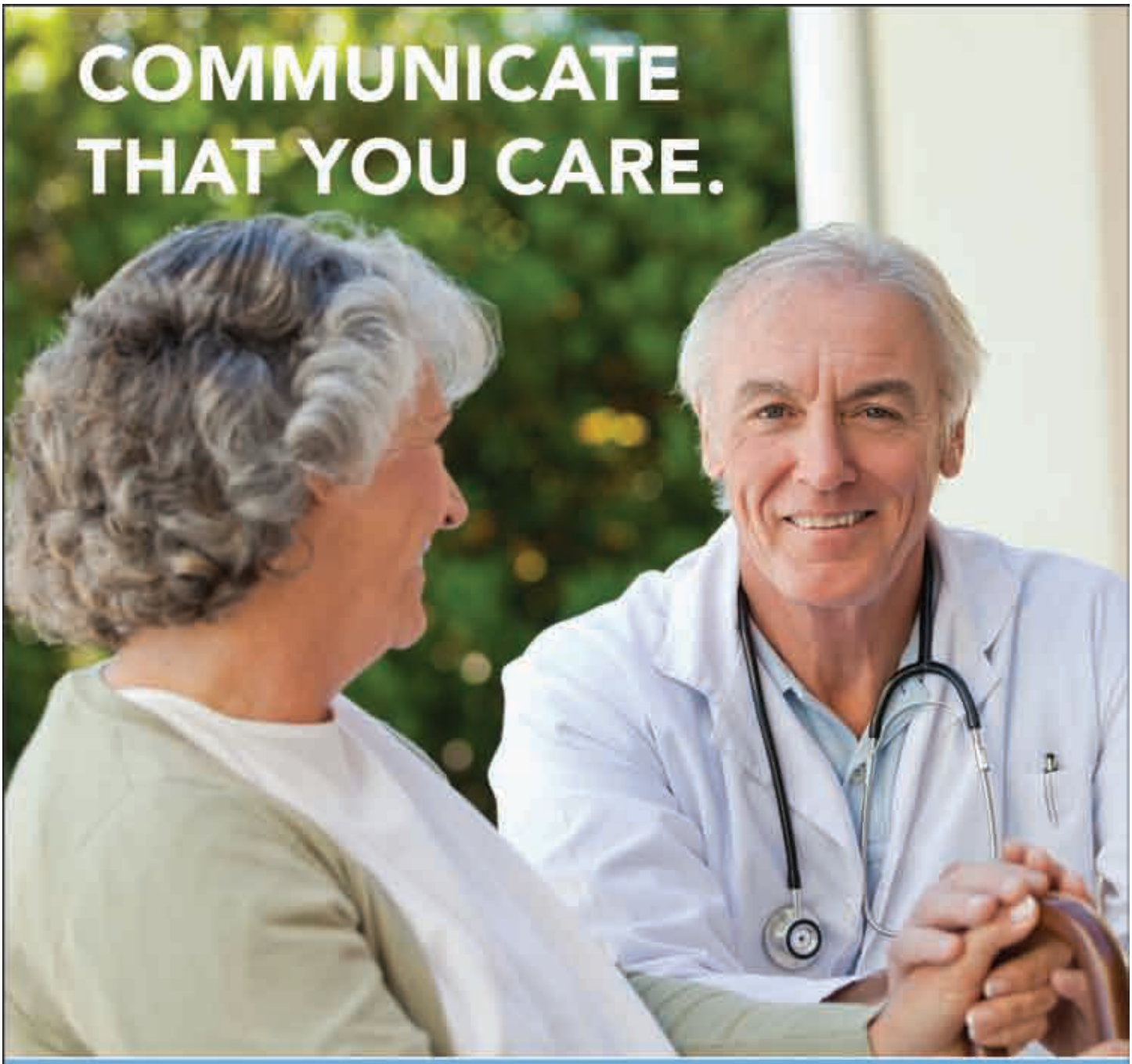

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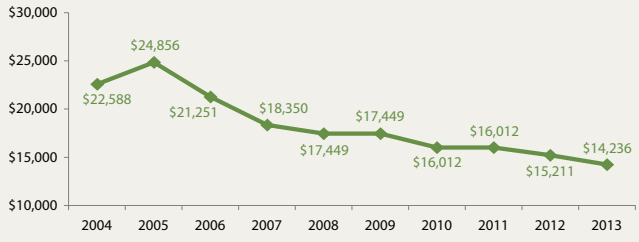

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About the cover: *Turkey Spur overlook at Grandview State Park in Raleigh County, West Virginia. Used with permission of the National Park Service via nps.gov.*

Scientific Articles

FEATURES

The ***West Virginia Medical Journal*** is published bimonthly by the West Virginia State Medical Association, 4307 MacCorkle Ave., SE, Charleston, WV 25304, under the direction of the Publication Committee. The views expressed in the *Journal* are those of the individual authors and do not necessarily reflect the policies or opinions of the *Journal's* editor, associate editors, the WVSMA and affiliate organizations and their staff.

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President's Message

Deadlines for Payments or Penalties

by Hoyt J. Burdick, MD
WVSMA President
2012-2013

A deadline may be one of two things:

1. A time limit, as for payment of a debt or completion of an assignment.
2. A boundary line in a prison that prisoners can cross only at the risk of being shot.[1]

The first definition originated from early 1920's American English newspaper jargon.

The second definition originated in the 1860's in a Confederate prisoner-of-war stockade and involves gun violence, so we'll focus on the first definition. Nonetheless, deadlines are often associated with rewards or penalties, though less often of the life-and-death variety.

Everyone knows that the deadline for filing personal income tax returns is April 15, 2013. If your last name begins with any of the letters M-Z, you know that June 28, 2013 is the deadline for renewal of your West Virginia medical license. Many physicians may not know about approaching governmental deadlines created by state or federal mandates including West Virginia's new prescription drug abuse law (SB437), the Affordable Care Act, Meaningful Use and e-Prescribing initiatives. Below are a few deadlines for physicians, most of which were recently summarized by Neal Chesanow, Senior Editor, Medscape Business of Medicine.[2]

Continuing Medical Education Deadlines

SB437 modified a section of West Virginia Code §30-1-7a that does away with CME requirements for "end-of-life including pain management" for physicians. The new law does require physicians, with few exceptions, to take an approved CME program on drug diversion training and best practice prescribing of controlled substances. The two licensure boards (MD/DO) have proposed rules being considered by the legislature that will set the number of hours required each licensure cycle and the effective date of the CME requirement. (Current proposal is 3 hours CME beginning for licensees renewing after May 2014.) Physicians who attests on a Board-developed certification form that he/she has not prescribed, dispensed/administered a controlled substance during the subject reporting period: one (1) year for a new licensee, the two (2) year renewal period for other licensees are exempt.

e-Prescription Deadlines

If you didn't electronically write at least ten prescriptions in the first six months of 2011, you already lost 1% of your Medicare reimbursement in 2012. You could lose an additional 1.5% this year and 2% next year. The deadline for submitting 2012 e-Prescriptions was February 28, 2013.

Meaningful Use Deadlines

February 28, 2013, was also the last day to complete attestation for Meaningful Use of electronic health records to qualify for payment based on the year 2012. This year and 2014 are the last years that eligible professionals who see Medicare or Medicaid patients can earn incentive payments. If you fail to meet the deadlines, the incentive payments become financial penalties rising from 1% in 2015, up to 3% in 2019.

Physician Value-based Purchasing Deadlines

On January 1, 2013, CMS began gathering performance data through the physician quality reporting

system (PQRS) for additional payments or penalties in 2015. Once again there are rewards and penalties associated with this deadline for selecting and reporting quality measures. A physician's quality performance scores will be combined with claims-based efficiency data to develop a "value-based modifier" (VBM) that will result in differing Medicare rates being paid to individual physicians. The 2015 VBMs will be based on two years of performance beginning in 2013. High-quality, low-cost groups would receive up to a 3% increase in their Medicare rates while under performing groups would lose up to 1% of their reimbursement.

State Insurance Exchange Deadlines

Unless the deadline is extended, March 31, 2013 is the deadline for notifying your employees about new health insurance exchanges, including the value of any coverage you offer and whether employees are eligible for a premium tax credit for a plan purchased through a state exchange.

In 2014, physician practices with 50 or more workers that don't provide employee health insurance must pay a penalty of $2000 for each employee who buys government-subsidized insurance through an exchange (excluding the first 30 employees who do so). The deadline to make that decision is in 2013.

ICD-10 Coding and Billing Deadlines

The process of transitioning a practice to ICD-10 coding is estimated to take up to two years. The October 1, 2014 ICD-10 conversion deadline is less than two years away.

Physician Payments Sunshine Act Deadlines

CMS missed a 2012 deadline to begin data collection and public reporting of all fees and gifts valued over ten dollars given to physicians by drug and device manufacturers. The deadline for posting the data was January 1, 2013. Of course, there are no consequences for the federal government missing deadlines, but it might be prudent for physicians to consider any financial disclosures that will soon be publicly posted.

IPAB and SGR Medicare Pay Cut Deadlines

The sustainable growth rate (SGR) formula for adjusting Medicare payments to physicians has a new deadline of December 31, 2013. This flawed 1997 reimbursement formula has to be implemented or replaced with some budget-neutral alternative or extended by establishing a new deadline. In addition, if Medicare cost growth exceeds a target rate, the Independent Payment Advisory Board (IPAB) will independently recommend provider payment cuts to Congress beginning in 2014. The American Medical Association supports a bill to repeal IPAB.

Get Informed and Get Involved in the Future of Medicine Deadlines

The deadlines for physicians to get informed and involved in shaping the future of medicine may only be identifiable after they have passed. The good news is that, even though we may have missed a few opportunities for positive influence, there is still time. Dr. W.J. Bates, of Wheeling, the Father of the WVSMA, sent an official call to all regular practitioners in the state with a deadline of April 10, 1867 for the first convention in Fairmont. The WVSMA constitution continues to challenge the West Virginia physicians to get informed and involved in shaping the future of medicine:

The purposes of this Association shall be to federate and bring into one compact organization the entire medical profession of the State of West Virginia and to unite with similar associations or societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to promote the public health; to maintain the highest standards of medical education; to secure the enactment and enforcement of just medical laws; to promote the general welfare of the profession; and to enlighten and direct public opinion in regard to Medicine in West Virginia, and to promote the time honored commitment of the profession to the prevention and cure of disease and in improving the quality of life in the State.[3]

References

1. www.answers.com/topic/deadline; American Heritage Dictionary.
2. Medscape Business of Medicine, Chesanow, Jan 16, 2013, online.
3. Constitution and Bylaws of the West Virginia State Medical Association; 02/11/06 www.wvsma.com

Unique Association of Myeloid Neoplasm with Eosinophilia and Abnormalities of PDGFRA with TTP

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Abstract

Myeloid neoplasm with eosinophilia and abnormalities of Alpha type platelet derived growth factor receptor (PDGFR*A*) is a type of hypereosinophilic syndrome characterized by multiorgan damage due to eosinophilia. Its association with thrombotic thrombocytopenic purpura (TTP) has rarely been reported. We describe here a case report of a female in whom TTP presented as one of the earlier manifestations of myeloproliferative HES with rearrangement of PDGFR*A*. Our patient was found to have a normal ADAMTS-13 level which is not commonly seen with TTP. This case illustrates the importance of recognizing the atypical presentations of HES which may be difficult to recognize.

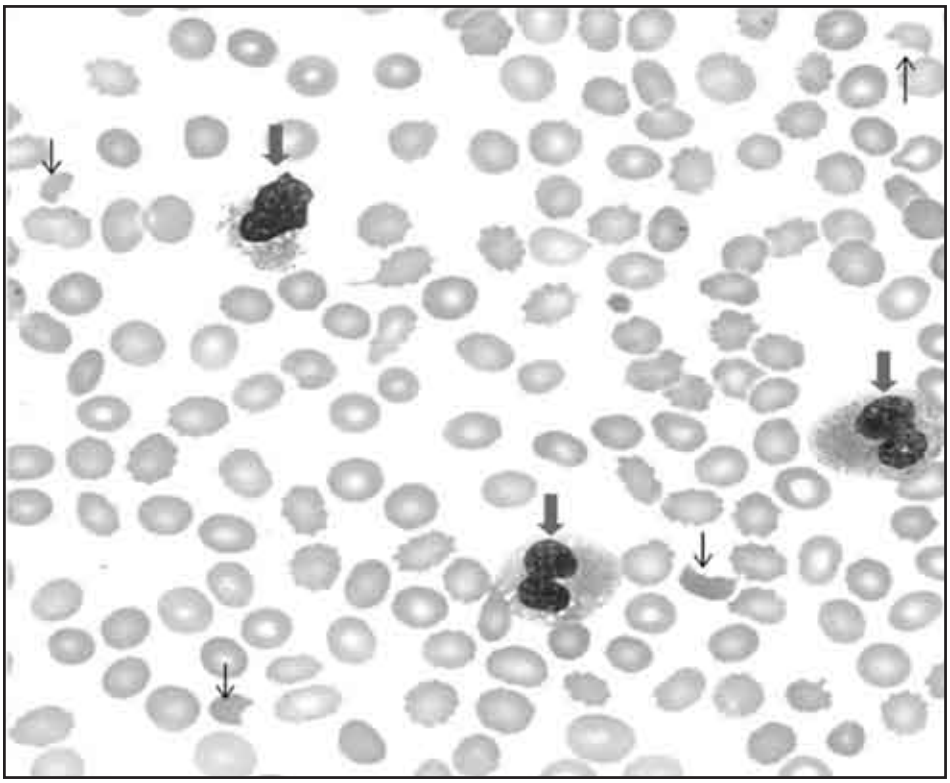
Introduction

The hypereosinophilic syndromes (HES) are a group of disorders characterized by sustained overproduction of eosinophils, in which eosinophilic infiltration and mediator release cause damage to multiple organs, most commonly heart, lung, central nervous system, gastrointestinal tract and skin. The evaluation of HES is extensive and requires investigation of all underlying reactive and neoplastic etiologies of eosinophilia. The diagnosis of idiopathic hypereosinophilic syndrome, therefore, is one of exclusion. The idiopathic hypereosinophilic syndrome was first defined by Chusid et al in 1975 as (1) persistent eosinophilia of 1.5x10 9/L or more for longer than 6 months associated with signs and symptoms of hypereosinophilic disease; (2) a lack of evidence for parasites, allergies or other known causes of eosinophilia; and (3) presumptive signs and symptoms of organ involvement.[1] The most common mutation associated with the myeloproliferative variant of HES is the fusion tyrosine kinase *FIP1L1/PDGFRA*. Patients with this mutation respond dramatically to the tyrosine kinase inhibitor, imatinib mesylate, with clinical, hematological and molecular remission.

Thrombotic thrombocytopenic purpura (TTP) is a life threatening disorder characterized by thrombocytopenia, microangiopathic hemolytic anemia (MAHA) and less consistently with fever, renal involvement and neurological symptoms. Recent studies have indicated that the deficiency of A Disintegrin-like and Metalloprotease with Thrombospondin Type 1 Motif, 13 (ADAMTS13) is a cause of TTP.[2,3] ADAMTS13 is a von Willebrand factor-cleaving protease and its deficiency causes accumulation of ultra-large multimers of VWF responsible for the thrombotic and MAHA complications of this disease. HES and thrombotic thrombocytopenic

Abbreviations Used	Explanation
FIP1L1-PDGFRA	FIP1-like 1-Platelet derived growth factor receptor type A
TTP	Thrombotic Thrombocytopenic purpura
HES	Hypereosinophilic syndrome
ADAMTS-13	A Disintegrin-like and Metalloprotease with Thrombospondin Type 1 Motif, 13
MAHA	Microangiopathic hemolytic anemia
VWF	Von Williebrand factor
LDH	Lactate dehydrogenase
PEX	Plasma exchange
FISH	Florescent in-situ hybridization
CHIC2	Cysteine-rich hydrophobic domain 2
RT-PCR	Reverse transcriptase-polymerase chain reaction
ADCC	Antibody dependent cell-mediated cytotoxicity

Figure 1.
Peripheral blood smear showing markedly increased eosinophils (red arrows) and 4+ schistocytes (narrow black arrows). (H & E staining; original magnification x 100).



purpura (TTP) have rarely been reported to occur together.

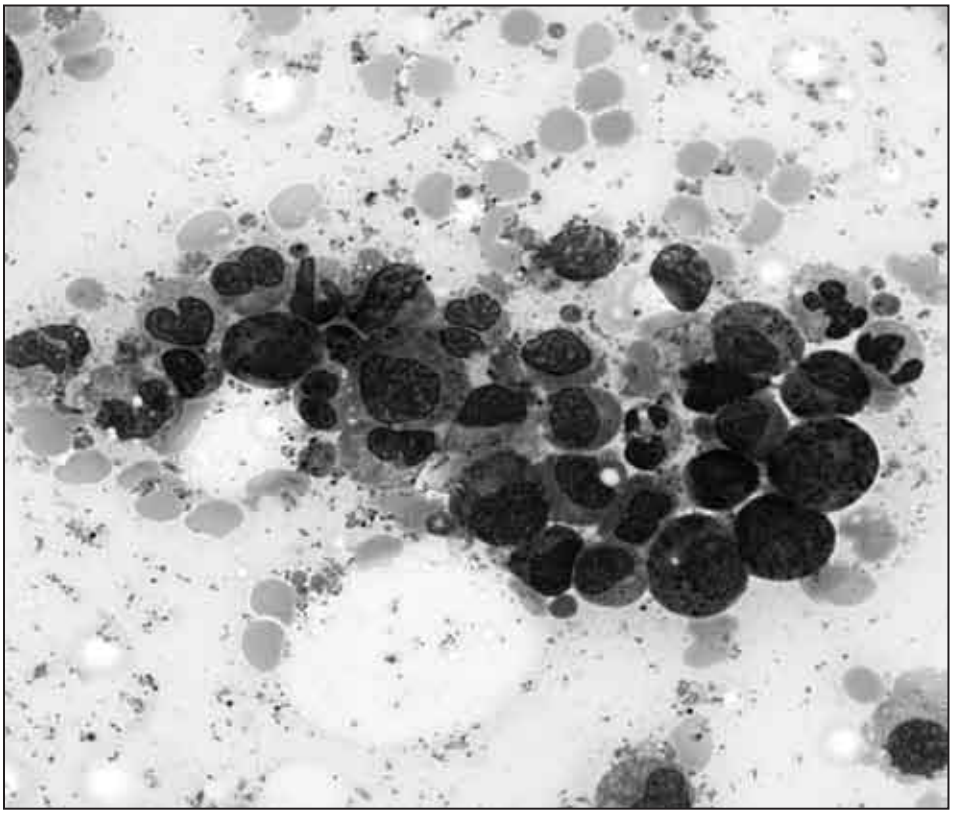
Case Presentation

This report describes a 37 year old Caucasian female for whom TTP represented the presenting manifestation of HES (myeloid neoplasm with eosinophilia and abnormalities of *PDGFRA*; WHO2008). The patient had no significant past medical history and was not taking any medications at the time of presentation. She reported 2 months of weight loss, fatigue, confusion and renal failure. Laboratory evaluation revealed: WBC count=14,600/uL, absolute eosinophil count=7000/uL, platelet count=64,000/uL, Hgb=10.2g/dL, LDH=371U/L, haptoglobin<6 mg/dL, negative Coombs' test and creatinine of 2.93 mg/dL. Review of peripheral blood smear revealed markedly increased eosinophils and 4+ schistocytes. (Figure 1) Infectious workup, which included blood cultures with fungal isolators, urinalysis with culture and chest radiograph, was unremarkable. Transthoracic echocardiogram revealed normal left ventricular ejection fraction. The constellation of MAHA, confusion, renal insufficiency, elevated LDH and thrombocytopenia was consistent with a diagnosis of TTP, and she was initiated on plasma exchange (PEX). ADAMTS13 activity prior to PEX was normal. Extensive evaluation for reactive eosinophilia, including stool ova and parasites, *Aspergillus* testing, Anti-neutrophilic antibody, Anti-neutrophilic cytoplasmic antibody, Rheumatoid factor and drug review was negative. Bone marrow biopsy showed a hypercellular marrow with an extensive proliferation of eosinophilic precursors, representing 70% of the bone marrow cellularity (Figure.2). Cytogenetics revealed a 46XX chromosome complement with an interstitial deletion of the long arm of chromosome 5 [del(5)(q15q33)]. Fluorescence in situ hybridization (FISH) for *PDGFRβ* was negative. FISH utilizing *CHIC2* probes demonstrated a cryptic deletion at chromosome 4q12, with resultant *FIP1L1-PDGFRA* rearrangement (Figure 3). These findings were diagnostic of a myeloid neoplasm with eosinophilia and abnormalities of *PDGFRA*. She was initiated on imatinib 400mg daily. Repeat bone marrow biopsy after 3 months showed complete morphological and cytogenetic remission. However, she developed pancytopenia with WBC of 1500/ul and platelet count of 126,000/uL, which was thought to be secondary to a myelosuppressive effect of imatinib. Imatinib was temporarily discontinued and the pancytopenia resolved at which time it was reinitiated at a lower dose of 100mg daily. TTP initially responded to PEX with normalization of platelet count, haptoglobin, hemoglobin and renal function; however, she relapsed once PEX was discontinued. PEX was reinitiated and she received rituximab weekly for 4 weeks for refractory TTP. At this point, PEX was discontinued. She continues on 100mg of imatinib and remains in complete remission for nine months.

Discussion

This case illustrates the importance of recognizing atypical presentations of myeloproliferative HES. Our patient presented with TTP and was found to have a myeloid neoplasm with eosinophilia and *PDGFRA* rearrangement. Our case report is different from other published literature in that our patient was found to have a normal ADAMTS13 activity which is thought to be rarely associated with TTP. Another unique aspect of this case is the sex

Figure 2.
Bone marrow biopsy showing a hypercellular marrow with an extensive proliferation of eosinophilic precursors, representing 70% of the bone marrow cellularity (H & E staining; original magnification x 100).



of our patient. Myeloid neoplasm with eosinophilia and *PDGFRA* rearrangement is rare in females. Only four cases of TTP associated with HES have previously been reported (Table 1).[4-6] Unlike our case, two previously reported cases had low ADAMTS-13 activity and increased ADAMTS13 inhibitor level,[4,5] while in the two other cases ADAMTS-13 levels were not determined.[6] In all of these four previously published cases, HES was not associated with *PDGFRA* rearrangement.[4-6] We report, to our knowledge, the first case of TTP in association with myeloid neoplasm with eosinophilia and *PDGFRA* rearrangement.

An interesting aspect in the management of *PDGFRA* rearrangement of HES was the variability of the imatinib dosage. The most appropriate dose of imatinib in *F1P1L1/PDGFRA* positive HES remains controversial as systematic dose comparison studies have not been performed. However, there is data to suggest that the dose necessary to suppress the presence of the fusion gene below the level of detection by RT-PCR ranges from 100-400mg daily.[7] This variability in doses could be due to a difference in drug absorption or metabolism, susceptibility of different fusion breakpoints to imatinib or noncompliance. It is important to follow patients with periodic molecular testing (RT-PCR or FISH) to assure remission and if necessary, to increase the dose of imatinib until the fusion

Table.1: Summary of reported cases of TTP associated with HES.

Authors	Age/Sex	ADAMTS-13 Activity	ADAMTS-13 inhibitor	PDGFRA rearrangement	TTP present
Al Aly Z et al	22yrs/F	Decreased	Increased	NA	Yes
Ohguchi H et al	80 yrs/F	Decreased	Increased	Negative	Yes
Liapis H et al	15yrs/M	NA	NA	NA	Yes
	26yrs/M	NA	NA	NA	Yes
Current Case	37yrs/F	Normal	Not present	Present	Yes

NA: Not available.

gene is no longer detectable. Our patient has been stable on 100mg of imatinib and remains in remission on continued monitoring.

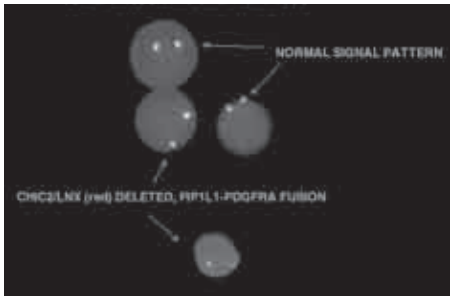
We also report our experience with the addition of rituximab for the treatment of refractory TTP. Rituximab, a chimeric monoclonal antibody against CD20, has been recognized as a useful therapy for antibody mediated autoimmune diseases. Rituximab binds to CD20-positive B-cells and depletes these cells via antibody-dependant cellular cytotoxicity (ADCC), inducing apoptosis and complement-mediated lysis. [8-9] The ongoing humoral autoimmune response may be interrupted by the depletion of peripheral blood B-cells caused by rituximab, thus providing a rationale for its use in autoantibody mediated TTP.

As mentioned above, in all the cases of TTP associated with HES reported previously, no *PDGFRA* rearrangement was present. In the two cases where ADAMTS13 levels were assayed, ADAMTS13 activity was low and ADAMTS13 inhibitor level was elevated, consistent with the findings typically observed in the majority of idiopathic cases of TTP (Table.1). We hypothesize, based on the normal ADAMTS13 activity in our patient, that TTP associated with a myeloproliferative disorder may have different disease biology and possibly a higher relapse risk with standard therapies. It is possible that the products released from degranulated eosinophils cause endothelial damage which is probably extensive in the setting of eosinophilia and leads to microvascular thrombosis, which in turn may precipitate MAHA.

Conclusion

Hypereosinophilic syndrome can cause multiorgan damage and it is important to recognize the presenting features of HES. TTP can cause life threatening thrombotic, renal and neurological complication and it can be rarely seen in conjunction to HES causing devastating effects. TTP is a commonly seen condition not only by hematologists but also by internists, but its association with HES is rare and can be missed early on in the disease process. It is critical to recognize and manage HES and TTP in a timely manner to prevent irreversible complications. A high index of suspicion is warranted when unexplained eosinophilia is seen in patients with TTP. This case illustrates the importance of recognizing atypical presentations of HES and how keeping a broad differential in our history, physical examination and diagnostic investigations can be life saving in such situations. It is also important to point out that ADAMTS 13 activity might be normal in some patients and is not a diagnostic test for TTP.

Figure 3.
Fluorescence in situ hybridization utilizing CHIC2 probes demonstrating a cryptic deletion at chromosome 4q12, with resultant FIP1L1-PDGFRA rearrangement with four interphase cells. Two cells (top, and middle right) show two red CHIC2 signals (normal pattern) and the remaining two cells (bottom and middle left) show deletion of one CHIC2 signal (abnormal pattern; original magnification, x 1000).



References

1. Chusid DC, West BC, Wolf SM. The hypereosinophilic syndrome. Analysis of fourteen cases with review of the literature. *Medicine.* 1975;54(1):1-27.
2. Sadler JE. Von Willebrand factor, ADAMTS13, and thrombotic thrombocytopenic purpura. *Blood* 112: 11-18, 2008.
3. Fujimura Y, Matsumoto M, Yagi H, et al. Von Willebrand factor-cleaving protease and Upshaw-Schulman syndrome. *Int J Hematol* 75: 25-34, 2002.
4. Al Aly Z,.Philoctête Ashley JM et a.. Thrombotic thrombocytopenic purpura in a patient treated with Imatinib Mesylate: True association or mere coincidence? *Am J Kidney Dis.* 2005 Apr;45(4):762-8.
5. Ohguchi H, Sugawara T, Harigae H. Thrombotic thrombocytopenic purpura complicated with hypereosinophilic syndrome. *Intern Med.* 2009;48(18):1687-90.
6. Liapis H, Ho AK, Brown D, et al. Thrombotic microangiopathy associated with the hypereosinophilic syndrome. *Kidney Int.* 2005 May;67(5):1806-11.
7. Klion AD, Robyn J, Maric I, et al. Relapse following discontinuation of imatinib mesylate therapy for FIP1L1/PDGFRA-positive chronic eosinophilic leukemia: implications for optimal dosing. *Blood* 2007;110:3552-3556.
8. Reff ME, Carner K, Chambers KS, et al. Depletion of B cells in vivo by a chimeric mouse human monoclonal antibody to CD20. *Blood* 1994;83:435-445.
9. Byrd JC, Kitada S, Flinn IW, et al. The mechanism of tumor cell clearance by rituximab in vivo in patients with B-cell chronic lymphocytic leukemia: evidence of caspase activation and apoptosis induction. *Blood* 2002;99:1038-1043.

Parental Attitudes Affecting Compliance with the Recommendation for Two Doses of 2009 Pandemic Influenza A (H1N1) Vaccine in Children Less than 10 Years of Age in West Virginia

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Abstract

OBJECTIVE: It is unclear why parents would decline the second dose of an influenza vaccine for their children during a declared global pandemic. Therefore our objective was to examine parental attitudes behind parents foregoing the second dose of 2009 pandemic influenza A (H1N1) vaccine for their children in Kanawha County, WV.

METHOD: A survey tool addressing barriers to receiving second dose was developed and validated with a randomly generated parent focus group. The West Virginia's Statewide Immunization Information System (WVSIIS) database listed 1,925 parents who have one child or more who received the first but not the second dose of vaccine within the recommended time period. The surveys and letters were sent to all the 1,925 parents. Participants were offered the choice of completing a paper version of the survey sent through the mail or an online version at a password-protected website.

RESULTS: A total of 381 surveys were received (345 hardcopy surveys and 36 online surveys) and were included in the analyses (response rate 22.0%). Of these 381 respondents 249 did not meet the inclusion criteria. Thus our effective response rate was 132/1525, or 8.66%. The major reasons for respondents being unable to have their child(ren) receive the second dose were related to access limitations. A perception of low urgency and safety of vaccine were other concerns. However, the majority of respondents (80%) did not cite safety concern as a reason for not accepting the second dose.

CONCLUSION: Our findings suggest that rather than safety concerns, parents often faced access challenges in having their children fully vaccinated which were perhaps not widely recognized.

Introduction

The first influenza pandemic of 21st century was declared by World Health Organization on June 11, 2009,[1] and was followed by substantial increase in influenza activity. On August 21, 2009, the Centers for Disease Control and Prevention (CDC) recommended a targeted vaccination strategy for 2009 pandemic influenza A (H1N1).[2] On October 09, 2009, for children under ten years, CDC recommended two doses of 2009 pandemic influenza A (H1N1) vaccine, 4 weeks apart.[3]

For persons in the initial target groups, 2009 H1N1 influenza vaccination coverage rates varied across the United States, ranging from 19.4% in Mississippi to 57.5% in Rhode Island (U.S. median: 33.2%).[4,5] Moreover, the percent of children under ten who received two doses of the 2009 H1N1 influenza vaccine was significantly lower, ranging from 17 to 33%.[6,7] Past studies of seasonal influenza vaccination have indicated that the majority of children who received their first dose of trivalent inactivated influenza vaccine did not complete the two-dose series.[8] Vaccine effectiveness and immunogenicity data indicate that antibody responses are substantially higher when young children are given two doses 4 weeks apart, forming the basis for the current seasonal influenza recommendations for all children aged 6 months—8 years.[3,9,10]

For childhood immunizations, previous research has established that primary reasons for lack of vaccination or under-vaccination include concerns about vaccine safety and efficacy, distrust in healthcare system and under-appreciation of risks and severity of disease.[11-13] However, our literature review could not identify any data on specific reasons why parents would decline the second dose of an influenza vaccine for their children during a declared global pandemic. The goal of our investigation was to examine parental attitudes affecting noncompliance in obtaining the second dose of an influenza vaccine for their children during a declared pandemic in the United States.

Methods

The Kanawha-Charleston Health Department (KCHD) organized county-wide school-located vaccination clinics and offered the 2009 H1N1 influenza vaccine to over 30,000 children enrolled in public and private schools. The campaign was initiated on October 27, 2009 with second dose administration beginning December 01, 2009 and concluding on January 13, 2010. A total of 15, 083 students

received their vaccinations in schools. All vaccine administered required entry into West Virginia's Statewide Immunization Information System (WVSIIS).

On April 23, 2010, KCHD obtained WVSIIS data for all children under ten that received the first but not the the second dose of vaccine within the recommended time period. A survey tool addressing barriers to receiving second dose was developed and validated with a randomly generated parent focus group. Institutional Review Board approval was obtained from University of Charleston. The WVSIIS database listed 1,925 parents who had one child or more who received the first but not the second dose of vaccine within the recommended time period. The surveys and letters were sent to all the 1,925 parents. Participants were offered the choice of completing a paper version of the survey sent through the mail or an online version at a password-protected website. A random drawing for gift cards for $50 and $100 were used as an incentive for parents to return surveys. Each parent was contacted up to two times throughout the survey, and one follow-up reminder postcard was sent. A cover letter and a stamped return envelope accompanied the surveys.

Results

Of the 1,925 mailed surveys, 151 were returned as undeliverable or duplicate entries; resulting in adjusted sample size of 1,774. A total of 381 surveys were received (345 hardcopy surveys and 36 online surveys) for a 21.5% response rate. Despite the WVSIIS database stating that 1,925 parents of children 10 and under receiving the first but not the second dose, our sample revealed that only 132/360 (36.7%) stated not having received both doses of vaccine for their child(ren) (21 respondents did not respond to this item). After excluding both the 21 respondents who failed to answer the first and second dose item, and the 228 respondents who stated that their child(ren) did receive both doses, we were left with a response rate of 132/1525, or 8.66%. Thus, data analysis was conducted on the 132 responses who stated their child(ren) received the first but not the second dose of vaccine. The majority of respondents (90.9%) were female. Major reasons for respondents unable to have their child(ren) receive the second dose were related to access limitations. A perception of low urgency and safety of vaccine were other concerns. However, the majority of respondents (80%) did not cite safety concern as reason for not accepting the second dose. (Reasons stated by parents for their children <10 years of age not receiving the second dose of (H1N1) vaccine are presented in Table 1).

Table 1: Reasons stated by parents for their children <10 years of age not receiving the second dose of ***2009 pandemic influenza A (H1N1) vaccine***

Reason	Not a reason No. (%)	Major No. (%)	Minor No. (%)	Total*
First dose may have provided some immunity so I didn't think my child(ren) were at risk for getting a serious case of H1N1 flu	101 (76.5)	10 (7.6)	21 (15.9)	132
I didn't think the H1N1 flu outbreak was as dangerous as public health officials once thought	95 (73.6)	14 (10.9)	20 (15.5)	129
There was not as much push by media to get the second dose	91 (71.1)	10 (7.8)	27 (21.1)	128
There was not as hard a push by the school officials or health department to get the second dose	83 (65.4)	20 (15.7)	24 (18.9)	127
I was not aware a second dose of H1N1 flu vaccine was needed for my child(ren) under 10 years old	96 (73.8)	22 (16.9)	12 (9.2)	130
I developed new concerns about safety risks to my child(ren) from the second dose of vaccine which were not present at time of the first dose	100 (80)	11 (8.8)	14 (11.2)	125
A doctor or another health care professional suggested that the second dose of H1N1 flu vaccine was not required	102 (79.7)	10 (7.8)	16 (12.5)	128
Someone other than a health care professional suggested that the second dose of H1N1 flu vaccine was not required	111 (88.8)	6 (4.8)	8 (6.4)	125
I thought that even if my child(ren) gets H1N1 flu, it is not a serious illness and I can get medication to treat it	110 (88.7)	2 (1.6)	12 (9.7)	124
My child did not bring home the required paperwork or consent	103 (76.9)	23 (17.2)	8 (6)	134
My child(ren) was (were) unable to attend school the day of the second dose and I did not know of other ways of getting the vaccine	88 (66.7)	36 (27.3)	8 (6.1)	132

**The total for a given survey question may not equal the total number of respondents because of multiple responses and some parents may not have answered all questions.*

Further, we utilized chi square test to determine significant differences ($P<0.05$) between the parents whose first child received a second dose of vaccine and those who did not (Table 2). Parents who received the 2009 pandemic influenza A (H1N1) vaccine themselves, were more educated, or believed that the vaccination was safe, were more likely to get the second dose for their child(ren).

Discussion

Our study highlights that parents faced more access challenges during the recent influenza pandemic. Contrary to previously published work,[14] our analysis found a very high favorability rating towards safety of vaccine as 124/130 (95%) parents believed the H1N1 influenza vaccine was "very safe" or "somewhat safe" (Figure 1).

Our study has several limitations. First, being a self-administered mail survey entailed the potential for non-response bias. Personalized mailings, financial incentives, repeated contacts and mailings with enclosed stamped envelopes were attempted to minimize this. Secondly, the response to this study was voluntary and thus prone to self-selection biases. To partially mitigate this limitation we randomly contacted several non-responders to ask survey questions and did not find any systematic differences. Thirdly, the data obtained from WVSIIS was inaccurate in identifying those children who did not receive the second dose of vaccine, since over 63% of the reported children missing the second dose had actually received it, according to respondent responses. WVSIIS data (and possibly other states that

Table 2: Comparison (using Chi Square test) between parents of children <10 years of age whose first child receive both doses and those whose child received only one dose of the 2009 pandemic influenza A (H1N1) vaccine

Characteristics	First child received both doses No. (%)	First child did not receive second dose No. (%)	Total*
Parent received the H1N1 vaccine**			
Yes	132 (72.1)	51 (27.9)	183
No	96 (54.2)	81 (45.8)	177
Vaccine Route			
Injection	54 (40.3)	80 (59.7)	134
Nasal	20 (32.3)	42 (67.7)	62
Education Level**			
Associate degree or less	45 (39.1)	70 (60.9)	115
Bachelor's degree or more	53 (50.5)	52 (49.5)	105
Parents' Belief on safety**			
Very Safe	82 (53.2)	72 (46.8)	154
Somewhat safe	31 (37.4)	52 (62.6)	83
Not Very Safe	3 (33.3)	6 (66.6)	9
Not at all safe	0	0	0

**The total for a given survey question may not equal the total number of respondents because of multiple responses and some parents may not have answered all questions*

***p<0.05*

utilize immunization registry for capturing this information) may have significantly underestimated the total immunization coverage for 2009 pandemic influenza A (H1N1) in West Virginia. Lastly, the survey measured parents living in a confined region (Kanawha County, West Virginia) and therefore caution should be exercised when generalizing findings to other populations.

Conclusions

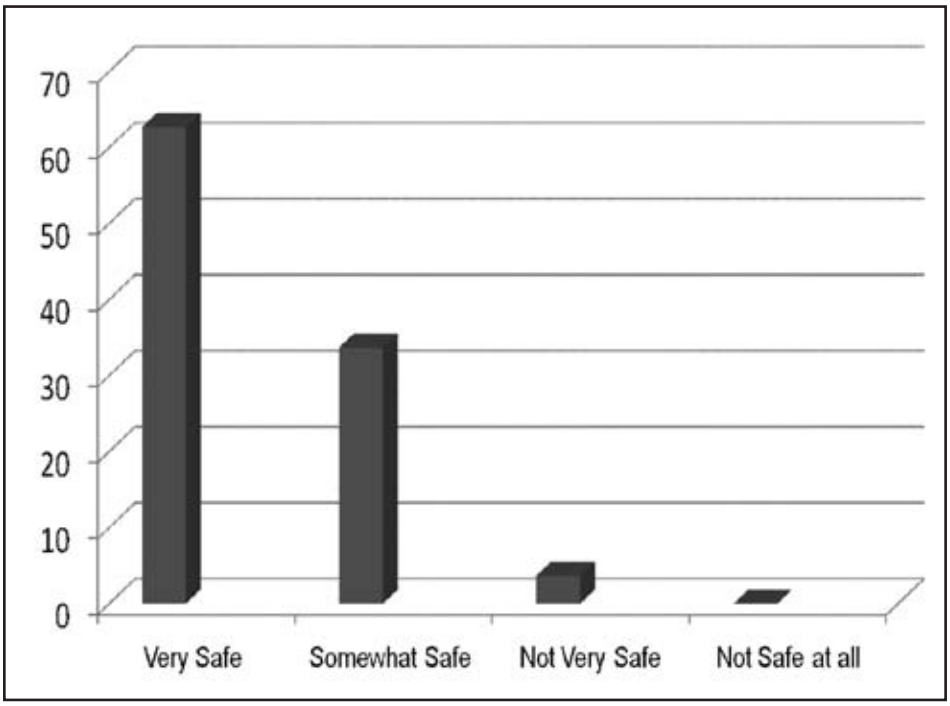
Despite the aforementioned limitations, our investigation provides new information about why certain children under ten years did not receive their second dose of 2009 pandemic influenza A (H1N1) vaccine. While this study provides a good first step toward maximizing second dose compliance for children when recommended, additional studies are needed. It is recommended that policies that increase access through better information and risk communication strategies targeted towards children requiring two doses of the influenza vaccine be developed in order to increase compliance for second dose. Additionally, we recommended further evaluation of state based immunization registries to increase the accuracy of intake information.

References

1. World Health Organization. New influenza A (H1N1) virus: global epidemiological situation, June 2009. *Wkly Epidemiol Rec* 2009;84:249-57.
2. Centers for Disease Control and Prevention (CDC). Interim results: state-specific influenza A (H1N1) 2009 monovalent vaccination coverage - United States, October 2009-January 2010. *MMWR Morb Mortal Wkly Rep.* 2010;59(12):357-62. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5912a2.htm. Accessed August 19, 2010.
3. Fiore AE, Uyeki TM, Broder K et al. Prevention and control of influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP), 2010. *MMWR Recomm Rep.* 2010;59(RR-8):1-62. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5908a1.htm?s_cid=rr5908a1_w. Accessed August 18, 2010.
4. Centers for Disease Control and Prevention (CDC). Use of Influenza A (H1N1) 2009 Monovalent Vaccine. Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2009. *MMWR Recomm Rep.* 2009;58(RR-10):1-8. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr58e0821a1.htm. Accessed August 18, 2010.
5. Centers for Disease Control and Prevention (CDC). Update on influenza A (H1N1) 2009 monovalent vaccines. *MMWR Morb Mortal Wkly Rep.* 2009;58(39):1100-1. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5839a3.htm. Accessed August 19, 2010.
6. Harvard School of Public Health (HSPH) poll. February 5, 2010. Available at http://www.hsph.harvard.edu/news/press-releases/2010-releases/poll-half-of-americans-believe-h1n1-outbreak-over.html. Accessed on July 20, 2010.
7. Falco M. February 5, 2010. Americans advised to get H1N1 vaccine. *CNN*, Atlanta, GA. Available at http://www.cnn.com/2010/HEALTH/02/05/h1n1.flu.vaccine/index.html. Accessed on July 20, 2010.
8. Jackson LA, Neuzil KM, Baggs J, et al. Compliance with the recommendations for

2 doses of trivalent inactivated vaccine in children <9 years of age receiving influenza vaccine for the first time: a Vaccine Safety Datalink study. *Pediatrics* 2006;118:2032-7.
9. Allison MA, Daley MF, Crane LA, et al. Influenza vaccine effectiveness in healthy 6- to 21-month-old children during the 2003-2004 season. *J Pediatr* 2006;149:755-62.
10. Ritzwoller DP, Bridges CB, Shetterly S, et al. Effectiveness of the 2003-2004 influenza vaccine among children 6 months to 8 years of age, with 1 vs 2 doses. *Pediatrics* 2005;116:153-9.
11. Bennett P, Smith C. Parents attitudinal and social influences on childhood vaccination. *Health Educ Res.* 1992;7:341-348
12. Salmon DA, Moulton LH, Omer SB, DeHart MP, Stokley S, Halsey NA. Factors associated with refusal of childhood vaccines among parents of school-aged children: a case-control study. *Arch Pediatr Adolesc Med.* 2005;159(5):470-6.
13. Mills E, Jadad AR, Ross C, Wilson K. Systematic review of qualitative studies exploring parental beliefs and attitudes toward childhood vaccination identifies common barriers to vaccination. *J Clin Epidemiol.* 2005;58(11):1081-8.
14. SteelFisher GK, Blendon RJ, Bekheit MM, Lubell K. The public's response to the 2009 H1N1 influenza pandemic. *N Engl J Med.* 2010;362(22):e65.

Figure 1.
Parents belief towards safety of the 2009 pandemic influenza A (H1N1) vaccine.



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Encouraging Smoking Cessation during Pregnancy in West Virginia: Using Fax-to-Quit as a Cessation Strategy

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Abstract

Despite known dangers of smoking, a majority of pregnant women continue to smoke or relapse following delivery. West Virginia women have high unmet needs for smoking cessation, and the prenatal period presents a critical and unique opportunity for education and quitting assistance. West Virginia's Fax-to-Quit program uses provider-faxed referrals to the Quitline to engage smokers and connect them with cessation services. A 12-month feasibility evaluation of this Fax-to-Quit program for pregnant women was conducted. In February 2009, providers and staff from three OB/GYN clinics in three adjoining West Virginia counties were recruited. All participating sites received an intensive half-day training program. Adult pregnant smokers receiving prenatal care in these OB/GYN clinic sites were eligible to participate. Recruitment sites screened pregnant women for smoking; assessed readiness-to-quit; and enrolled consenting participants in the Fax-to-Quit Program. The Quitline measured cessation attempts with six-month follow-up of enrolled participants. Between March-December 2009, 58 referrals were made at these OB/GYN clinic sites, with 15 women (25.9%) enrolling in Quitline services. These enrolled women account for approximately one-quarter of calls from pregnant smokers to the West Virginia Quitline in the past 12 months. Contact, communication, and cooperation with office staff were relevant and important to successful project implementation. Findings indicate that Fax-to-Quit is feasible to engage providers and pregnant smokers with the West Virginia Quitline. Successful referrals and enrollment demonstrate Fax-to-Quit may support cessation by increasing Quitline use and connecting pregnant women who smoke with quitting services through provider-faxed referrals to the West Virginia Quitline.

Introduction

Despite known dangers of smoking during pregnancy, only 18-25% of pregnant women quit, and a majority return to smoking following delivery.[1-2] West Virginia (WV) women have high unmet needs for smoking cessation, and 2009 WV smoking prevalence among all adults (25.6%) is tied with Kentucky for the highest rate among US states.[3] Pregnancy Risk Assessment Monitoring System (PRAMS) data from 2000-2005, showed increasing WV smoking rates before, during, and after pregnancy, in contrast with declining US rate.[4] WV 2005 PRAMS data reported 45.8% of women smoked 3-months prior to pregnancy, while 31.9% smoked during pregnancy, with a US rate of 11.7%.[5] Approximately 36% of WV's 18-24 year-old pregnant women smoke, and prevalence in some remote rural counties approaches 50%.[6,7]

Health risks of smoking before, during, and after pregnancy are well-established, including increased risks of premature birth, low birth weight, and infant death. Infants born to a smoking mother weigh on average 200 grams less, and pregnant women exposed to secondhand smoke have a 20% greater likelihood of a low birth weight baby.[1,5] The prenatal period presents a critical and unique opportunity for smoking cessation education and assistance.

Quitline use has been shown to increase successful cessation, and likewise, telephone counseling has also demonstrated effectiveness as a cessation method offered to pregnant smokers.[8-9] The West Virginia Tobacco Quitline is a free service available to residents, and among 4,367 adults enrolled in 2008, 3.0% were pregnant women.[10] Fax-to-quit programs have been used successfully to enhance provider-delivered smoking cessation counseling in community-based practices.[11] WV's Fax-to-Quit program involves a provider-faxed referral to the Quitline, engaging smokers and connecting them with cessation services. A 12-month feasibility evaluation of WV's Fax-to-Quit program for pregnant women was conducted to: establish a collaborative of stakeholders; develop a Fax-to-Quit protocol; pilot the program among WV pregnant smokers; assess feasibility and impact to guide future cessation interventions.

Methods

In February 2009, providers and staff from three OB/GYN clinics in three adjoining counties of North

Central West Virginia were recruited by project staff and community-based partners to implement this feasibility pilot study. Intensive half-day training was conducted by the project team with providers and staff, which included: brief smoking cessation intervention training in accord with the US Public Health Service Agency for Healthcare Research and Quality (AHRQ) Clinical Practice Guidelines as updated in 2008;[12] fax referral protocol training; and subsequent on-site monthly follow-up visits. Adult pregnant smokers receiving prenatal care in OB/GYN clinic sites in these three North Central West Virginia counties were eligible to participate. Clinic recruitment sites were designated to screen pregnant women for smoking; assess readiness-to-quit; and enroll consenting participants in the Fax-to-Quit Program. The process would occur during the physician visit in 5 minutes or less, to facilitate the interaction without significant time burden on the provider.

The West Virginia Tobacco Quitline is sponsored by the West Virginia Department of Health and Human Resources, and administered by beBetter Health, Inc., a worksite wellness company. To enroll in the WV Quitline, our study participants signed a form during their clinic visit allowing the WV Quitline to contact them via telephone and enroll them in cessation services. Clinic staff then faxed the signed form to the Quitline within 24 hours. Subsequently, the participant was contacted via telephone by the Quitline: a Tobacco Cessation Specialist conducted a 40-question intake with her, which included questions related to demographics, tobacco use and history, readiness and reasons to quit, referrals, and any relevant medical history. Once the participant was enrolled in Quitline services, she received educational materials, weekly phone coaching services, and could receive some type of prescription product, such as NRT and/or Zyban based on eligibility, insurance coverage, and physician authorization.[13] All pregnant women who enrolled in the program were followed-up for six month point prevalence quitting outcomes, which occurred seven months after enrollment in the WV Quitline, allowing one month for the receipt of reading material, Nicotine Replacement Therapy and Coaching calls to be initiated.[13] WV Quitline staff monitored referrals and gathered quitting data from participants.

Six-month follow-up data measured attempts to quit tobacco use from the time of enrollment, the number and quit rate of those successfully quitting at six months, and overall program satisfaction

with the WV Quitline services. The intent–to-treat and responder methodologies, as recommended by the North American Quitline Consortium (NAQC) minimum data set guidelines, were used to calculate six-month quit rates.[13] The intent- to- treat methodology assumes lost to follow-up respondents are still smokers. This model is based on research protocols and is used principally for research purposes. The responder methodology excludes the lost to follow-up population from the post-surveys and only includes those respondents who could be reached in the post follow-up-surveys. This method ignores any assumptions concerning the tobacco use status of the lost to follow-up individuals.[13] Following the seven-month enrollment period, post-survey follow-up calls were administered to the fax- to-quit enrollees to determine quit status and overall satisfaction with the program. A total of six call attempts were made at various times during the day, evenings and weekends, to reach the enrollees and complete the follow-up surveys. After these follow-up calls were completed, those who were unable to be reached were designated as "lost to follow-up" (LTF) or hard to reach. As such, these LTF respondents were assumed to still be using tobacco products and were counted as still smoking within guidelines of NAQC statistical analysis methods.[13]

Results

Between March and December 2009, a total of 58 referrals were made at these three WV OB/GYN clinic sites. One clinic site dropped out of the Fax-to-Quit program during this time period due to the provider relocating out of state. Among those women referred to the WV Quitline, there were 15 women (25.9%) who enrolled in Quitline cessation services. A majority of women who enrolled in Fax-to-Quit were: White; 18-24 years of age; did not graduate high school; lived with a smoker; smoked 1 pack per day; smoked their first cigarette within 5 minutes of awaking; used cigarettes only; previously tried to quit using tobacco; reported 1-2 past quit attempts; and reported enrolling in the Fax-to-Quit program during their first trimester (See Table 1).

Table 1: West Virginia Fax-to-Quit: Enrollment by Demographics and Smoking Behavior Variables

Demographic	Enrollment	
	N	%
Clinic Site-County		
Preston	4	26.7
Marion	6	40.0
Monongalia	5	33.3
Ethnicity		
White	15	100.0
Non-White	0	0
Age		
18-24	9	60.0
25-34	4	26.7
35-44	2	13.3
Education		
Less Than High School	8	53.3
High School Graduate	4	26.7
Some/College Graduate	3	20.0
Live With Smoker		
Yes	10	66.7
No	5	33.3
Packs of Cigarettes		
Less than 1	7	46.7
1 or more	8	53.3
Time After Awakening		
Within 5 Minutes	8	53.3
6-30	2	13.3
31-60	4	26.7
60+ Minutes	1	6.7
Tobacco Type		
Cigarettes Only	14	93.3
Poly - Cigarettes & Smokeless tobacco	**1**	**6.7**
Participant Previously Tried To Quit Using Tobacco		
Yes	**13**	**86.7**
No	**2**	**13.3**
Number of Participant Previous Quit Attempts		
1-2	**9**	**69.2**
3 or more	**4**	**30.8**
Trimester When Enrolled		
1st	**8**	**53.3**
2nd	**6**	**40.0**
3rd	**1**	**6.7**

In 2009, across all Quitline participants, there were 204 pregnant enrollees from a total female enrollment of 6,011; of these 58 were faxed enrollments.[13] The Fax-to-Quit program accounted for 15 (25.9%) of the 58 pregnant faxed enrollments and 7.4% of total pregnant individuals enrolled. Enrolled women from this Fax-to-Quit pilot study accounted for approximately one-quarter of the calls from pregnant smokers to the WV Quitline in the past 12 months.

As described in the methods section, both the intent–to-treat and responder methodologies recommended by NAQC were used to calculate six-month quit rates. The overall responder quit rate, which included only those enrollees for whom post surveys were completed, resulted in one of 8 (12.5%) of enrollees successfully quitting tobacco at the six month follow-up period. Quit attempts averaged 62.5% across all demographic areas. The intent-to-treat rate of abstinence was 6.7%, with quit attempts of 33.4%, combining successful quitters with those who quit but relapsed.

Follow-up surveys from the seven completed enrollees resulted in 3 responses (42.9%) within the "very satisfied" category with Quitline services. Those "mostly or somewhat satisfied" with the program and Quitline services comprised 57.1% of responses. There were no respondents who reported being "dissatisfied" with the overall program and WV Quitline services, and the single quitter reported being "very satisfied" with the overall program.

During its period of conduct, this feasibility pilot study identified key components of successful Fax-to-Quit implementation, which are: coordination among office staff and providers; monthly site visits to all clinics; and frequent communication between a key clinic contact and Fax-to-Quit project staff. The contact, communication, and cooperation with office staff were relevant and important to project success.

Discussion

Tobacco use is the leading preventable cause of cancer and other chronic diseases.[1] A recent study has shown a transgenerational relationship between pre-natal and post-natal tobacco smoke exposure during the mother's pregnancy and childhood cancer.[14] Another study reported childhood brain tumors and leukemia-lymphoma associated with maternal smoking in pregnancy or maternal ETS exposure.[15] Reducing smoking rates among pregnant women is an important public health priority, with only modest cessation rates typically generated by brief counseling during routine prenatal care.[9]

The rate of smoking and pregnancy in West Virginia, as measured by self-report birth certificate data, has been consistently high since that data collection began in 1989. The rate was 27.6% in 1989 and 27.0% in 2008. The lowest rate during this 20-year period was 24.6% in 1995.[16] WV is also a state where only 18 of its 55 counties are covered by a comprehensive smoking regulation; therefore, it remains a state where tobacco use can be a normative behavior.[17] The WV Bureau for Public Health has devoted resources to assist pregnant smokers with cessation through several statewide initiatives, including conducting focus groups with pregnant smokers in 2010 among various regions of the state. Women reported that their healthcare providers inquired about smoking during initial prenatal visits, but continued assessment and treatment at subsequent prenatal visits was inconsistent. Focus group findings indicate that more aggressive

tobacco treatment is needed among pregnant smokers in West Virginia.[18]

Findings from this pilot indicate that Fax-to-Quit is a feasible option to engage providers and pregnant smokers with the West Virginia Tobacco Quitline. Successful referrals and enrollment among pregnant WV smokers indicate that Fax-to-Quit may support quit attempts by increasing Quitline usage and connecting these women with cessation services through provider faxed referrals to the Quitline. We acknowledge that our current protocol would be changed in future implementation efforts to capture advances in technology. For example, we would consider conducting the next phase of our Fax-to-Quit Program with hand-held portable devices, such as an iPad or iPod, to electronically submit the referral and offer compatibility with electronic medical record systems at provider offices.

Our study was limited by small sample sizes related to both referrals and program enrollment. Fifteen women enrolled (out of 58 referrals), and only slightly more than half of those enrolled completed the post survey 6-month follow-up. While we realize that these small numbers and loss to follow-up limit the generalizability of study results, we emphasize the feasibility of the process based upon our findings. The additional challenges of working with clinic sites were educational for our implementation team, in terms of: logistical process and feasibility related to organization; time allocation of physicians and office staff; and relocation, with one site moving out of West Virginia during the study period. We also recognize the valuable lessons learned in terms of communication and organization at the clinic sites, which will be incorporated into future clinic-based smoking cessation studies among smokers in West Virginia.

Fax-to-Quit programs and referring participants to a Quitline have been successfully used in other states, such as Oregon, Michigan, and most notably Wisconsin.[11,19-21] The Fax-to-Quit program is straightforward, and is based upon the principles of the 5 A's (Ask, Advise, Assess, Assist, Arrange) as developed by the US Public Health Service/AHRQ clinical guidelines for treating tobacco use and dependence.[12] A recent study by Okoli and colleagues (2010) reported that greater than 50% of health care providers will be likely to ask women about their smoking status in a primary care visit and advise pregnant smokers to quit; however, fewer than half will either assess readiness to change, assist in smoking cessation, or arrange for follow-up appointments/ referrals. Provider, patient, and system/organizational barriers were all identified that can hinder the provision of smoking cessation services by health care providers.[22]

West Virginia's high unmet need for smoking cessation among pregnant women is compounded by issues of health disparities, low socioeconomic status (low SES), low rates of higher education, and rural access to care. Programs such as Fax-to-Quit can offer opportunities to address barriers at provider, patient, and organizational levels, increasing effective communication and providing services to address unmet needs for cessation among West Virginia's pregnant women who smoke. The increase in calls from pregnant smokers to the WV Quitline in the past 12 months is an important accomplishment and emphasizes the feasibility of programs to encourage awareness and offer opportunities for pregnant women smokers to contact the Quitline. Fax-to-Quit may begin to bridge the cessation gap among underserved pregnant women who smoke in this rural West Virginia population. Further exploration of additional programs and means to motivate women to contact the West Virginia Quitline is needed to promote its use as a statewide accessible cessation resource.

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References

1. US Department of Health and Human Services. The Health Consequences of Smoking: A Report of the Surgeon General. USDHHS, Centers for Disease Control and Prevention, National Center for Chronic Disease, Office of Smoking and Health 2004.
2. Fang WL, Goldstein AO, Butzen AY, Hartsock SA, Hartmann KE, Helton M, Lohr JA. Smoking cessation in pregnancy: a review of postpartum relapse prevention strategies. *J Am Board Fam Pract.* 2004;17(4):264-75.
3. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System; Accessed 11/5/10 at: http://apps.nccd.cdc.gov/BRFSS/.
4. Tong VT, Jones JR, Dietz PM, D'Angelo D, Bombard JM. Trends in smoking before, during, and after pregnancy - Pregnancy Risk Assessment Monitoring System (PRAMS), United States, 31 sites, 2000-2005. *MMWR* 2009;58(4):1-29.
5. Centers for Disease Control and Prevention. Tobacco Use and Pregnancy. Accessed 2/22/08 at: http://www.cdc.gov/reproductivehealth/TobaccoUsePregnancy/.
6. West Virginia Department of Health and Human Resources, Bureau for Public Health, Health Statistics Center. HSC Statistical Brief No. 4 Update Smoking: Effects on Mothers and Babies in West Virginia. May 2005.
7. West Virginia Department of Health and Human Resources, Bureau for Public Health, Health Statistics Center. West Virginia Behavioral Risk Factor Surveillance System (WVBRFSS). Accessed 11/7/10 at: http://www.wvdhhr.org/bph/hsc/statserv/BRFSS.asp.
8. Stead LF, Perera R, Lancaster T. Telephone counseling for smoking cessation. Cochrane Database Syst Rev. 2006;3:CD002850.

9. Rigotti NA, Park ER, Regan S, Chang Y, Perry K, Loudin B, Quinn V. Efficacy of telephone counseling for pregnant smokers: a randomized controlled trial. *Obstet Gynecol.* 2006;108(1):83-92.
10. beBetter Health, Inc. The West Virginia Tobacco Quitline Program 2008 Annual Report. Charleston, WV: beBetter, Inc. 2010.
11. Perry RJ, Keller PA, Fraser D, Fiore MC. Fax to quit: a model for delivery of tobacco cessation services to Wisconsin residents. *WMJ*. 2005;104(4):37-40,44.
12. United States Department of Health and Human Services. Agency for Healthcare Research and Quality. Treating Tobacco Use and Dependence: 2008 Update. Accessed 11/2/10 at: http://www.ahrq.gov/path/tobacco.htm#Clinic.
13. beBetter Health, Inc. West Virginia University Fax to Quit Project Hooked on the Quitline. Six-Month Outcome Report. August 2010.
14. Ortega-García JA, Martin M, López-Fernández MT, Fuster-Soler JL, Donat-Colomer J, López-Ibor B, et al. Transgenerational tobacco smoke exposure and childhood cancer: an observational study. *J Paediatr Child Health*. 2010;46(6):291-295.
15. Sasco AJ, Vainio H. From in utero and childhood exposure to childhood cancer: a possible link and the need for action. *Hum Exp Toxicol*. 1999;18(4):192-201.
16. West Virginia Department of Health and Human Resources, Bureau for Public Health, Division of Tobacco Prevention. Accessed 11/16/10 at: http://www.wvdtp.org/Programs/Cessation/tabid/397/Default.aspx.
17. Smoke-Free West Virginia. Accessed 11/18/10 at: http://www.smokefreewv.org/.
18. Evaluation Oversight and Coordinating Unit, West Virginia University. Smoking and Pregnancy in West Virginia: Focus Group Findings. July 2010.
19. Bentz CJ, Bayley KB, Bonin KE, Fleming L, Hollis JF, McAfee T. The feasibility of connecting physician offices to a state-level tobacco quit line. *Am J Prev Med.* 2006;30(1):31-37.
20. Wadland WC, Holtrop JS, Weismantel D, Pathak PK, Fadel H, Powell J. Practice-based referrals to a tobacco cessation quit line: assessing the impact of comparative feedback vs general reminders. *Ann Fam Med.* 2007;5(2):135-42.
21. Fiore MC, Keller PA, Curry SJ. Health system changes to facilitate the delivery of tobacco-dependence treatment. *Am J Prev Med*. 2007;33(6 Suppl):S349-56.
22. Okoli CT, Greaves L, Bottorff JL, Marcellus LM. Health care providers' engagement in smoking cessation with pregnant smokers. *J Obstet Gynecol Neonatal Nurs.* 2010;39(1):64-77.

Can Antenatal Ultrasounds Help Predict Postnatal Outcomes in Babies Born with Gastrochisis? The West Virginia Experience

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Abstract

Objective: Gastrochisis is a congenital condition resulting in significant morbidity and mortality. Multiple studies have been done to evaluate the value of prognostic indicators with conflicting results. The aim of this study was to evaluate the role of ultrasound in this condition at a single institution while limiting the provider variables that may affect neonatal outcome.

Methods: The antepartum charts of expectant mothers of affected fetuses as well as the neonatal hospital charts were reviewed at length. The cases were identified over a period of 4 years from April 1998 to February 2002. In addition, the archived photographs of ultrasounds performed on these fetuses were also reviewed and reread by two independent providers who were blinded to the outcome. Adverse neonatal outcome, including death and time to feeding (amongst many other variables) were assessed against the different ultrasound parameters including bowel thickness and dilation.

Results: 25 patients were identified in the stated time frame. Six cases had to be dropped from the final analysis due to incomplete data including the transfer of 3 babies. There were 4 neonatal deaths. The mean birth weight was 2384 grams. There was a significant association with dilation and delta dilation (defined as the difference in bowel dilation from the final ultrasound from the baseline ultrasound cutoff of 4 mm) and time to feeding, time on ventilator and hospital stay. (P< 0.005). Other ultrasound parameters were not significantly correlated with neonatal outcome.

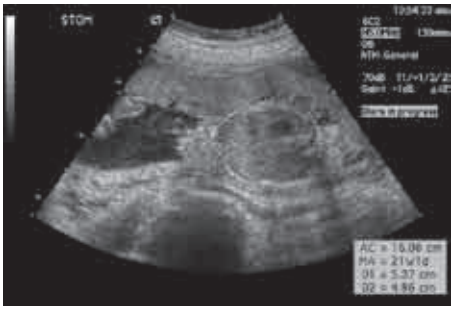
Conclusion: Most ultrasound parameters do not help prognosticate the neonatal outcome in babies affected with this condition except for dilation and delta dilation, which are strong predictors of morbidity in the post delivery period. This information may be helpful to providers and parents of affected fetuses.

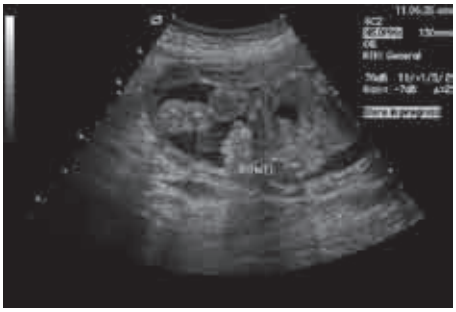
Introduction

Gastrochisis is a congenital malformation. It is an abnormality of the fetal anterior abdominal wall in which there is a full thickness defect, usually to the right of the umbilical cord insertion. (Figure 1 and 2). The defect causes abdominal viscera to herniate into the amniotic fluid. This condition is generally not associated with chromosomal anomalies of the fetus although it may be associated with other gastrointestinal abnormalities. This is an important differentiating feature between Gastrochisis and omphalocele. In addition fetuses with omphalocele have the abdominal viscera covered with a membranous sac.

The incidence of Gastrochisis is estimated to be 1.36 per 10000 births.[1] The number of reported cases has been increasing over the last twenty years.[2] This is a reflection of better diagnostic methodology, an increase in the use of ultrasound as well as a true increase in incidence. Fetuses with Gastrochisis have a higher incidence of perinatal mortality and morbidity compared to unaffected fetuses. Neonatal mortality rates of up to 7.5%[3] have been reported and up to 12.5% of affected fetuses will be stillbirths.[4]

Figures 1 and 2.





An important prognostic factor in the outcome of these fetuses is based on the condition of the bowel at the time of birth. There has been some suggestion in the literature that the fetuses with Gastrochisis can be divided into two groups based on the presence or absence of intestinal complications at the time of birth.[3] These defects can include bowel atresia, bowel perforation, bowel necrosis or volvulus. These two groups have significant differences in clinical outcomes including length of hospital stay, post surgical complications and mortality. If it is possible to predict these two

groups antenatally then a better risk assessment and prognostic tool can be used to counsel women with affected pregnancies and also possibly determine timing of delivery.

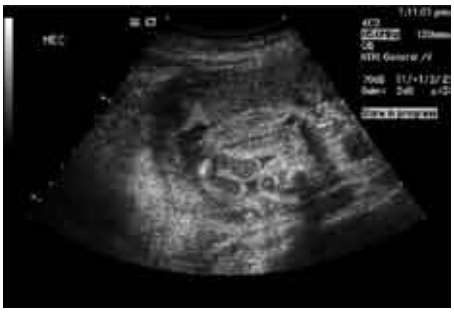
There have been various conflicting data in the literature about correlating antenatal ultrasound findings and postnatal morbidity and mortality. At many institutions opinions vary between pediatric surgeons and the obstetricians in the timing of delivery of affected fetuses. This study was conducted to evaluate one institution's experience and determine if there were any antenatal ultrasound findings that could reliably predict mortality as well as secondary outcomes of morbidity. Our database is unique because the same providers saw all patients, which has decreased the risk of variations based on provider performance. In addition, the diagnostic modalities had greatly improved during the period of the study compared to other studies in the past, possibly affecting outcome.

Materials and Methods

The West Virginia University Hospital Morgantown campus is a major referral center for fetal assessment in the tristate area of Northern West Virginia, Western Maryland and Southwestern Pennsylvania. We identified all cases of Gastrochisis managed at West Virginia University Hospital Morgantown. Most of the fetuses assessed were delivered at our hospital and transferred to the neonatal unit soon after delivery. The information on maternal demographic characteristics, pregnancy complications and intrapartum events among other variables were obtained from a review of the mother's outpatient and inpatient charts. Neonatal data was obtained from their inpatient charts. All surgeries were performed at the same hospital. Multiple variables were noted including gender, weight at birth, Apgar, timing of surgery, length of surgery, type of surgery, time on ventilator, time to feeding and complications.

The cases were identified over a period of 4 years from April 1998- February 2002. It has been the standard practice to archive ultrasound images of all studies performed at the hospital with good recordkeeping of all images. Still images were reviewed of all identified cases. Ultrasounds were performed at two separate areas in our facility. This includes the Radiology Department and in the Obstetrics clinic. All films were retrieved from the archives and were reviewed by two blinded independent examiners. One of the examiners is a board certified Radiologist specializing in

Figures 3 and 4.



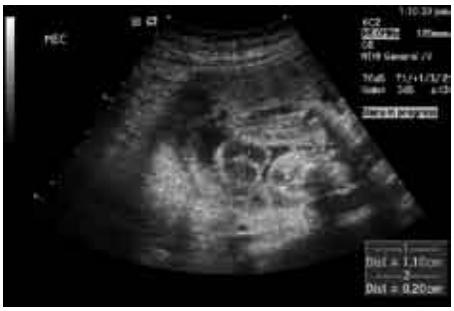


Table 1. Overall neonatal outcomes

Mean gestational age at diagnosis	18 weeks
Mean gestational age at delivery	35 weeks
Mean birth weight.	2384 grams
*Treatment of Gastrochisis	
Silo	9
Primary repair	9
Complication of Gastrochisis	
Bowel perforation	1
Intestinal atresia	1
Bowel necrosis	2
Neonatal death	4

**1 patient omitted since no repair done due to auto infarction of bowel*

Table 2. Secondary Outcomes

Mean number of days on ventilator	7 days
Mean number of days to feeding	14 days
Mean length of hospital stay	44 days

obstetric ultrasounds. The second examiner is a RDMC (Registered diagnostic Medical sonographer) ultrasonographer who has also received specialized training in high-risk obstetric ultrasounds. Both examiners were asked to review each and every ultrasound performed on these babies independently and were blinded to the outcome of the study so as to eliminate any biases. In addition, these examiners were unaware of the previous readings of these scans. The sonograms were assessed for fetal growth parameters, amniotic fluid index, diameter of the small bowel dilation and thickness of both intra-abdominal as well as extra-abdominal loops of bowel. Observations were also made on whether the stomach was dilated or not and whether the sonographer felt that the Gastrochisis was complex based on the presence or absence of bowel atresia. In addition, comments were also made about any additional findings including any anomalies.

The maximum bowel diameter was measured from inner wall to inner wall along the short views of the bowel loop at the most dilated segment of the extruded bowel, as well as the intra-abdominal bowel. The bowel wall thickness was measured from the outer wall to the inner wall of the thickest portion of the small bowel. (Figure 3 and 4) Delta dilation was also calculated as final bowel dilation minus the baseline bowel dilation (taken from the first ultrasound readings). The individual parameters were compared for the same study between the two examiners, and there was a 100% concurrence in the reading. The ultrasounds were performed using high-resolution transducer with MHz ranging between 2.5-5 MHz. The equipment used was an Acuson and GE high-resolution scanner.

The data was analyzed using a statistical package using Statistical Software (SAS Institute, Inc., Cary, NC). P values below 0.05 were considered as significant.

Results

A total of 25 cases were identified during the time frame involved. Six cases were excluded from the analysis because of incomplete data, including transfer of 3 babies thus leaving 19 infants for this review. We did not find any intrauterine deaths. The mean age of the mothers was 20 years, the mean gestational age at diagnosis was 18 weeks with a range of 15 -20 weeks and the modal parity was gravida 1. Each patient had an average of 5 ultrasound scans during their pregnancy. In 97% of cases the last ultrasound was within 2 weeks of delivery. The other 3% had their scan within the last 3 weeks prior to delivery. The mean gestational age at delivery was 35 weeks (range 34 -38 weeks). Sixty eight percent of babies were born vaginally and 32 % were delivered via C-section, most commonly due to non-reassuring fetal heart rate tracing and failure of progress. Eight were induced; nine went into preterm labor or had premature preterm rupture of membranes. Forty two percent were female fetuses and 58% were male fetuses, showing a slightly greater male predominance. Sixty three percent were found to have intrauterine growth restriction

Table 3. Comparison of neonatal outcome

Parameter	Time to feeding	#days on vent	#of hosp days
Bowel thickness	0.315 (NS)	0.227 (NS)	0.367 (NS)
Final bowel dilation	0.0230 (S)	0.376 (NS)	0.207 (NS)
Delta dilation	0.007(S)	0.259 (NS)	0.306 (NS)
Gestational age at birth	0.512(NS)	0.774 (NS)	0.696(NS)

Regression analysis T Test, (NS) not significant, (S) p value significant.
Vent, ventilator, hosp, hospital

Table 4. Comparison of neonatal outcome

Parameter	Time to feeding	#days on vent	#of hosp days
Type of Gastrochisis	0.007(S)	0.007 (S)	0.0012 (S)
Mode of delivery	0.855(NS)	0.815(NS)	0.168 (NS)

Analysis of variance, (NS) not significant, (S) p value significant.
Vent, ventilator, hosp, hospital

based on femur length and head circumference measures. There were no intrauterine deaths. The mean number of times feeds were stopped was 1.8. There were a total of 4 neonatal deaths, which is 21%. (Table 1). This is higher than that quoted in literature. One neonate died of short bowel/vanishing bowel syndrome, two with necrotizing enterocolitis, and one with sepsis. Sixty three percent of our patient's fetuses were diagnosed with intrauterine growth restriction (IUGR). Secondary outcomes were also tabulated with results shown in Table 2.

One pregnancy was associated with an increased amniotic fluid index, defined by total fluid level of 24 cm or more. Potential relationships between the following parameters were analyzed: whether the appearance of bowel affected outcome, if the interval from birth to surgery affected outcome and finally whether the length of surgery affected outcome. No significant difference in neonatal outcomes was found with bowel dilation or with thickening. However the trend was suggestive of an adverse event with progressively thicker bowel. Our study size limits further evaluation of this. There was no correlation with any other ultrasound finding. The only statistically significant outcome was associated with delta dilation (which is defined as the final ultrasound bowel dilation minus the baseline ultrasound bowel dilation) as well as type of Gastrochisis (complex vs. simple) (Tables 3 and 4).

Discussion

This study looked at the role of ultrasound in predicting the newborn outcome in babies born with Gastrochisis. It is a unique database in that the cases are identified in a short time frame compensating the variation of diagnosing and management that can vary with time. The same obstetrical, radiological, surgical and neonatal providers have been involved in all these cases which again will limit the variations that occur based on individual surgical training, skills or experience. In addition, all cases were handled at a single facility. The "power" of our study from a statistical perspective is limited regarding

several "association" parameters. We did not include cases beyond 2002 to increase the study "N" as the team of physicians involved in the care of these patients changed after 2002. Nonetheless the current study has confirmed some of the findings in the literature but refuted other reports in the literature. Penman et al[5] found that Gastrochisis was more common in women younger than 20 years of age. Our study confirmed this with the mean age of mothers being at 20 years. We did not find any intrauterine deaths, which is different than the mortality rates of 5-12% noted in the literature.[6-8] This difference may be because of the small number of cases in our population.

The primary outcome was mortality. Although a trend was noted of mortality with increasing bowel thickness, survival was not associated with bowel thickness even after the data had been controlled for gestational age as no statistical significance was achieved probably due to the small sample size.

There have been some reports in the literature that IUGR has been overestimated in this group because of the smaller abdominal circumference. We omitted this measurement in our estimation and found that a significant number of babies were still born with intrauterine growth restriction. The current literature notes the presence of growth restriction in Gastrochisis babies as high as 24-67%.[7,9] This has been hypothesized to be secondary to protein loss from the exposed bowel.[10] This ultimately affects the outcome of these neonates. Our numbers are similar to those reported in the literature.

We also looked at secondary outcomes (Table 2) as a marker for morbidity. There was no difference seen for bowel thickness to time to feeding, the number of days on the ventilator or the total hospital length of stay. Piper et al[11] reported that bowel thickness did affect time to feeding but we did not note that in our study. Similarly no difference was seen in dilation or delta dilation to number of days on ventilator or length of hospital stay. There was a significant association between delta dilation (at 4 mm) to time to feeding (Table 3) $p < 0.007$. There was no association between gestational age at birth or mode of delivery to time to feeding, length of hospital stay or number of days on ventilator. An earlier diagnosis did not affect outcome, nor did the visual appearance of the bowel at the time of birth. There was however, a significant association between the type of Gastrochisis and the length of hospital stay as well as the number of days on ventilator and time to feeding. Fetuses with complex Gastrochisis, defined as those with this condition in addition to bowel atresia, had a longer hospital stay $p<0.001$, had more days on the ventilator $p<0.007$, and time to feeding was also significant at $p<0.007$ (Table 4).

Payne et al had similar results for time to feeding.[12] The type of repair had no bearing on the survival outcome but primary repair was better than silo repair as these babies spend about half the time on the ventilator then the babies with the silo repair $p<0.06$.

The aim of this study was to identify critical bowel thickness or dilation that can reliably predict post delivery outcomes. With the small number of subjects that we have, this has been difficult to demonstrate. A review of the literature has shown that various parameters have been studied including the two that we used.[13] Various cutoff points for the maximum bowel diameter have been explored with conflicting results.[13,14]

One of the studies analyzed 45 patients over 8.5 years and utilized a cutoff of 17mm but did not find any relationship between thickness or dilation and outcome.[15] That study did report a correlation of the outcome with the presence of polyhydroamnios. The one patient in our study that had polyhydroamnios did have a poor outcome with a neonatal demise. There was an association between the bowel thickness and time to feeding in a study conducted by Langer et al.[16] This was however not statistically significant.

In our study no correlation was found between time to feeding and bowel thickness. But there was a significant association between final dilation $p< 0.0230$ and delta dilation $p< 0.0077$ to time to feeding. This suggests that an earlier delivery may be warranted. An evaluation of bowel appearance antenately on ultrasound is too variable to be used as a reliable predictor of neonatal outcome.

Since gastroschisis exposes the fetal intestines to the amniotic fluid and are unprotected during pregnancy, there is an increased risk for third trimester complications, such as bowel dilatation, decreased fetal growth and amniotic fluid volume, preterm delivery, as well as the slight risk of fetal death. For these reasons, close surveillance of gastroschisis in the third trimester using a combination of sonography and fetal surveillance testing (biophysical profile, Doppler ultrasound, amniotic fluid volume) is important to monitoring fetal well being and determining the appropriate time of delivery.

Gastroschisis repair or surgical correction of gastroschisis involves the return of the extra-abdominal bowel back into the abdominal cavity followed by abdominal wall closure. This can either be performed with an immediate primary gastroschisis repair, or more commonly, a staged repair approach, depending upon postnatal assessment of the condition of the exposed bowel. Primary gastroschisis repair entails reduction of the bowel and complete abdominal wall closure in one

operation. Prenatal exposure of the fetal intestines to the amniotic fluid can be associated with bowel dilatation and inflammation, thus making primary repair not feasible.

The staged approach to gastroschisis repair begins at the time of delivery, when the exposed abdominal contents are placed in a protective covering for the infant transfer to the Newborn/ Infant Center. Upon admission to the intensive care, silastic sheeting, commonly referred to as "silo," is placed around the herniated bowel. The silo is then reduced daily at the bedside until the abdominal contents are level with the skin. The infant undergoing gastroschisis repair is then taken to the operating room for final closure. It is not uncommon to require breathing/ventilatory assistance during this period of time. Although the abdomen is closed after the gastroschisis repair, it takes time for the intestines to recover from gastroschisis. For this reason, first feedings are provided intravenously. Once bowel function returns, as evidenced by the passing of a bowel movement, feedings via a naso-gastric (NG) tube are slowly initiated while IV feeds continue. Nasogastric feeds are slowly increased, as tolerated, and oral feeding is introduced. This is a gradual process, and infants who have undergone gastroschisis repair might experience occasional setbacks, including need for bowel rest or additional surgery.

Conclusion

Complex Gastrochisis affects morbidity and mortality but bowel dilation and thickness does not affect mortality. The change in dilation can affect the morbidity. Given the paucity of the numbers enrolled and therefore affecting the final analysis of the results (allowing for statistical significance) it may be of benefit to extend the study to include the subsequent 5 years.

References

1. Curry JI, McKinney P, Thorton JG, Stringer MD. The aetiology of Gastrochisis; *Br. J Obstet Gynaecol* 2000; 107:1339-1346.
2. Holland AJ, Walker K, Badawi N. Gastroschisis: an update. Pediatr Surg Int. 2010 Sep; 26(9): 871-8.
3. Molik KA, Gingalewski CA, West KW, Rescorla FJ, Scherer LR, EngumSA, Grosfeld JL. Gastroschisis: a plea for risk categorization. *J Pediatr Surg* 2001; 36: 51-55
4. Byron-Scott R, Haan E, Chan ABower C, Scott H, Clark K. A population based study of abdominal wall defects in South Australia and Western Australia. *Paediatr Perinat Epidemiol* 1998; 12: 136-151
5. Penman DG, Fisher RM, Noblett HR, Soothill PN. Increase in the incidence of gastroschisis in the South West of England in 1995. *Br. J Obstet Gynaecol* 1998; 105:328-331
6. Burge DM, Ade-Ajayi N.Adverse outcome after prenatal diagnosis of gastroschisis: the role of fetal monitoring. *J Pediatr Surg* 1997; 32: 441-444.
7. Raynor BD,Richards D.Growth retardation in fetuses with gastroschisis. *J Ultrasound Med* 1997; 16: 13-16
8. Lindham S. Omphalocele and gastroschisis in Sweden 1965-1976. *Acta Paediatr Scand* 1981; 70: 55-60
9. Crawford RAF, Ryan G, Wright VM, Rodeck CH. The importance of serial biophysical assessment of fetal wellbeing in gastroschisis. *Br J Obstet Gynaecol* 1992; 99: 879-902
10. Caroll SGM, Kuo PY, Kyle PM, Soothill PW. Fetal protein loss in gastroschisis an explanation of associated morbidity. *Am J Obstet Gynecol* 2001; 184: 1297-1301
11. Piper HG, Jaksic T The impact of prenatal bowel dilation on clinical outcomes in neonates with gastroschisis. *J Pediatr Surg.* 2006; 41(5): 897-900.
12. Payne NR, Pfleghaar K, Assel B, Johnson A, Rich RH. Predicting the outcome of newborns with gastroschisis. *J Pediatr Surg.* 2009 May 44(5): 918-923.
13. Mears AL, Sadiq JM, Impey L, Lakhoo K. Antenatal bowel dilatation in gastroschisis: a bad sign? *Pediatr Surg Int.* 2010 Jun 26(6): 581-8
14. Garcia L, Brizot M, Liao A, Silva MM, Tannuri AC, Zugaib M. Bowel dilation as a predictor of adverse outcome in isolated fetal gastroschisis. *Prenat Diagn.* 2010 Oct; 30(10): 964
15. Japaraj RP, Hockey R, Chan FY. Gastroschisis: can prenatal sonography predict neonatal outcome? *Ultrasound Obstet Gynecol* 2003; 21: 329-333
16. Langer JC, Khanna J, Caco C, Dykes EH, Nicolaides KH. Prenatal diagnosis of gastroschisis: development of objective sonographic criteria for predicting outcome. *Obstet Gynecol* 1993; 81: 53-56.

Congenital Absence of Inferior Vena Cava with Idiopathic Deep Vein Thrombosis in an Adult

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Introduction

Deep vein thrombosis (DVT) is rare in younger patients, with a prevalence of 1:10,000.[1] In this patient population congenital absence of inferior vena cava (CAIVC) is an anomaly which has been recognized as a rare inherited risk factor for DVT.[2] Such patients are often asymptomatic and are diagnosed incidentally.

In a young patient with a new DVT and no risk factors, it is important to consider congenital anomalies in the differential diagnoses. We describe a case of CAIVC and condition that is often underreported due to lack of diagnostic accuracy.

Case report

A twenty-year-old athletic male with no relevant medical history except smoking noted gradual onset of lower back pain and bilateral lower limb swelling for the past four weeks. On arrival he was wheelchair bound. He had no family history of clotting disorders, congenital defects or autoimmune diseases. After admission he underwent extensive investigation including a hypercoagulopathy panel, *prothrombinII gene mutation, Methylenetetrahydrofolate reductase(MTHFR) gene mutation, homocystein, factorV leiden mutation, Beta2 glycoprotein IgA/IgM, anticardiolipin IgG/IgM, lupus anticoagulant IgG/IgM, protein C&S antigen/functional levels, CD55&CD59 antibodies and antithrombinIII antibodies*. These tests were all negative. Subsequently a Doppler ultrasound of the lower limbs revealed extensive bilateral common femoral, superficial femoral, popliteal, posterior tibial and greater saphenous vein thromboses.

A computed tomography (CT) scan of the abdomen/pelvis with intravenous contrast revealed thrombosis of the distal inferior vena cava (IVC) and iliac veins with a congenital absence of suprarenal and intrahepatic segments of the IVC (Fig1&2) with extensive collaterals and prominent ascending lumbar, perivertebral, azygous and hemiazygous venous systems. The patient was started on coumadin for long term anticoagulation. The patient was followed up in 3 months and subsequently six months after hospitalization with complete resolution of symptoms and bilateral lower limbs swelling.

Discussion

DVT is rare in the young. It may occur due to underlying acquired

Figure 1.
CT chest abdomen pelvis sagittal view: absent segment of IVC (arrow).

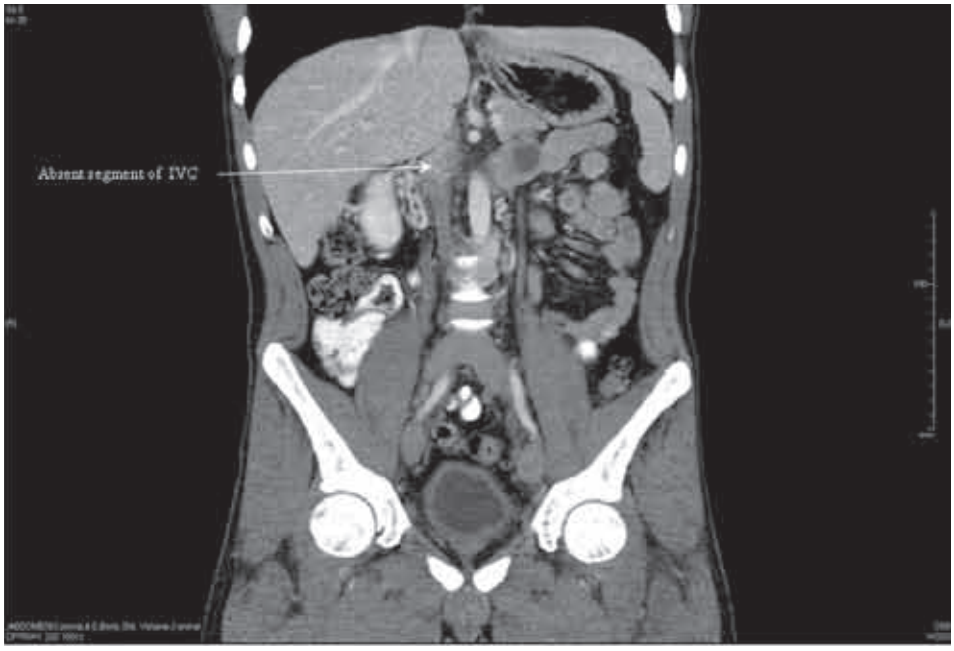


Figure 2.
CT chest abdomen pelvis coronal view: absent IVC (arrow)

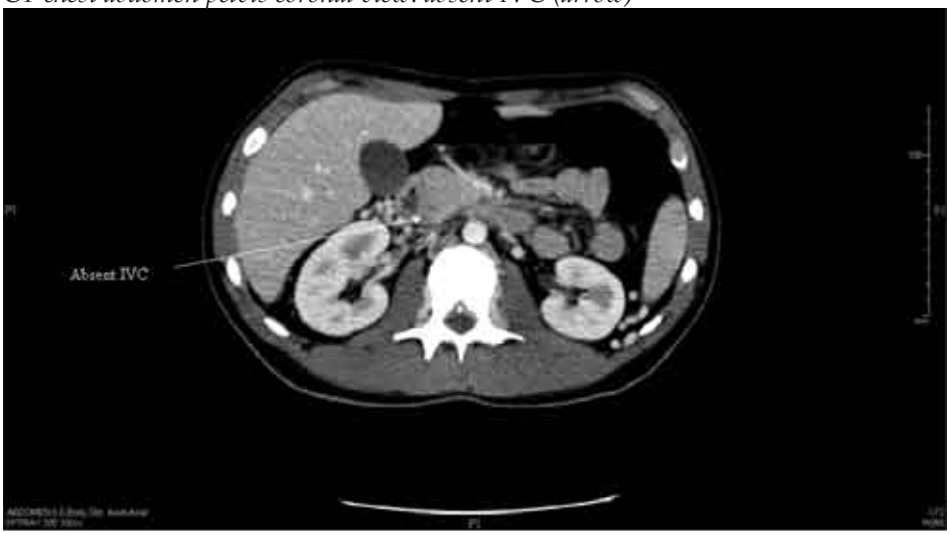
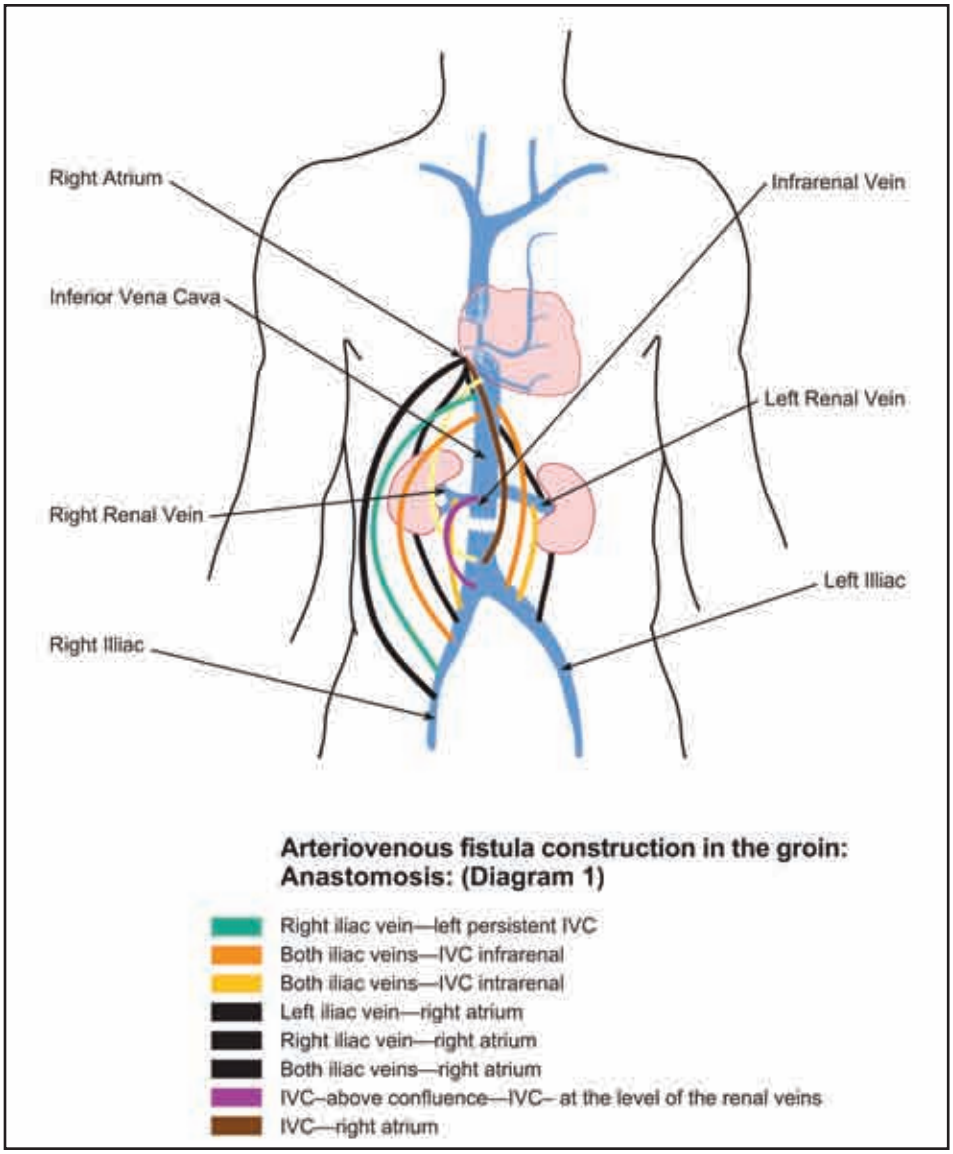


Diagram 1.
Arteriovenous fistula construction in the groin: anastamoses with color codes.



or hereditary risk factors. CAIVC is one such rare genetic risk factor.[3,4]

The development of the infra-hepatic-IVC begins between 6-12 weeks of gestation. It involves a complex process comprising 3-pairs of embryogenic veins: posterior cardinal (iliac and confluent), subcardinal (renal and hepatic) and supracardinal (prerenal). Developmental disruptions may result in several variants of partial or complete IVC anomalies.[5]

CAIVC is often reported incidentally since most patients are asymptomatic due to the presence of extensive collateral veins.[6] Patients are more likely to be symptomatic in the presence of other associated anomalies such as congenital heart disease, asplenia, polysplenia or inversion of the bowel.[7]

The diagnostic accuracy of B-mode ultrasonography in CAIVC is limited secondary to its inability to evaluate noncompressible abdominal veins (especially in the retroperitoneal-space).[8] CT scan is a better screening method to better visualize the retroperitoneal space and collateral circulation.

Treatment for patients with CAIVC and DVT is still debatable. Surgical benefit was reported in only two cases.[7,9] Surgical Treatment for Agenesis of the Vena Cava is performed using various surgical approaches with thoraco-abdomino-inguinal incision (such as abdomino-inguinal, thoraco-abdominal and abdominal incision) and constructing arteriovenous fistula in the groin as described in (Diagram 1) creating various anastomoses:

i) Right iliac vein--left persistent IVC
i) Both iliac veins-- IVC infrarenal
ii) Both iliac veins-- IVC intrarenal
iii) Left iliac vein—right atrium
iv) Right iliac vein—right atrium

v) Both iliac veins—right atrium

vi) IVC-above confluence—IVC- at the level of the renal veins

vii) IVC—right atrium

The major complications are related to peri-op and post-op bleeding with good long term outcomes. The current recommendation is conservative medical management with lifelong anticoagulation using warfarin.[10,11]

Conclusion

In a young patient with DVT and no obvious risk factors, a Doppler ultrasound may not be sufficient. CT scan of the abdomen/pelvis may be indicated as a screening test to rule out congenital IVC anomalies.

Reference

1. Anderson FA,Wheeler HB,Goldberg RJ,Hosmer DW,Patwardhan NA, Jovanovic B,Forcier A,Dalen JE.A population based perspective of the hospital incidence and case-fatality rates of deep-vein thrombosis and pulmonary embolism,The Worcester DVT study. *ArchInternMed.* 1991 May;151(5):933-8.
2. Rosendaal FR.Venous thrombosis:a multicausal disease. *Lancet*.1999 Apr 3;353(9159):1167-73.
3. Ruggeri M,Tosetto A,Castaman G,Rodighiero F:Congenital absence of the inferior vena cava:a rare risk factor for idiopathic deep-vein thrombosis. *Lancet*. 2001 Feb10; 357(9254):441.
4. Chee YL,Dominic J,Watson CG,Watson HG:Inferior Vena Cava malformation as a risk factor for deep-venous thrombosis in the young. *British Journal of Haematology*. 2001:114:878-880.
5. Bass JE,Redvine MD,Kramer LA,Huynh PT,Harris JH:Spectrum of Congenital anomalies of the IVC:cross-sectional imaging findings. *Radiographics*. 2000 May-Jun;20(3):639-52.
6. Z Koc,MD, S Ulusan,MD, L Oguzkurt,MD and E Serin,MD: Symptomatic interrupted IVC:report of a case presenting with haematochezia. *BrJRadiol.* 2007Jun;80(954):e122-4.
7. Arash Mohammadi Tofigh,R. Coscas,F. Koskas and E. Kieffer:Surgical Management of Deep Venous Insufficiency Caused by Congenital Absence of the Infrarenal-IVC.*Vascular and Endovascular Surgery*. March 1,2008;42(1):58-61.
8. Javaid Iqbal,Eswarappa Nagaraju :CAIVC and thrombosis:a case report. *JMedCaseReports*. 2008 Feb 12;2:46.
9. Dougherty MJ,Calligaro KD,DeLaurentis DA.CAIVC presenting in adulthood with venous stasis and ulceration:a surgically treated case. *JVascSurg.* Jan 1996; 23 (1):141-6.
10. Yun SS,Kim JI,Kim KH,et al.DVT caused by CAIVC, combined with hyperhomocysteinemia. *AnnVascSurg.* 2004;18:124-9.
11. T.A. Sagban. Surgical Treatment for Agenesis of the Vena Cava: A Single-Centre Experience in 15 cases. *Eur J Vasc Endovasc Surg.* 2010; 40: 241-245.

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Obstructive Uropathy Secondary to Rectus Sheath Hematoma

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Abbreviations: *RSH* – Rectus sheath hematoma, *DVT* – Deep vein thrombosis, *PE* – Pulmonary embolus, *OSH* – Outside hospital, *INR* – International normalized ratio, *BUN* – Blood urea nitrogen, *Cr* - Creatinine, *CT* – Computed tomography

Abstract

Rectus sheath hematoma (RSH) is uncommon and is often reported in the setting of anticoagulation or trauma. Typically RSH presents with localized or diffuse abdominal pain and a fixed abdominal wall mass, however, various presentations and complications have been reported depending on the setting and extent of the hematoma. We report a case of a rapidly expanding RSH causing obstructive anuria and hydronephrosis in addition to a review of literature on this rare presentation of RSH.

Introduction

Rectus sheath hematoma is a collection of blood within the abdominal wall musculature or fascia. RSH frequently presents with acute abdomen in the setting of anticoagulation or trauma, but various presentations have been reported. Symptoms can range from slight abdominal pain to hypovolemic shock. Although uncommon, RSH is important to consider in the differential for acute abdomen as a patient may clinically deteriorate and become hemodynamically unstable if bleeding persists. We report a case of a rapidly expanding RSH causing obstructive anuria and hydronephrosis in addition to a review of literature on this rare presentation of RSH.

Case Report

An obese 58-year-old woman on day ten of Coumadin therapy for deep vein thrombosis (DVT) and pulmonary embolus (PE) presented with an acute-onset of severe lower abdominal pain, nausea, and urge to void hours after a bout of coughing. Prior to transfer, exam at an outside hospital (OSH) demonstrated elevated blood pressure, tachycardia, diffuse abdominal tenderness, distension, and negative for a palpable mass. Laboratory evaluation showed an International Normalized ratio (INR) of 3.3, low hematocrit, and a blood urea nitrogen (BUN) and creatinine (Cr) of 25 and 2.1, respectively. She had minimal urine output with moderate blood and protein. CT scan with contrast of the abdomen and pelvis revealed a Grade 3 left rectus muscle hematoma contiguous into the pelvis, displacing the bladder superiorly and posteriorly to the right.

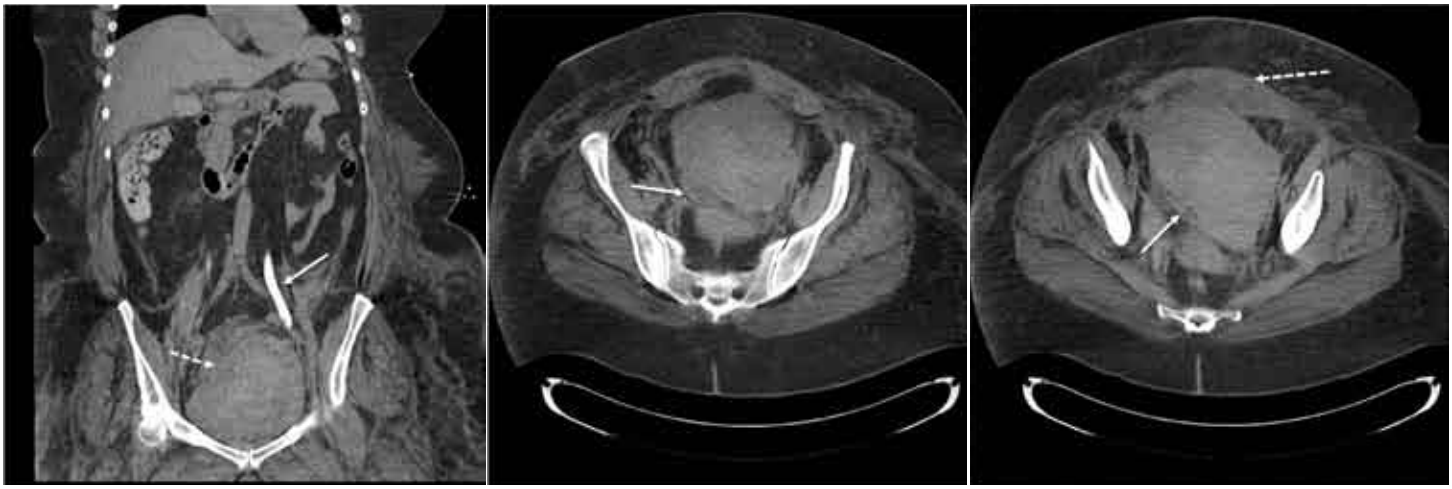
On hospital day 2, the patient abruptly stopped producing urine per her Foley catheter. Repeat CT scan showed an enlarging RSH compressing the urinary bladder and left ureter as well as increased hydronephrosis and concern for intravesicular hematoma (Fig 1a-1c). Bladder irrigation removed minimal blood and urine mix. In view of persistent anuria and compressive hematoma, INR was optimized for laparotomy, yielding 1300 mL of clot from preperitoneal space and leading to subsequent improvement of symptoms. Immediately after evacuation, roughly 200 mL of concentrated urine was put out. Urine output returned to normal following surgery and foley catheter was removed with normal voiding pattern. Follow up images prior to discharge revealed a resolved hydronephrosis on renal ultrasound.

Discussion

RSH is rare and does not typically require intervention, however, it remains an important diagnosis in patients with acute abdomen and recent history of anticoagulation, pregnancy, trauma, or severe coughing[1,2]. An expanding RSH can lead to hemodynamic instability or compression of surrounding tissues and significant consequences as in the case reported here. In this patient, sudden expansion was significant enough to cause ureteral obstruction and hydronephrosis.

Similar reports of urinary complications with RSH are few. A thorough literature search of RSH with oliguria, anuria, or hydronephrosis yielded only five cases from 1961 and 2011.[3-7] Excluded from our discussion are the report written in French and cases of retroperitoneal hematomas causing urine obstruction that did not describe the rectus sheath as the source of bleed. Of the four remaining reports three of the patients had been anticoagulated. These three

Figure 1.
Computed tomography scan of pelvis and abdomen showing hydronephrosis of left ureter (a, straight arrow), rectus sheath hematoma (a, dashed arrow), compressed bladder (b, straight arrow), Foley catheter in bladder (c, straight arrow), Rectus sheath hematoma attachment at abdominal wall (c, dashed arrow).



patients were all female and ranged in ages between 54 to 59-years-old. All patients, including our case, presented with abdominal pain and tenderness, however the case we report is unique in that this patient did not present with a palpable mass on physical exam. Patients either had an ultrasound, CT scan or other film series to aid in diagnosis. RSH caused obstructive oliguria and bilateral hydronephrosis in these patients. The RSH in our case resulted in anuria and unilateral hydronephrosis. Two of the reported cases were managed conservatively while the other two required surgical intervention.

A RSH might be expected to expand inferiorly through fascial planes to the pubic symphysis or to the prevesicular space, especially if below the arcuate line and between the transversalis fascia and peritoneal planes. If large enough, a RSH can lead to compression of ureters and the bladder with the consequence of urinary obstruction and hydronephrosis. Grading of RSH has previously been described by Berná et al.[8]

The rapid progression to obstructive anuria and hydronephrosis in the cases discussed here demonstrates the importance of recognizing RSH and its severity and to manage it appropriately. Fitzgerald et al suggest that RSH may be increasingly more common with an aging population and growing number of people on anticoagulation therapy. Despite its infrequency, RSH is important to consider in the differential for acute abdomen as a patient may clinically deteriorate from complications of an expanding hematoma that may mimic several conditions and confound the diagnosis. Though few cases have been reported, it appears that elderly females with previous pregnancies, poor abdominal tone, obesity and those recently started on anticoagulation have a greater likelihood of developing type three RSH leading to medical attention.

Conclusion

Rectus sheath hematoma though routinely benign, may present with severe complications such as hemorrhagic shock or obstructive anuria in occasional cases. Recognition of such complications with sudden deterioration in clinical presentation is critical to identify more commonly in type III hematoma. Elderly postmenopausal women with previous pregnancy who have been initiated on anticoagulation therapy are at increased risk of such a complication.

References

1. Cherry WB, Mueller PS: Rectus sheath hematoma: review of 126 cases at a single institution. *Medicine*. 2006;85(2)105-110.
2. Berná JD, Zuazu I, Madrigal M, García-Medina V, et al: Conservative treatment of large rectus sheath hematoma in patients undergoing anticoagulant therapy. *Abdom Imaging*. 2000;25(3):230-234.
3. Kaden WS, Friedman EA: Obstructive uropathy complicating anticoagulant therapy. *N Engl J Med.* 1961;265:283.
4. Reig RC, Vila BJ, Ahmad WA, et al: Infrequent cause of bilateral obstructive uropathy. *Actas Urol Esp.* 1992;16(5)420-421.
5. Toyonaga J, Tsuruya K, Masutani K, et al: Hemorrhagic shock and obstructive uropathy due to a large rectus sheath hematoma in a patient on anticoagulant therapy. *Intern Med.* 2009;48()2119-2122.
6. Wakeman R, Rainsbury RM. An unusual cause of bilateral ureteric obstruction. *Br J Surg.* 1986;73(24)623.
7. Zalar JA, McDonald JH. Ureteral obstruction and vesicle compression secondary to hematoma of the rectus abdominis muscle. *J Urol.* 1969;102(1)47-48.
8. Berná JD, Garcia-Medina V, Guirao J, Garcia-Medina J. Rectus sheath hematoma: diagnostic classification by CT. *Abdom Imaging.* 1996;21(1):62-4.

2013 Legislative Briefs

Protecting Athletes who Suffer Concussions on the Playing Field

POSITION: The WVSMA supports enacting state legislation to require appropriate safeguards for athletes who suffer concussions by requiring annual training for coaches and stipulating terms and conditions for return-to-play protocols, and also amending state legislation to provide liability protection and/or immunity for health care providers involved in athletic events.

ISSUE: Concussions are one of the most commonly reported injuries in children and adolescents who participate in sports, and the risk of catastrophic injury or death increases significantly if the concussion is not properly evaluated and managed.

The issue gained widespread attention in 2006 after a 13-year-old named Zachery Lystedt sustained a concussion during a football game. The boy returned to play after a short break and then became severely ill. After the game he had emergency brain surgery, and he is now confined to a wheelchair and has limited abilities. Zachery's home state of Washington enacted concussion legislation in his honor in 2009, and, since then, 40 other states have followed suit.

Some of the important aspects of an effective concussion management protocol include the following:

1. Athletes and parents should become informed about the risks associated with concussions.
2. Coaches should complete annual training on brain injury recognition and return-to-play protocols.
3. Any athlete suspected of sustaining a concussion should be removed from the game and not allowed to return to play until after being evaluated by an appropriate health care provider with specific training in concussion management and receiving written clearance.

In association with concussion management legislation, the WVSMA also supports modifying state law to increase liability protection or immunity to health care providers who offer medical services at athletic events. This protection is important so that volunteers are not discouraged from offering emergency services.

Current West Virginia law, enacted in 2012, stipulates that volunteer team physicians who render services at school athletic events are liable for civil damages to the limits of their own professional liability insurance policy. The WVSMA recommends that the legislature should amend existing law regarding state insurance for school employees to specify that the Board of Risk and Insurance Management (BRIM) also provides liability protection for school volunteers.

In addition, the WVSMA recommends amending current state law regarding aid to accident victims (the so-called "Good Samaritan Law"). Current law states that anyone, including health care practitioners, who render aid in good faith at the scene of an accident or crime is immune from civil liability. The WVSMA recommends that this law should be amended to include any medical emergency, and should specify that "scene of an accident" also includes youth athletic events.

Protecting Against a Healthcare Provider Tax

POSITION: The WVSMA applauds the completion of the phase-out of the healthcare provider tax! We strongly encourage the Legislature to reject any proposal to reinstate a healthcare provider tax in the future.

ISSUE: The healthcare provider tax, imposed in 1993, was onerous and widely considered a burden on the health care provider community. In 2001 the Legislature passed a bill initiating the repeal of this tax on all individual practitioners through a ten-year phase out. As a result, on July 1, 2010 the tax on all individual health care practitioners, including physicians, was eliminated.

The WVSMA thanks the Legislature for their foresight in the passage of this phase-out and for their fortitude in continuing down the path of repeal. The WVSMA strongly recommends that no similar taxes be considered in the future.

Addressing Substance Abuse: Balancing Treatment and Prevention

POSITION: The WVSMA supports policies that discourage diversion of prescription drugs and that facilitate treatment opportunities for individuals suffering from substance use disorders. Such policies must be balanced with policies that promote the physician's ability to provide comprehensive and compassionate care, and an individual's ability to access appropriate treatment.

ISSUE: Substance use disorders are a significant problem in the United States and in West Virginia. Recent news reports have highlighted the growing problem with prescription drug diversion, and this is an epidemic affecting not only adults but also our children and teens. Although the WVSMA recognizes the importance of policies that prevent substance abuse and prescription drug diversion through law enforcement mechanisms, we also recognize that physicians have a responsibility to provide appropriate treatment to patients, and policies should not interfere with their ability to practice good medicine. Policies should not focus on requiring physicians to be watchdogs for potential drug abusers because this could deter patients from seeking help or treatment.

With the recognition of the problems associated with prescription drug diversion, misuse and addiction in West Virginia and the under-

standing that it is the physician's responsibility to help lead the effort to address this epidemic, the WVSMA supported the enactment in 2013 of SB 437, some of which was based on WVSMA led policy recommendations announced in 2011.

Ensuring Healthcare Provider Transparency

POSITION: The WVSMA supports legislation to ensure transparency regarding the education training and licensure of healthcare providers.

ISSUE: Patients are confused about the differences among various types of healthcare providers. Currently, patients mistake medical doctors with non-physician providers, and they do not know that certain medical specialists are physicians. The WVSMA believes that patients need increased clarity and transparency in healthcare.

Confusion among patients about who is and who is not qualified to provide specific patient care undermines the reliability of the healthcare system and can put patients at risk. To help ensure patients can answer the simple question "Who is taking care of me?" the WVSMA believes that all healthcare professionals – physicians and non-physicians – should be required to accurately and clearly disclose their training and qualifications to patients.

Regulating the Rental Network PPO Market

POSITION: The WVSMA supports legislative initiatives to increase the transparency and fairness of rental network PPO activity.

ISSUE: In most states, physicians have little control over how their managed care contracts are marketed, leaving them vulnerable to unauthorized discounts in payments for their services. The lack of regulatory oversight in the Preferred Provider Organization (PPO) industry has resulted in the proliferation of entities that are engaged in the lucrative business of developing health care provider panels and then leasing the panels and associated discounts to various entities including but not limited to third party administrators acting on behalf of a self-insured employer or managed care organization that does not have a physician network in a particular market. These entities are often called "rental network PPOs".

The WVSMA supports legislation to advance the NCOIL Rental Network Contract Arrangements Model Act, which aims to implement transparent practices. Regulation of the secondary rental network, including restricting the number of times a rental network discount can be sold, is necessary to ensure that this unfair proliferation of physician contract violations ends.

Addressing Healthcare Practitioner Scope of Practice Expansions

POSITION: The WVSMA opposes the scope of practice expansion of non-physician practitioners without the appropriate education, training and supervision.

ISSUE: Every year, in nearly every state, non-physician practitioners lobby for expansion of scope of practice to gain prescriptive and independent practice rights that were once the sole domain of physicians. The WVSMA recognizes the inevitability of scope of practice overlap. While some scope expansions are appropriate and beneficial to patients, many are unwarranted intrusions into the physician practice of medicine. The health and safety of patients are threatened when non-physician practitioners are permitted to perform services that are not commensurate with their education, training and experience.

Determining whether a specific healthcare profession is capable of providing the proposed care in a safe and effective manner is of paramount interest and should be done in a deliberate manner not under political pressure. The WVSMA does support collaborative arrangements with nurse practitioners, physician assistants, pharmacists and radiologist assistants. Through such collaboration, patient access and quality care can be achieved without threatening patient safety.

Protecting Medical Liability Reform Laws

POSITION: The WVSMA strongly maintains the need to preserve the integrity of the Medical Professional Liability Act and to protect against any threats to erode the current statute.

ISSUE: Ten years ago West Virginia's healthcare system was spiraling into a severe crisis. The lack of affordable and available medical liability insurance forced many physicians to either restrict the services they offer, move their medical practice out of state or quit practicing altogether. Faced with the reality that West Virginia's healthcare system was on the verge of collapse, the Legislature responded by passing two rounds of medical liability reform legislation.

First in 2001, the Legislature passed HB 601, which included numerous measures to help put the medical liability insurance market back on track. In 2003 the Legislature once again addressed the crisis with the passage of HB 2122, and was the first comprehensive medical liability reform that had passed in West Virginia in over 20 years and placed West Virginia at the forefront of most states in regard to such reform laws. The new law included a $250,000 non-economic damages cap, a $500,000 trauma cap, collateral source offset, elimination of joint liability, creation of a patient injury compensation fund, and more stringent medical expert witness requirements. Additionally, and critically important, the legislation provided the revenue and mechanism for the creation of a physicians' mutual insurance company, a West Virginia based insurer which is owned and operated by its policyholders.

With this said, long term stabilization of the medical liability insurance market has been hinged upon whether the West Virginia Supreme Court of Appeals would uphold the caps on damages as constitutional. In June of 2011 the Court ruled, in a 4 to 1 decision, to do just that in the MacDonald v. City Hospital case. This ruling will go far, securing further stabilization of the market.

Supporting State Healthcare Reform Initiatives

POSITION: The WVSMA supports efforts to achieve healthcare reform in West Virginia.

ISSUE: West Virginia, like the rest of the nation, is faced with the serious threat of rising costs in health insurance, decreasing availability of insurance and concerns with chronically ill patients and a progressively unhealthy population. As the federal government is currently engaged in the implementation of health system reform and the states are looked upon to execute the details, the WVSMA believes the following principles should be integral to all initiatives that are considered:

Physician-Patient Relationship – Reform initiatives must preserve the inviolability of the physician-patient relationship.

Leadership – Physicians must be at the center and provide the leadership in planning and implementation of innovations in the healthcare delivery system.

Scope of Practice – Care delivery models that involve expansion of the scope of practice for non-physician must not expand any scope of practice beyond each practitioner's respective professional category.

Funding – Reform initiatives and pilots must be accompanied by adequate funding so that physicians are not required to absorb the additional overhead.

Evidence – New healthcare delivery models and other reforms to the system must be continually evaluated for their impact on patient outcomes based upon scholarly analysis and evolving medical evidence.

Additionally, the following core components of reform must be considered:

Patient-Centered Medical Home

In order to appropriately address the chronic healthcare needs of our patients a move toward the patient-centered medical home is necessary. The fundamental principle that a medical home is "physician" led cannot be underscored enough.

Wellness and Prevention

As West Virginia leads the nation in unhealthy behaviors (tobacco use, drug use) and lifestyles (obesity) it is critical that a core component of any healthcare reform address these issues.

Health Information Technology

Encouraging the use and supporting the expansion of electronic medical records and other health information technologies is critical to reforming West Virginia's healthcare system.

Medicaid Expansion

WVSMA strongly supports fully funding the West Virginia Medicaid program to provide appropriate reimbursement to healthcare providers for their services. Many physicians must refuse to accept Medicaid patients or limit the number they treat because of the program's inadequate reimbursements. To help ensure continued access to medical care and to reduce cost-shifting to the private sector, the WVSMA supports responsible initiatives that help secure funding to sustain the Medicaid budget.

Research and Education

Critical to success is a process that helps to answer the question of whether the reforms are what the public needs or better yet are tailored in a fashion that will lead to successful outcomes.

Improving West Virginia's Perinatal Health

POSITION: The WVSMA supports initiatives to improve the health of pregnant women and children in West Virginia.

ISSUE: The health of West Virginia's babies has a tremendous impact on the state's economy, workforce development and family well-being. Because of the declining status of the health of WV mothers and babies the Perinatal Partnership was formed to address these needs and the WVSMA has been an active member in their work. The Partnership and its partner physicians, hospitals, nurses, and certified nurse midwives have begun quality initiatives to improve the State's poor rates for pre-term birth, primary C-sections, vaginal births after cesarean section (VBAC), and low birth weight infants.

The WVSMA, along with the WV Perinatal Partnership, supports and recommends the following policies to further the efforts on improving perinatal wellness. By working together, we can make sure that the 21,000 babies born each year in West Virginia and their mothers have the best healthcare possible to assure a healthy beginning:

Require insurance coverage for dependants for contraception and for pregnancy.

The WVSMA along with the WV Perinatal Partnership supports legislation to require all health insurers cover the cost of maternity care and contraceptive care for covered dependants.

Prevention and treatment interventions for pregnant women who have substance abuse problems should be priority.

Pregnant women who are found to use drugs and/or alcohol should be directed to early and regular prenatal care that incorporates as part of the practice, substance use detection, diagnosis and referral for treatment with the goal of delivering a drug free infant. To ensure that women have trusted and confidential care available to them, it is essential that the care is obtained without fear of retribution of any kind

Expand state education to adequately prepare our young West Virginians for parenthood.

West Virginia women under twenty years of age have worse outcomes for their babies than any other age group of pregnant women, except for women over 40 years. Advance parenthood preparation of our young students could help the State significantly reduce low birth weight and preterm birth among women under twenty years of age, reduce school drop out rates, decrease the State's high rate of infant mortality, among other issues.

Allow physicians to provide expedited partner therapy for STDs.

To help decrease the risk of persistent or recurrent sexually transmitted diseases (STDs), the CDC recommends that physicians should be allowed to prescribe medication for both their patients and the patients' partners, without requiring medical evaluation for the partners. In accordance with the CDC recommendations, the WVSMA supports state legislation that would allow expedited partner therapy.

Strengthening Tobacco Control and Clean Indoor Air Initiatives

POSITION: The WVSMA supports policies that protect public health by discouraging tobacco use and promoting clean indoor air. Such policies include significantly increasing the tobacco excise tax, allocating sufficient funding for education programs designed to reduce or eliminate tobacco use and exposure to secondhand smoke, and supporting counties' indoor air regulations.

ISSUE: The WVSMA seeks to reduce or eliminate tobacco use and exposure to secondhand smoke by West Virginia citizens, especially children and pregnant women. Among the states, West Virginia ranks worst in the nation for smoking rates of adults and youth. We rank first in smoking during pregnancy and second overall in women smokers. Further, West Virginia has the highest rate of smokeless tobacco use in the nation with one in three high school students currently use tobacco and one in five males use smokeless tobacco.

The deleterious effects of tobacco use affect not only smokers but also the public at large. Scientific studies clearly show that secondhand cigarette smoke is a hazardous, cancer-causing air pollutant. Exposure to secondhand smoke causes increased risk for disease and death in healthy nonsmokers and is the third leading cause of preventable death among nonsmokers. The prevalence of tobacco use in West Virginia translates to an enormous economic toll as the state annually spends $1 billion on direct healthcare costs of smoking, and another $1 billion on occupational costs due to smoking.

The WVSMA joins the coalition of a Tobacco Free WV in recommending a three tiered approach toward addressing tobacco use:

- Increase the Tobacco Excise Tax
- Provide Adequate State Funding for Cessation Education Programs
- Protect County Clean Indoor Air Policies

Combating Poor Oral Health

POSITION: The WVSMA supports efforts to make policy changes which foster improved oral health for West Virginia's children and families.

ISSUE: Regrettably, West Virginia leads the nation in the percentage of our citizens with tooth loss and decay. By the time of high school graduation, over 80 percent of West Virginia youth have had dental decay; over 60 percent have had dental decay by age 8 and over 30 percent of West Virginia children suffer from untreated decay. Strikingly, over 45 percent of West Virginia adults, aged 65 and older, have lost all their natural teeth.

Dental disease is the single most prevalent chronic childhood disease and correlates directly to other health concerns. With today's tools and technologies, oral disease is almost 100% preventable and is cost effective with the potential to save millions of dollars. Poor oral health can contribute to a lifetime of overall poor health including diabetes and heart disease.

The WVSMA supports the following recommendations to address poor oral health:

- Encourage school aged children to have dental exams at appropriate intervals.
- Prohibit sale of sugary snacks and beverages in schools.
- Address the use of smokeless tobacco among our youth through increasing the tobacco tax and increasing counter marketing and cessation programs.

Strengthening and Preserving our Safety laws

POSITION: The WVSMA strongly supports strengthening West Virginia's All-Terrain Vehicle safety law and maintaining the motorcycle helmet law for operators and riders of all ages.

ISSUE: Though the Legislature passed All-Terrain Vehicle (ATV) Child Safety law in 2004, much more needs to be done to protect the health and safety of our citizens. While the West Virginia State Legislature has made great strides toward ATV safety, much more is still needed to improve such safety laws.

- Removing non road-worthy vehicles from our public roadways.
- Expanding the mandatory helmet law to cover all persons of age.
- Strengthening the requirement for ATV safety instruction to require hands-on safety courses
- Prohibiting passengers with the exception of machines that manufacturers have designed for passengers.

Another important safety issue is that of preserving the motorcycle helmet law. In recent years, efforts have been made by various groups to repeal our critically important motorcycle helmet law. Such an action by the Legislature would be highly irresponsible. Helmets are the best evaluated way to reduce motorcycle accident deaths and injuries. The WVSMA strongly supports the retention of our State's current mandated helmet use law for all motorcycle operators and riders of all ages.

WV Physician VK Raju, MD 2013 Recipient of the AMA Dr. Nathan Davis International Award in Medicine

VK Raju, MD, FRCS, FACS, of Morgantown, WV and long-time WVSMA member was honored February 11 at the American Medical Association (AMA) Foundation's 2013 Excellence in Medicine Awards.

He is a recipient of the Dr. Nathan Davis International Award in Medicine, which recognizes physicians whose influence reach the international patient population and change the future of their medical care. By treating, educating and counseling patients beyond the U.S. border, nominees have a positive impact on health care in the global arena.

The Dr. Nathan Davis International Award in Medicine honors physicians who represent the highest values of altruism, compassion and dedication to patient care.

In the award letter sent to Dr. Raju, the AMA Foundation said, "the caliber of our nominees was awe-inspiring, and your selection from such an impressive group speaks volumes in recognizing your dedication to the profession of medicine."

VK Raju, MD, FRCS, FACS, is the Founder and Medical Director of the Eye Foundation of America (EFA), a charitable organization that provides eye care in 21 developing countries to combat avoidable childhood blindness. For more than 30 years, Dr. Raju has led the EFA in providing free and subsidized treatment in remote areas and engaging in health education, practitioner training and research efforts that have advanced the visual health of 1.7 million people. Dr. Raju is also a Clinical Professor of Ophthalmology at West Virginia University and has lectureships in various universities across the United States. He is a Fellow of the Royal College of Surgeons and the American College of Surgeon and has written more than 300 papers, 100 publications and 12 book chapters.

Elizabeth Spangler, MD retires from CAMC

Elizabeth Spangler, MD, chief medical officer and vice president for medical affairs at Charleston Area Medical Center (CAMC) of Charleston, WV has retired.

Dr. Spangler's career began as an operating room nurse. She quickly progressed to supervisor of the obstetrics department then director of the emergency department. Upon choosing to become a physician, she underwent the rigors of attending medical school (Marshall University graduate), being a wife and mother and maintaining a 4.0 GPA.

Dr. Spangler completed an internal medicine residency at CAMC then returned to hospital administration as the director of medical affairs.

Dr. Spangler also volunteered at the West Virginia Health Right Clinic. She later became medical director of CAMCARE. After CAMCARE had sold, she was appointed executive vice president and chief medical officer of the hospital system's insurance company, Carelink.

Dr. Spangler was the first female president of the West Virginia State Medical Association. During her tenure as president, she led the Association through the changing tides of Medicaid funding cuts, the enactment of the flawed SGR formula, the promotion of the West Virginia Medical Foundation's program of work, the initiation of a physician advocacy position within the Association as well as working toward implementation of a WV Physicians Health Program.

The primary focus of Dr. Spangler's career has been patient advocacy; her work ethic exemplary as a physician, administrator and medical executive.

There Is Power in Numbers

The West Virginia State Medical Association (WVSMA) appreciates the confidence and support from the following **Group Practices** who have already established their 2013 WVSMA membership. It is our privilege to serve you! We look forward to being your advocate in 2013 and beyond!

- Associated Radiology, Inc
- **Bone & Joint Surgeons, Inc**
- **Charleston OB/GYN Associates**
- **Community Health Systems, Inc**
- Doctors Anesthesiology Associates Inc
- Ear, Nose and Throat Associates of Charleston, Inc
- Eastern Panhandle Anesthesia Associates
- Fairmont Physicians Inc
- General Anesthesia Services, Inc
- Marshall University Faculty
- Medical Park Anesthesiologists Inc
- **Mid-Ohio Valley Medical Group** Inc
- Neurological Associates, Inc
- **Orthopedic Healthcare** Associates
- Panhandle Medical Associates
- Parkersburg Radiology, Inc
- Radiology Inc
- Renal Consultants, PLLC
- Retina Consultants, PLLC
- **Scott Orthopedic Center**
- **Shenandoah Valley Medical** Systems
- South Charleston Cardiology
- South Charleston Pediatrics, PLLC
- The Greenbrier Physicians, Inc
- **Tri-State Otolaryngology Head &** Neck Surgery, Inc.
- **West Virginia University Faculty**

2013 Midwinter Physician Practice Conference & Annual Business Meeting

REPORT OF RESOLUTIONS COMMITTEE

February 16, 2013

Your Committee on Resolutions has carefully considered the Resolutions offered in the First Session of the House of Delegates on Saturday, February 16, 2013.

We are happy to report that a number of interested physicians appeared at the meeting of the Committee on Saturday and discussed in detail the Resolutions pending before the Committee.

The cooperation 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 one and only consideration that has guided the Committee in its deliberations has been the criteria as to whether each of the resolutions was or would be in the best interest of the entire medical profession in West Virginia in giving its patients the best of care.

Mr. Speaker, your Committee considered Resolution 1, pertaining to Honoring Charles A. Hoffman, MD.

Mr. Speaker, your Committee recommends that Resolution 1 be adopted:

THEREFORE, BE IT RESOLVED, that the West Virginia State Medical Association prominently and publicly recognize the leadership, accomplishments and dedicated service of Charles 'Carl' A. Hoffman, M.D., and the 40th Anniversary (2012) of his service as President of the American Medical Association.

Mr. Speaker, your Committee moves the adoption of Resolution 1.

Mr. Speaker, your Committee considered Resolution 2, pertaining to Physician Led Patient Centered Medical Homes.

Mr. Speaker, your Committee recommends that the Resolution 2 be adopted.

THEREFORE, BE IT RESOLVED, that the West Virginia State Medical Association support a Patient Centered Medical Home model in which a primary care physician (MD/DO) leads an interdisciplinary team of health care providers to ensure that all facets of a patient's health care needs, whether preventative, acute or chronic, are addressed in the most effective and efficient manner possible utilizing the best evidence, technology and resources available, and

BE IT FURTHER RESOLVED, that the West Virginia State Medical Association assert that each patient should have an ongoing relationship with a personal physician (MD/DO) who should lead the medical home interdisciplinary team and assume ultimate accountability for each patient's care.

Mr. Speaker, your Committee moves the adoption of Resolution 2.

Mr. Speaker, your Committee considered Resolution 3, pertaining to West Virginia Sunrise Law and Scope of Practice Expansion.

Mr. Speaker, your Committee recommends that Resolution 3 be adopted.

THEREFORE, BE IT RESOLVED, that the West Virginia State Medical Association strongly support the state's Sunrise Law, and

BE IT FURTHER RESOLVED, that the West Virginia State Medical Association strongly advocate for the mandatory application of the Sunrise Law in each and every case in which a non-physician group or organization proposes legislation or rules to revise or expand their scope of practice.

Mr. Speaker, your Committee moves the adoption of Resolution 3.

Mr. Speaker, your Committee considered Resolution 4, Coordination of Information.

Mr. Speaker, your Committee recommends that Resolution 4 be adopted as amended:

THEREFORE, BE IT RESOLVED, that the West Virginia State Medical Association actively promote the need to enhance and improve the coordination of patient information across governmental agencies to reduce or eliminate redundancy and duplication.

Mr. Speaker, your Committee moves the adoption of Resolution 4 as amended.

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 Chairman, the appointed members of the Committee who participated in these deliberations were:

Adam Breinig, DO, Chair
R. Austin Wallace, MD
Charles Whitaker, MD
Ken Hilsbos, MD
Reginald McClung, MD
Hoyt Burdick, MD
James Felsen, MD
David Avery, MD
Joseph Selby, MD
Douglas McKinney, MD

WVSMA Staff
Evan Jenkins, Executive Director

Respectfully submitted,
Adam Breinig, DO
Vice President 2012-2013

Continuing Medical Education Opportunities at CAMC Health Education and Research Institute

The CAMC Health Education and Research Institute is dedicated to improving health through research, education and community health development. The Institute's Education Division offers live conferences, seminars, workshops, teleconferences and on-site programs to health care professionals. The CAMC Institute's CME program is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. The CAMC Institute designates this educational activity for a maximum of 1 AMA PRA Category 1 Credit(s)™. Physicians should only claim credit commensurate with the extent of their participation in the activity. For more information on these and future programs provided by the Institute, call **(304) 388-9960** or fax **(304) 388-9966**.

SEMINARS

Honoring the Gift: Organ Donation
Friday, March 8
8 a.m. to 4 p.m.
WVU Auditorium - WVU Charleston Division
Charleston, WV

2013 Annual West Virginia Oncology Society Spring Membership Conference
Friday, April 19
Glade Springs Resort
Daniels, WV

4th Annual Ob-Gyn Junior Fellows Symposium
Saturday and Sunday, April 20-21
Stonewall Jackson Resort
Roanoke, WV

40th Annual Newborn Day
Friday, April 12
Charleston Embassy Suites
Charleston, WV

Life Support Training
Log-on to our website to register at www.camcinstitute.org

Advanced Cardiovascular Life Support (ACLS) – Renewal
March 5 and14; April 4 and 19

Advanced Cardiovascular Life Support (ACLS) – Provider
March 11 and April 8

Basic Life Support (BLS) for Healthcare Providers
March 12 and 26; April 9 and 23

Pediatric Advanced Life Support (PALS) – Recertification
March 15 and April 1

Pediatric Advanced Life Support (PALS) –Provider
March 21 and April 2
Pediatric Sepsis Simulation Module
April 17
Sepsis Simulation
March 13 and April 10

CME Online Programs/ Archived Guest Lecture Programs
Log-on to our website at www.camcinstitute.org

System Requirements
Environment: Windows 98, SE, NT, 2000 or XP
Resolution: 800 x 600
Web Browser: Microsoft's Internet Explorer 5.0 or above or Netscape Navigator 4.7x. (Do not use Netscape 7.1)

Video Player: Windows Media Player 6.4 or better.

Dial-Up or Broadband Connection. Minimum Speed, 56k (Broadband is Recommended)

Other archived CME opportunities:

Geriatric Series

Research Series

NET Reach library

CAMC Institute

25005-A13

2013
Certified Medical Office Manager Class

Thursday, March 14 & Friday, March 15 *and* Thursday, March 21 & Friday, March 22, 2013

Time: 9:00 a.m. to 4:00 p.m. | **Place:** West Virginia State Medical Association
4307 MacCorkle Ave., SE, Charleston, WV 25304 ***(Participants must attend all 4 days.)***

Participant Information

Registrant:_____ E-mail:_____

Practice Name: _____

Street Address: _____

City:_____State:_____ Zip:_____

Phone:_____ Fax:_____

Program Fee/Discount Policies:

Registration Fee: $999 WVSMA members & PMI Certified Professionals: $899 *(Includes instructional materials and exam fee.)*

Payment Method:

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E-mail: karie@wvsma.org

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PRACTICE MANAGEMENT INSTITUTE

WEST VIRGINIA State Medical Association

Entire WVU med class passes first licensure exam

In every medical student's second year, getting past one major milestone looms large. Passing the United States Medical Licensing Examination (USMLE) Step 1, better known as "the boards," is not just required to practice medicine in the U.S., but it is necessary to remain in the third year of medical school. All the students in the West Virginia University School of Medicine Class of 2014 have a reason to cheer: each has passed the crucial exam on his or her first attempt.

"This is a series of personal accomplishments that in the aggregate are a huge team win. In the world of medical education, this is tantamount to pitching back-to-back perfect games or having an undefeated season," Arthur J. Ross, III, M.D., M.B.A., dean of the WVU School of Medicine, said.

"It is a first for me in my many years of medical school administration. This rare and phenomenal accomplishment is well worth celebrating. Every member of the class and everyone who has participated in or somehow supported their education needs to take a bow."

The exam's 322 multiple-choice questions are designed to test basic science knowledge learned during the first two years of medical school. Subjects covered include anatomy, behavioral sciences, biochemistry, microbiology, pathology, pharmacology and physiology. Interdisciplinary areas, including genetics, aging, immunology, nutrition and molecular and cell biology, are also emphasized.

Performance is one of the selection criteria used in the National Resident Matching Program, which places graduating medical students in their residency programs. A passing score on the exam indicates that a medical student has grasped the core scientific knowledge taught during the basic sciences' years, explained Norman Ferrari, III, M.D., WVU School of Medicine vice dean for medical education.

"We are so very proud of the students in the Class of 2014 for this monumental accomplishment," Dr. Ferrari said. "Our curriculum committee has been very active in its responsibility to constantly review and improve our curriculum and course offerings so that we can provide the best learning environment for our students. The faculty has worked very hard to challenge our students so they would be ready to perform on this first step to licensure. Each has risen to the occasion and has made us all quite proud."

Dr. Ronald L. Gross to lead WVU Eye Institute

Ronald L. Gross, M.D., a 1982 graduate of the West Virginia University School of Medicine, has been appointed chair of the School's Department of Ophthalmology and director of the WVU Eye Institute.

Dr. Gross has been on the faculty of the Baylor College of Medicine in Houston, Texas, since 1987, and holds the Clifton R. McMichael Chair in Ophthalmology there. He will join WVU in the first half of 2013.

The appointment was announced by Arthur J. Ross III, M.D., M.B.A., dean of the WVU School of Medicine. "To 'bring home' a son of West Virginia with such impressive credentials and passionate commitment to West Virginians is especially sweet," Dr. Ross said, "Dr. Gross is exactly the right person to take the clinical, academic and research endeavors of this fine Department to the next level."

Gross completed internship and residency training at Baylor, along with a glaucoma fellowship at the Jefferson Medical College and Wills Eye Hospital in Philadelphia, before joining the Baylor faculty. He has been a principal investigator or collaborator on more than 80 research projects and is the author or co-author of 145 publications in peer-reviewed journals. He is a member of the editorial board of the Journal of Glaucoma.

Marshall University receives $2.5 million BrickStreet Foundation gift for research

Marshall University has received a $2.5 million gift from the BrickStreet Insurance Foundation Inc. to establish a research endowment. The donation is expected to be matched through the state's "Bucks for Brains" West Virginia Research Trust Fund, for a total benefit to Marshall of $5 million.

Proceeds from the endowment will be used to support research at the university's Joan C. Edwards School of Medicine, particularly projects related to occupational and environmental health.

Greg Burton, president and chief executive officer of BrickStreet Mutual Insurance Company, presented the donation to university representatives in January.

"Through the leadership and vision of our board, BrickStreet has set up a foundation focused on giving back to the community in which we live," said Burton. "Through this partnership with Marshall University's Joan C. Edwards School of Medicine, BrickStreet is proud to support their continued research efforts. Many of our employees are Marshall graduates, so our partnership with the university runs deep and I know this investment will be used to not only strengthen the university's research efforts in occupational and environmental health, but also to continue to fulfill its mission to improve the health and wellness of our communities.

"As one of the largest workers' compensation providers in the region, we understand that the graduates of the Joan C. Edwards School of Medicine will be our future partners in continuing to improve occupational health across West Virginia."

From left, Marshall President Stephen J. Kopp; Greg Burton, president and CEO of BrickStreet Mutual Insurance Company; Dr. Ron Area, CEO of the Marshall University Foundation; and Dr. Joseph Shapiro, dean of the university's Joan C. Edwards School of Medicine, display an oversize check for $2.5 million presented by BrickStreet Foundation to the Marshall University Foundation. The donation will be used to establish a research endowment at Marshall. Photo by Rick Haye/Marshall University.

Dr. Stephen J. Kopp, president of Marshall University, thanked BrickStreet for the contribution, saying, "We are very pleased and proud that BrickStreet has chosen to make this gift commitment in support of endowment-based biomedical research focused on some of the most pressing occupational and rural health problems confronting our state and region. The Marshall University School of Medicine is a leader in rural medicine and the support provided by BrickStreet will be amplified by matching support from the West Virginia Research Trust Fund. This research endowment fund offers great promise to help improve the health and wellness of our rural communities."

Dr. Joseph I. Shapiro, dean of Marshall's medical school, added, "I couldn't be more pleased to receive this generous gift from BrickStreet. It will most certainly benefit thousands of West Virginians. With this gift, Marshall researchers will conduct work that will span the spectrum from basic molecular research to practical, workplace-based research, finding both laboratory and clinical answers to help improve the quality of life for those in our state and region."

Life and Limb exhibit to be featured at WVSOM library

Wounded Civil War soldiers and their fight to cope with disabling battlefield injuries will be featured in an upcoming National Library of Medicine exhibit at the West Virginia School of Osteopathic Medicine (WVSOM).

"Life and Limb: The Toll of the Civil War" will explore the experiences of disabled Civil War veterans who were forced to sacrifice their limbs in order to save their lives.

This is WVSOM's third National Library of Medicine exhibit, which will be on display February 11 through March 23 at the library on their Lewisburg campus.

Mary Essig, WVSOM library director, said the exhibit focuses on the stories of disabled veterans rather than the surgeons, physicians and nurses whose stories are richly documented from that time.

"This is more than just the general history of Civil War and Civil War medicine," she said. "There's a lot of interest in that history, but the contribution of disabled veterans often gets forgotten."

The Life and Limb exhibit will offer WVSOM students and local community members a glimpse into the medical field between 1861 and 1865 — from common surgeries to medical instruments to the creation of an "Invalid Corps" in 1863. According to the NLM, about 60,000 surgeries during the war were amputations. Many times the surgeries were completed without anesthesia and in some cases left patients with painful sensations in the severed nerves.

The practice of medicine has certainly evolved in the past 150 years, but perhaps not as much as some might think.

"For our medical students, this is part of the history of medicine and how things developed," Essig said. "It's interesting to see the surgical implements of the past and see how far we've come, but yet how similar some of them are to what we still use today."

Exhibit hours are 8 a.m. to 10 p.m., Monday through Thursday; 8 a.m. to 6 p.m., Friday; 12 to 6 p.m., Saturday; and 2 to 10 p.m., Sunday.

For more information about the exhibit, contact the library at 304-647-6261. Information can also be found online at http://www.wvsom.edu/Academics/workshops-events/lifeandlimb.

Survey of Knowledge and Practices of West Virginia Providers Regarding Enteric Pathogens and Laboratory Testing, 2011

In order to evaluate enteric pathogen surveillance in West Virginia, a survey of healthcare providers was conducted to assess their knowledge and practices regarding enteric pathogens and laboratory testing.

Surveys containing questions on lab testing, patient management practices, and clinical vignettes from the Diagnosis and Management of Foodborne Illnesses, A Primer for Physicians were mailed to all 3147 licensed MDs, PAs and DOs through the WV Boards of Medicine and Osteopathy. Of the 532 (18%) respondents, there were 389 (73%) actively practicing providers who reported seeing at least 1 patient in the previous 6 months with diarrheal illness. The analysis was limited to these providers.

Family and internal medicine specialists comprised 66% of respondents. The majority of respondents practiced in a private office or clinic (57%). Mean (median) number of years in practice was 19 (18).

Fifty-five percent of providers utilize lab testing as part of their usual management of patients with diarrheal illness; however 80% make treatment decisions prior to confirming the cause of diarrhea. There was no significant difference in testing practices by years in practice or by specialty, with the exception of pediatrics. Pediatric providers were less likely than other providers to utilize lab testing as part of their usual management.

Of the 173(47%) providers who do not routinely test their patients, 90(52%) indicated that test results would not change the treatment plan, 41(24%) cited the cost to the patient as a barrier and 26(15%) indicated they would test if symptoms persist.

In a clinical scenario specific to parasitic pathogens, 286(73%) of providers provided the correct likely diagnoses and 245(63%) indicated correct laboratory testing, with no significant difference by provider specialty. In a scenario specific to bacterial pathogens, only 103(26%) of providers gave the correct diagnoses and, 95(24%) indicated appropriate laboratory tests. For bacterial pathogens, infectious disease specialists were statistically more likely to indicate the correct diagnoses and appropriate laboratory tests (OR: undef, $p<0.001$). In a Shiga toxin producing Escherichia coli (STEC) scenario, 202(52%) of providers gave the correct diagnoses and 183(47%) indicated the correct laboratory tests to identify the pathogen. For this scenario, providers in practice <10 years (OR 1.6, $p<0.02$) and those in pediatrics (OR 1.8, $p<0.03$) were statistically more likely to indicate the correct diagnosis and laboratory test. In 2 scenarios that could have been either bacterial or viral pathogens only 27(7%) and 53(14%) of providers picked the correct likely diagnoses and of those, only 12(3%) and 30(8%) indicated the appropriate lab tests, with no significant differences by specialty for either scenario.

This study suggests that state surveillance data may substantially underrepresent the true incidence of enteric illness in West Virginia. Only half of providers routinely test patients with diarrheal illness. Although, testing is not warranted in every case of acute gastroenteritis, there are situations in which clinical management of the patient depends on knowing the cause of diarrheal illness. The recommended antimicrobial therapies for bacterial pathogens vary by pathogen [i.e. Shigella (ampicillin and trimethoprim-sulfamethoxazole, depending on sensitivities) and Campylobacter (azithromycin or erythromycin)]. For some bacterial infections, such as uncomplicated Salmonellosis or STEC, antimicrobial therapies are not recommended and may even be harmful. In order to know the appropriate course of treatment, the cause of a patient's diarrheal illness needs to be identified through laboratory testing. In accordance with the IDSA Guidelines on Management of Patients with Diarrheal Illness, the WVBPH recommends testing for persons with diarrheal illness lasting more than 24 hours, especially if accompanied by blood in the stool or other signs of severity such as fever, dehydration, etc.

For more information on disease reporting requirements for providers or a detailed report on the entire study, contact the WVBPH Division of Infectious Disease Epidemiology (www.dide.wv.gov) at 304-558-5358.

Compare Our Results; Evaluate Our Effort

by Steve Brown, Agency Manager

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

As can be seen from the chart to the right, WVMIA clients are more likely to take advantage of premium credits offered by the West Virginia Mutual Insurance Company than the overall book of business written by the Mutual.

Mutual Risk Management Premium Credits

Average Participation Rates

Risk Management Program	Mutual*[1]	WVMIA*[2]
CARE	80%	93.8%
Office Visit	70%	93.1%
CME Loss Control	56%	88.3%
Staff In-Service	63%	93.1%

*Source: *[1]WVMIC = West Virginia Mutual Insurance company for the period 1/1/12 to 11/30/12*

**[2]WVMIA = West Virginia Medical Insurance Agency for the period 1/1/12 to 12/31/12*

The Effort

While Mutual insureds receive notices and announcements about the availability of the premium credits from the Mutual, the West Virginia Medical Insurance Agency maintains its own set of records on each one of its Mutual physician insureds for purposes of advising the insureds at least 3 times a year about premium credits needed.

These communications occur routinely as follows: (1) Upon delivery of the renewal policy – this gives the insured close to a full year to obtain the needed credits. (2) As programs are announced by the Mutual, the Agency provides information to its local insureds affected by the new schedule. (3) 90 days prior to renewal, the Agency reviews the needs of its insureds about to renew and stresses the importance of the needed credits to the insureds. Robin Saddoris, agency account manager, also will frequently fax or e-mail insureds when last minute arrangements are made to satisfy our clients desires to achieve maximum premium credits.

In addition to the Agency's efforts to lower the premium of its insureds, the Agency will frequently attend CME Loss Control and CARE Workshops to have extra visibility for its clients. Also the Agency has been successful at promoting additional local seminars; we have been able to promote the holding of seminar/workshops in Keyser and also in our offices at the West Virginia State Medical Association or at the office of a local physician, as well as at WVSMA's annual business meeting and health care summit. These are additional opportunities for attendance arranged to benefit members of the WVSMA and clients of the Agency.

The Results

The data in the chart provided by the Mutual is the result attributable to all Mutual agents; therefore, the West Virginia Medical Insurance Agency is NOT comparing its results only to the Mutual effort, but to the average results obtained by all Mutual agents.

The concluding result from the comparison is that West Virginia Medical Insurance Agency efforts result in its clients receiving a lower average premium because they receive more Mutual risk management premium credits by being more informed and engaged through the services of their agent, the West Virginia Medical Insurance Agency.

The Question

Do you have the most effective representation (Agent) to assist you in receiving the lowest Mutual premium possible?

Of eligible Mutual insureds who are clients of the West Virginia Medical Insurance Agency 87% received 10% (of a possible 10%) premium credits in 2012. In 2013, the maximum CARE/ Risk Management premium credit increases to 12%; thereby increasing this value added service provided by the West Virginia Medical Insurance Agency. For information on how to receive our services, please call Steve Brown, agency manager, at 1-800-257-4747 ext 22 (locally 304-925-0342 ext 22) or cell 304-542-0257 or visit us on-line at www.wvmia.com.

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Obituaries

The WVSMA remembers our esteemed colleagues...

Dr. Thomas O. Dickey, Jr.

Dr. Thomas O. Dickey, Jr., 90, of Glen Dale, WV, died December 13, 2012 at the Hubbard Hospice House, Charleston, WV.

Born and raised in Woodsfield, Ohio, he was the son of the late Thomas O. Dickey, Sr. and Clara E. Dickey.

He was preceded in death by his wife of sixty years, Mary Angela Dickey in December 2011.

He was a complete family doctor, serving his patients' needs in his office, performing minor surgeries and assisting surgeons on major operations of his patients, making house calls, delivering well over 1000 babies.

He was certified by the American Board of Family Practice in 1971, and recertified in 1977. He was also certified by the American Board of Emergency Medicine in 1983. He was an Advanced Life Support, and an Advanced Trauma Life Support instructor.

He had a number of appointments in his service to the community, including ten years on the Board of Directors of the Northern WV Emergency Medical Services Agency, Editor of the WV Chapter of ACEP newsletter from 1985-88, and President of the Marshall County Medical Society from 1991-1995.

He was a clinical associate professor of the WVU School of Medicine. He loved teaching nurses, externs, EMTs, residents, and 4th year medical students who did emergency medicine rotations.

Surviving him are his three children, Dr. T.O. Dickey III (Susan), of South Charleston, Sue Bailes of North Carolina, and David A. Dickey of Virginia, sister, Mrs. Doris Reese of Columbus, Ohio, eight grandchildren, one great grandson, and five nieces and nephews.

In lieu of flowers, the family suggests donations to the Parkinson Research Foundation, the American Cancer Society, Hubbard Hospice House, and the West Virginia School of Preaching.

Dr. Marcel G. Lambrechts

Dr. Marcel G. Lambrechts, 83 of Hurricane, passed away on August 29, 2012.

Born in Hannut, Belgium in 1928, he survived the occupation of his hometown in WWII. He received his medical degree at the University of Louvain in Belgium and immigrated to Charleston, WV, in 1955 to begin his career.

Dr. Lambrechts was a leader in the treatment of Cystic Fibrosis and the field of nutrition and authored two books. He was a clinical Associate Professor of Pediatrics at WVU. He retired from his distinguished pediatrician career in 1994. To this day, people remember him fondly as their "baby doctor".

Dr. Lambrechts is survived by his wife of 55 years E. Louise Lambrechts, his two sons Michel J. Lambrechts and his wife Beth Anne of Medford, New Jersey and Marcel G. Lambrechts, Jr. DDS and his wife Susan of Richmond, Virginia, his son-in-law Joseph Orlandi and his wife Mary of Nitro, WV and his 6 grandchildren, Christina Orlandi, Gino Orlandi, Andrew Lambrechts, Katherine Lambrechts, Zachary Lambrechts and Mary Lambrechts. He was preceded in death by 2 daughters, Suzanne (1981) and Yvonne (1994).

In lieu of flowers, donations can be made to the American Cancer Society.

Dr. A. Ramirez

Dr. A. Ramirez, 76, of Mt. Carbon, died February 8, 2013. She was born in Corregidor, Philippines, on December 14, 1936, she was the daughter of the late LaConmemor Hidalgo and Virginia Nicolas. She was also preceded in death by her grandson, Ronaldo Hector Ramirez.

She was a pediatrician in the Montgomery area since 1975. She was a member of the Good Shepard Catholic Church at Coalburg. She was a member of the Fayette County Medical Association and the WV Medical Association. She was a graduate of University of Santo Tomas in the Philippines.

Surviving are her husband, Dr. Rolando "Dr. R" Ramirez; children, Maria and Daniel Sedney, Rolando J.J. Ramirez and his wife, Jacqueline of Canton, Ohio and Ronaldo Ramirez and his wife, Tina of Clendenin; grandchildren, Mia Danielle, Chkristian Michael, Rolando John "Jack", Ronaldo Christopher and Gavin Lee.

Expressions of sympathy can be sent at www.odellfuneralhome.com.

Dr. James Thomas Spencer, Jr.

James Thomas Spencer, Jr., M.D., 92, died in Charleston on December 1, 2012, of natural causes. He is survived by his son, Thomas Preston Spencer, of Charleston, and by his sister, Norma Spencer Butt, of Virginia Beach, Virginia. He was preceded in death on March 7, 2012, by his wife of sixty-four years, Frances Wilson Spencer, and by his daughter, Sarah Florence Spencer, who died from complications from multiple sclerosis at age 30 in 1981

Dr. Spencer retired from the practice of medicine in 1999, after 51 years as an Otolaryngologist, leaving the practice group he initiated in 1973, Ear, Nose, and Throat Associates of Charleston, Inc. When the Memorial Hospital Division of CAMC was built in 1950, and the first staff of doctors was appointed, he was made the chief of the ENT section of the Department of Surgery. He became board certified in 1948, after completing his residency in Otolaryngology and Bronchoesaphagology at Jefferson Hospital, Philadelphia, affiliated with Jefferson Medical College, from which he graduated in 1944.

He was a member of numerous national specialty organizations, presenting papers, 18 of which were published, some with international recognition.

His medical education began at Wake Forest's Bowman Gray School of Medicine in Winston-Salem, North Carolina, and then in 1943 he elected to transfer to Jefferson Medical College, following the path of his physician uncle, also a Wake Forest and Jefferson Medical College graduate.

In lieu of flowers, the family requests donations be made to the Saint Marks United Methodist Church Memorial Fund, in honor of Dr. Spencer's life and ministry there.

2013 WESPAC Contributors

The WVSMA would like to thank the following physicians, residents, medical students and Alliance members for their contributions to WESPAC. These contributions were received as of February 13, 2013:

Extra Miler ($500)
Hoyt J. Burdick, MD
Generoso D. Duremdes, MD
Michael A. Kelly, MD
Michael A .Stewart, MD

Dollar-A-Day ($365)
Samuel R. Davis, MD
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Rose Romero
Martha Tiu

WESPAC is the West Virginia State Medical Association's bipartisan political action committee. We work throughout the year with elected officials to make sure they understand the many facets of our healthcare system.

WESPAC's goal is to organize the physician community into a powerful voice for quality healthcare in the West Virginia Legislature. We seek to preserve the vital relationship between you and your patients by educating our legislators about issues important to our physicians.

WESPAC contributions provide critical support for our endorsed candidates. Your contribution can make the difference between a pro-physician/patient candidate winning or losing.

To make a contribution to WESPAC, please call (304) 925-0342, ext. 12 or online at www.wvsma.com/WESPAC.aspx

West Virginia State Medical Association's

Political Action Committee

Visit www.wvsma.com *or*
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Shana Kaznoski, DO

Kanawha County Medical Society
Lana Christiano, MD
Jason Pope, MD
Leila Sakhai, MD

Mercer County Medical Society
Milagros (Milly) Vidot, MD

Monongalia County Medical Society
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Jon Cardinal, MDy
Jennifer Cheng, DO
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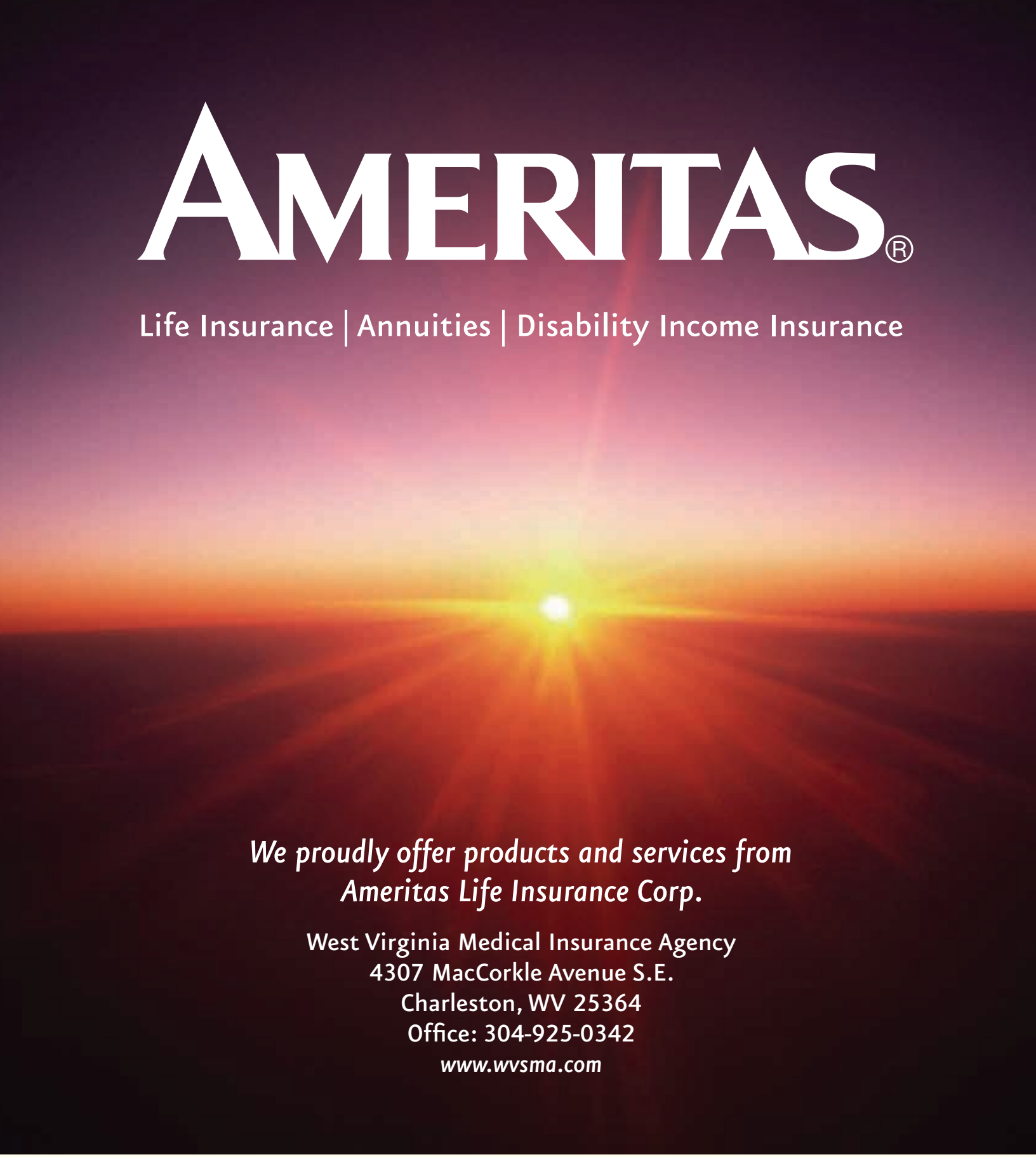

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