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WMJ

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COVER THEME
Achieving the right balance: Physician health programs help doctors manage practice demands

Attending to the health and well-being of physicians is a key component of professionalism and is important for sustaining the safe, high-quality practice of medicine, according authors of a report in this issue of *WMJ*. Physician health programs can provide necessary resources to help ensure robust and active prevention and support for those seeking the right professional balance. This issue takes a look at these programs.

Cover design by Mary Kay Adams-Edgette.

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Physician 'cognitive drift' and medication errors—unintended consequences of the modern EMR

Medications represent the most common intervention in health care, but also lead to an estimated 1.5 million adverse drug events and tens of thousands of US hospital admissions annually.[1] The 98,000 deaths per year, and many more injuries resulting from medical errors, make patient safety top priority.[1] It was hoped that medication errors—the most common cause of preventable injuries in hospitals—could be prevented by computerized physician order entry (CPOE), a component of the (electronic medical record) EMR.[2] Earlier on, there were claims that the introduction of the EMR could reduce serious medication errors by 55%.[3] These hopes have not yet materialized; indeed, there is evidence that EMR and CPOE have led to some unintended consequences of increased medication errors under certain circumstances.[4]

"Cognitive drift" is said to occur if more than 1 second elapses between clicking a computer mouse and seeing new data on the screen.[5] Our informal poll of ICU physicians in a Northwestern Wisconsin hospital revealed that cognitive drift, defined by the elapsed time of >10 seconds was commonplace, with 10 of 10 (100%) ICU physicians experiencing cognitive drift several times a day. Cognitive drift represented a major cause of physician angst, a potential source of medication errors, and contributed to end-user resistance to EMR implementation.[6] Sometimes, the elapsed time was over 1 minute. Such delays were described as "most frustrating," "insane," "unacceptable," and "unbelievable." Prolonged waiting between mouse clicks translates into dangerous distractions during critical decision points and CPOE-related or other medical errors.

A functional EMR, in our opinion, ought to be robust, flexible, nimble, muscular, and encyclopedic, and should virtually eliminate the phenomenon of cognitive drift simply by being extremely fast.[5,6] There is no such EMR system out there, at least not yet—an indictment of the "medical industrial digital complex." This narrative is a call for more research into this area of physician-EMR interactions. On this point, Joseph Tan identified another major barrier to EMR innovation adoption and implementation and utilization when he noted the neglect of clinicians and system users in the development and design phase of EMR systems.[7] Tan also observed that few people are trained to work at the intersection of biomedicine and information technology (IT).[7] Front-line practicing physicians must play pivotal roles in all phases of EMR development and implementation.[6,7] This author posits that the increasing entry of physicians and other mid-level providers into graduate business or information systems programs would help close these very critical gaps in the growth and development of the EMR as an integral cognate component of modern health care delivery. It is this author's intention, since obtaining an MBA in May 2012, to help bridge this biomedicine IT gap.

Finally, cognitive drift is a common, yet unreported and unrecognized, source of physician stress and medical errors in the workplace.[6] A search in PubMed on December 18, 2011 for "cognitive drift" revealed 73 publications. All 73 articles dealt with neurology- and psychiatry-related topics; not one had anything to do with physicians and the EMR. So, whereas virtually all physicians experience this malady of the EMR every day at work, there is not one report of this phenomenon in the English literature. The solutions to resolving cognitive drift in the EMR, which include involving practicing physicians in all phases of EMR design, development, and implementation; deploying more robust and faster servers, networks, and work stations; minimizing the number of mouse clicks; and optimizing EMR connectivity must all be promptly executed to limit these unintended consequences.[6] This phenomenon of cognitive drift warrants further study in the United States and worldwide.

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Effective population management tools available

Serrano et al[1] report interesting results on managing populations of depressed patients in the primary care setting, particularly the underserved from federally qualified health centers (FQHCs) and the Veterans Administration system. Care management is, appropriately, the focus of their interventions, and much of the discussion and accompanying editorial point to the inadequacy of the technology support for this approach. As described, a clever, but somewhat convoluted health information technology process was used to manage the population.

Electronic medical records (EMRs) are designed to manage individual patients, and are belatedly beginning to try and address the need to manage populations of patients. I care for patients at a FQHC where staff have looked at many EMRs and talked to users of others. We think there is growing consensus that EMRs mostly lack the type of tracking ability needed to manage populations of patients. What is happening in this vacuum is that the data warehouse vendors have jumped into the void and are offering solutions that extract data from the EMR, and report population data back to the practice. There are several downsides in that warehouses have expensive ongoing costs and users have little control over what data they choose to assess. We are not warehouse experts, but it also appears that if one chooses to do something about those with bad

outcomes a whole other process must be put in place to track and manage individual patients who are in outlier groups.

About a decade ago we purchased a "population management software" package called i2iTracks (i2i Systems, Inc., Santa Rosa, California). It was developed by former FQHC technology people for the underserved populations in FQHCs. (There are other products available for FQHCs and similar products in the private practice world.) Their spread has been slowed by the EMR vendors' unsubstantiated claims that you can mange populations from within the EMR. (Perhaps aided by the lack of understanding of what it takes to manage populations.) Population software systems regularly extract data from the EMR/project management system to give real-time data on any useful population data points. This includes appointment data (next or last) not often considered in reporting systems. It does not extract every data point in an EMR, but only those useful for population management. So, you can see blood pressures and body mass indexes, for example, but would not normally need to see cardiovascular exam outcomes (murmurs, etc). You could map and see these points, if you chose, but why would you normally need those for population management? Changing the way a query runs is a snap. If you decide you want to use a PHQ-9 score of 14 instead of 15 as your tracking indicator, it literally takes seconds to make changes. Likewise you want to know who has not had a follow-up visit in 6 months instead of 3, it takes only seconds to change the question. There is no need to submit a request to the vendor for a different indicator. With a mouse click on the adverse outcome of interest (PHQ-9 >13 and no visit or call in the last 3 months), you get the entire roster of patients in that numerator. That list can be sorted by site/clinician and sent to those responsible for a follow-up call. Or a predetermined letter can be printed and sealed for mailing from within the system. It is ideal for health coaches/care managers, care coordinators. It has a sophisticated referral tracking system, which can be used for internal follow-up as well. All of these attributes allow the practice to take the next and crucial step (beyond simply reporting population data for benchmarking or pay for performance).

While we all wait on the illusive EMR system that does everything, there are current solutions for those practices, like Serrano's, in the vanguard of improving population health.

Bery Engebretsen, MD
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Des Moines, Iowa

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A Home for Sick and Worn-out Doctors

Editor's note: The following is a letter to the editor first published in WMJ, *Volume 3 (No. 4), September 1904, p. 195 from Johan De Besche, MD, Milwaukee; Arthur J. Patek, MD, Editor*

Twenty miles northeast of Boston is a village called Stow. Here there is what is known as "Red Acre" farm. It is a farm for worn-out, ill-treated, and crippled horses. A young woman has here provided a home for friendless horses. In this institution no color line is drawn, there is no difference of school or nationality, no race prejudice. All kinds of horses and mules are welcome, if friendless.

Cats have their benefactors who provide them with homes and care. Dogs have their days, and when the nights are long, they rest in beautiful graves. This expression of sympathy for their mute friends is both pathetic and commendable. But did anyone ever hear of a home for friendless, ill-treated, worn-out doctors? There are homes for those weak in mind, weak in body, weak in morals, weak in finances, both young and old. There are sanatoria for presumptives and consumptives. There are water cures and Keeley (kill'em) cures, but there is not one sanatorium for doctors. We have seen doctors donate to libraries and to universities, but does anyone know of a donation by a wealthy doctor to his less fortunate colleagues?

In every community there are able, hardworking, honest doctors, who are poor financiers. When they have spent the best part of their lives, thoughts and energy, they often awake to find themselves penniless, with broken health. Their only capital, their physical and mental health, has slipped away from them, as has their money between their fingers. No one has any use for him—the sick and worn-out doctor.

It is a prevailing idea of the public that a doctor ought to be in independent circumstances, and that it is his own fault if he is not. Personal, domestic, and professional expenses keep a doctor constantly in the harness. Irregular and insufficient hours for sleep, hurried and disturbed meals, exposure to the inclemencies of the weather, with no time for proper care of self, no relaxation from the responsibilities thrust upon him, too conscientious to cry enough—in fine—unable to administer his physical and financial affairs, in his rush to alleviate the ills of others "Herr Doctor" sooner or later becomes comparable to the broken-down, helpless, and apathetic old cart-horse.

Many a good man could be restored to health, many deserving escape the county hospitals, if there were a home for sick and friendless doctors, a home provided by and for doctors. Let us have a "Red Acre" farm here in Wisconsin for our broken down brother-beast-of-burden.

Conversations About Care Wishes Can Ease Acute, Stressful Situations

Lisa Hildebrand

As a hospital-based physician, Tosha Wetterneck, MD, MS, FACP, has witnessed the profound impact advance care planning can have on patients, their families, and their caregivers. She also has experienced myriad difficulties when patients have not documented their care wishes before they arrived at the hospital unable to do so.

"It is so much more helpful for everyone involved—patients, family members, physicians and other health care professionals—if these conversations happen when people are healthy," Dr Wetterneck said during the kick-off event for Honoring Choices Wisconsin, an advance care planning initiative of the Wisconsin Medical Society (Society). "When patients have these discussions before they are acutely ill, it can ease what otherwise might have been a stressful situation for patients and families, and it allows physicians to focus on the patient's wishes."

The Society has a long history of support for advance care planning, hospice, and palliative care. Last year, however, its Council on Health Care Ethics recognized, that advance care planning still was not the norm for physicians, patients, and their families and looked for ways to meet the enormous need for improvement.

Conversations among physicians, health care leaders, and community members throughout Wisconsin confirmed Council members' beliefs, and in April 2012, the Society's House of Delegates formalized its support for the Society to take a lead role in the development and implementation of a statewide advance care planning initiative. In September, Honoring Choices Wisconsin was launched.

What is advance care planning?
A process of planning for future medical conditions. This process, to be effective, needs to meet similar standards as the process of informed consent, ie, the person planning needs to:

- Understand selected possible future situations and choices.
- Reason and reflect about what is best.
- Discuss these choices and plans with those who might need to carry out the plan.

What is an advance directive?
A plan, made by a capable person or their surrogate, for future medical care regarding treatments or goals of care for a possible or probable event.

"We saw that some of the best work around this issue was being done right in our backyard," said George M. Lange, MD, FACP, the Society's immediate past president. "Respecting Choices® and the greater La Crosse community serve as a model for advance care planning, and we are honored to partner with them to bring their remarkable work to other parts of our state."

Change, Advocacy, Education

The Society is serving as a convener, coordinator, and catalyst to build system change, advocacy, and education around advance care planning. Using proven concepts, methodologies and materials, Respecting Choices® staff members will provide training at the 8 health systems participating in the first round of pilots of Honoring Choices Wisconsin. Pilot projects are expected to launch in March 2013. Health systems participating in the first pilot projects are:

- Community Care, Inc., Milwaukee
- Dean Health System and St. Mary's Hospital, Madison
- Fort HealthCare, Fort Atkinson
- Group Health Cooperative of South Central Wisconsin, Madison
- Meriter Health Services, Madison
- ProHealth Care, Waukesha
- UW Health, Madison
- William S. Middleton Memorial Veterans Hospital, Madison

"Although physicians are leading the initiative, community members—including representatives from multicultural, senior and religious organizations—are essential to the success of Honoring Choices Wisconsin," said Dr Wetterneck, Society president. "They have been involved throughout the planning process, and their participation will continue to grow as community outreach begins."

The Twin Cities Medical Society (TCMS) in Minnesota utilizes the training, principles and methodology of Respecting Choices® for its advance care planning project, and the Wisconsin Medical Society will model its community engagement efforts on the successful work in the Minneapolis/St. Paul metropolitan area. Through Honoring Choices Minnesota, families and communities are encouraged to have discussions regarding end-of-life care choices. Support from Twin Cities Public Television has allowed TCMS to broaden its reach into the community.

Partnerships and visibility are integral to the success of an advance care planning proj-

Linda Briggs MS, MA, RN, conducts the First Steps Pre-Training Workshop for the Madison participants of Honoring Choices Wisconsin Oct 3. Briggs is Associate Director Respecting Choices® & Ethics Consultant, Gundersen Lutheran Medical Foundation, Inc.

Honoring Choices Wisconsin Steering Committee members serve as advisers to the Wisconsin Medical Society on how best to pursue Honoring Choices Wisconsin's (HCW's) mission, advocate in public for HCW and its activities, and represent all HCW stakeholders to the project's leadership. Steering Committee and HCW faculty members are, from left, Richard Dart, MD; Pam McGranahan, MSN, RN; Kathleen Ziemba, MSW, LCSW; John Maycroft, MPP; Gina Dennick-Champion, MSN, RN, MSHA; Mike Bernhagen; Bernard "Bud" Hammes, PhD, faculty; Linda Briggs, MS, MA, RN, faculty, Bruce Agneberg, MD; George M. Lange, MD, FACP; and Bruce Weiss, MD, MPH. Not pictured are Ben Adams, JD; Tim Bartholow, MD; Joyce Hart Smerick; Tim Jessick, DO; Molli Rolli, MD; and Tosha Wetterneck, MD, MS, FACP.

ect of this magnitude, Respecting Choices Director Bernard (Bud) Hammes, PhD, told attendees at the kick-off event September 24. "We have to change what we do in health care," he said. "It starts with a shared vision, and that's what the Wisconsin Medical Society is doing. It's much more powerful to do this as a collaborative effort."

A Team Approach

Hammes added that it's appropriate for the Society to lead this project because physicians are essential to its success. During training, physicians will learn the importance of best practices for initiating an advance care conversation and referring patients to a trained facilitator—a registered nurse, social worker, or other health care professional. The basic role of physicians is to:

- Initiate planning discussions/referrals.
- Review written plans that have been entered into the medical record.
- Make plans more specific as patient's health condition changes.
- Convert plans into orders when appropriate.

"Facilitators are not replacing physicians," Hammes said. "They are assisting physicians in having the conversation and creating a plan. Facilitators are trained to connect patients back to physicians whenever necessary."

Hammes emphasized the importance of a team approach with clearly defined roles and responsibilities as well as proper preparation and training (including process and workflow development). Advance care planning is about understanding, reflection and discussion, he said, and it's a process that requires patient-centered communication skills and defined roles.

"Depending on available resources, interest, and expertise, each organization will select individuals for the advance care planning team," he said. "Once selected, each team member must understand his or her responsibilities and become competent to fulfill them. They also must understand the expectations of their fellow team members."

As a member of the Systems Engineering Initiative for Patient Safety at the University of Wisconsin-Madison, Dr Wetterneck studies quality and productivity improvement to improve patient care. "Honoring Choices Wisconsin is about shaping professional behavior and redesigning workflows to improve patient care," she said.

A geriatrician, Dr Lange is confident physicians, other health care professionals, and community members in large urban cities and small rural areas are ready – and in many cases, eager—for Honoring Choices Wisconsin. "It's not about one decision over another or a choice that cannot be changed," he said. "It's about having conversations so that physicians know patients' wishes and can respect their choices. These are very personal conversations that can be difficult to start but more often than not, patients—and their families—welcome the opportunity to talk about their care."

• • •

Prevention, Detection, and Community Benefit

John J. Frey, III, MD, Medical Editor

Guidelines make a difference, particularly in routine hospital management and operative and perioperative care.[1] However, guidelines often are developed by groups with differing data, different levels of objectivity, and different points of view.[2] With this in mind, Myklejord and colleagues[3] report the results of a pre/post study of the effects of consensus guidelines on reducing postoperative nausea and vomiting, knowing that an approach to the problem using an institution-wide process is a necessary requirement for attempting to measure change. While few of us will argue against individualized planning of care, the proven effects of widely adopted standards that are adhered to by all clinicians assure that the individualization takes place in a context of safety. This study from the Marshfield system should encourage other large systems in the region to follow their lead.

Physicians have many advantages in this country. Unlike other Americans, we have almost no risk of unemployment; a significant percentage of physicians will have incomes that put us in the 1% group and almost all of us will be in the 5% group; we engage in useful work and generally are respected by society. So why do we spend so much time talking about "burnout"[4] as our country struggles with enormous inequalities and unemployment? Some think that the term may be overdramatized and is really a workplace rather than a personal issue.[5] But, a letter in the *WMJ* over a century ago suggested the need for physicians to endow a recovery farm for "friendless, ill-treated, worn-out doctors."[6] The idea might not be all that far from Physician Health Committees and might, if the "farm" is populated by physicians who could learn to help each other, offer even more than individual therapy.

Physician behavior is an important contributor to both the positive and negative aspects of the workplace. The article by Krall and colleagues[7] reminds us of the obligations of the profession and of the institutions in which we work to help to mitigate the personal factors that contribute to "problem" physicians.[8] Their study shows that physician behavior is overwhelmingly the reason that physicians are referred to the Physician Health Committee at Marshfield Clinic. *(Disclaimer: I am a member of the Professional Conduct Committee at UW Medical Foundation.)* Such committees should primarily address prevention and remediation but have to be backed up by the systems in which they are grounded. Krall et al provide a review of physician health programs in the region and provide recommendations for a process that might lead to a better work environment, an increased sense of connection among physicians and colleagues and their families. Physicians risk the general goodwill of our patients and communities if we can't create systems of care that are respectful, responsive, and caring. To do that, we have to start with getting our own houses in order and avoid the "head in the sand" approach to problem physician behavior with robust and active prevention and support for those in trouble.[9]

Physicians risk the general goodwill of our patients and communities if we can't create systems of care that are respectful, responsive, and caring.

Hospitals have changed dramatically in the past 60 years from places controlled by medical staffs in the 50s to economic drivers of entire economies in cities like Houston, Boston, and New York controlled by corporate boards, both private and public.[10] In part to fulfill their tax-exempt status, nonprofit hospitals have had to show some portion of their annual revenues for community benefit. The Affordable Care Act requires hospitals to create a more transparent process that demonstrates the actual nature of community benefit activities. Bakken and Kindig[11] analyzed a year of Wisconsin hospitals and found that the largest percentage of what is categorized as community benefit was not in charity care or community health improvements but for unreimbursed Medicaid. As the country moves into an accelerated phase of health reform, one question for policy makers should be how hospitals, which accounted for

the largest expenditure (30.5%) of the $2.5 trillion in the United States in 2009,[10] should truly add to community benefit rather than increasing their own revenues.

The Health Innovations piece by Munson and colleagues[12] demonstrates how the elective introduction of a reagent test for *Trichomonas vaginalis*, which has a higher degree of sensitivity than traditional wet mounts, significantly increased both the screening for *T vaginalis* and the use of the test, and, therefore, the likelihood of detecting the infection. That the study was done in a population and city where the rate of both chlamydia and gonorrhea are among the highest in the country means that physicians also were testing more for those sexually transmitted infections as well, which is an important public health and preventive activity. Making testing less problematic for clinicians while increasing accuracy does improve care.

Finally, the case report of a not uncommon diagnosis—Wolff-Parkinson-White syndrome—which happens in an uncommon situation—an acute presentation in a young pregnant patient—provides a nice overview of current approaches to treatment of the problem overall and in particular, as applied to pregnancy.[13]

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Consensus Guideline Adoption for Managing Postoperative Nausea and Vomiting

Duane J. Myklejord, MD; Lei Yao, MD, PhD; Hong Liang, PhD; Ingrid Glurich, PhD

ABSTRACT

Objective: Postoperative nausea and vomiting (PONV) is a major source of patient dissatisfaction and is the leading cause of discharge delays and unanticipated postsurgical hospital admissions. The objective of this study was to examine the efficacy of PONV management consensus guidelines at the institutional level.

Design: Retrospective, cross sectional study.

Setting: Post-anesthesia care unit (PACU) at a 504-bed multispecialty referral center.

Participants: 300 adult surgical patients who underwent general anesthesia prior to institutional adoption of PONV management guidelines and 301 adult surgical patients who underwent general anesthesia following adoption of guidelines.

Methods: The records of 601 adult surgical patients were examined for documented treatment for PONV while in the PACU, length of PACU stay, medications administered perioperatively, and patient characteristics including number and type of PONV risk factors.

Results: Institutional incidence of PONV decreased from 8.36% to 3.01% following adoption of management guidelines ($P = 0.0047$). All patients who developed PONV had 3 or more risk factors, and the reduction in incidence is attributable to an overall increase in preoperative antiemetic prophylaxis ($P < 0.0001$), with a concomitant increase in multimodal treatment ($P < 0.0001$) and decrease in single modality treatment ($P = 0.0004$). Length of stay in the PACU increased approximately 15 minutes in patients with PONV, but did not reach statistical significance. Development of PONV was associated with the presence of greater than 3 conventional risk factors ($P = 0.009$), never smoker status ($P = 0.0009$), and surgery type.

Conclusions: Implementation of consensus PONV prevention guidelines significantly reduced incidence at an institutional level. However, patients with 3 or more risk factors remain at risk for PONV. Risk stratification remains important and greater intervention is required in this subgroup at our institution. In response to publication of procedural consensus guidelines, individual institutions should consider modification of practices and assessment of outcomes following application.

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CME available. See page 214 for more information.

INTRODUCTION

Both anesthesiologists and patients rate nausea and vomiting among the top clinical anesthesia outcomes to be avoided, and postoperative nausea and vomiting (PONV) is considered by many patients to be more distressing than postsurgical pain,[1,2] with cost of recovery increasing significantly in patients that develop PONV.[3] In the absence of pharmacological treatment, the rate of PONV is approximately 30% in the general population,[4] and can be as high as 70% in patients at highest risk.[5,6] Several risk factors have been delineated.[7] Those most strongly associated with PONV and used in clinical risk assessment include type of surgery, female gender, nonsmoker status, history of postoperative nausea and vomiting or motion sickness, and postoperative opioid use. The consequences surrounding PONV have prompted physicians, scientists, and drug companies to invest considerable effort into improving perioperative management, yet rates remain unacceptable.

Postoperative nausea and vomiting is a complex condition with a multifactorial etiology that encompasses both patient-specific and surgery-related risk factors and involves multiple physiological pathways in its origins. Historically, selection of pharmaceutical agents for its control and treatment varied across institutions based on personal preference, price, and availability. More recently, risk factors were defined to identify those at highest risk for developing PONV and for preoperative administration of prophylactic treatment.[8] In 2003, the first consensus guidelines that incorporated administration of pro-

Table 1. Comparison of Group Characteristics in Surgical Patients Before and After Guideline Implementation

	Group 1 (Before Guidelines) n=300	Group 2 (After Guidelines) n=301	*P*-value
Conventional Risk Factors			
Gender (female)	53.0%	54.5%	0.7150
Age (mean ±SD)	59.2 ± 17.6	60.4 ± 16.7	0.3827
History of PONV/motion sickness	9.0%	10.0%	0.6859
Length of surgery (mean±SD [minute])	109.4±74.2	105.4±65.1	0.4863
Length of surgery (> 2 hours)	34.0%	36.2%	0.5699
Nonsmoker status	45.5% (125/275)	45.6% (125/274)	0.9689
Obesity	37.2% (110/296)	46.5% (140/294)	0.0102
Use of postoperative opioids	68.7%	63.8%	0.2060
Use of intraoperative opioids	99.00%	98.67%	1.0000
Use of volatile anesthetics	100.0%	100.0%	1.0000
Greater or equal 3 risk factors	49.90%	50.10%	0.9871
Prophylaxis Treatment Comparisons			
Preoperative prophylaxis	32 (10.67%)	95 (31.56%)	<0.0001
Intraoperative prophylaxis	186 (62.00%)	197 (65.45%)	0.3793
Prophylaxis multimodal dose	46 (15.33%)	111 (36.88%)	<0.0001
Prophylaxis single dose	160 (53.33%)	117 (38.87%)	0.0004
No prophylaxis	94 (31.33%)	73 (24.25%)	0.0527
Rate of PONV	**8.36% (25/299)**	**3.01% (9/299)**	**0.0047**

Abbreviation: PONV, postoperative nausea and vomiting

phylactic antiemetic treatment based on risk score stratification were published.[9] These guidelines incorporated risk assessment and minimization and customized, multimodal, pharmacological treatment approaches for PONV management based on level of risk. The guidelines were updated in 2007 under the auspices of the Society of Ambulatory Anesthesia (SAMBA),[10] but their basic principles remain the same.[9,10] Since publication of the SAMBA guidelines, several studies have examined their appropriate implementation and efficacy, particularly in high-risk patients and before and after intervention with automated reminder systems.[11-13] However, no study has examined retrospectively the effect of guideline implementation at the institutional level following adoption by the institution's own accord and application by medical staff without prompting.

In 2005 the standard approach to management of PONV at our institution was modified to comply with the 2003 consensus guidelines, including identification of patients at risk for developing PONV, reduction of baseline risk factors, preoperative administration of recommended prophylactic treatment, and antiemetic treatment for patients with PONV in the post-anesthesia care unit (PACU), without repeat administration of failed drugs.[9] This revised approach was adopted to increase the likelihood of patient response to treatment, thereby increasing patient comfort and satisfaction, decreasing PONV-associated adverse events, and avoiding unnecessary exposure to ineffective medications.

The purpose of this study was to assess whether implementation of these guidelines had a significant impact on PONV incidence compared to historical incidence across our system. The rate of PONV improved, even though with the exception of guideline adoption, no other intervention for the promotion of guideline compliance was performed.

METHODS

Study Population

The historical PONV incidence rate at Marshfield Clinic in a 6-month period before publication of consensus guidelines was determined and compared to incidence in a 6-month period after guideline implementation. Following IRB approval, electronic medical record (EMR) interrogation identified 300 surgical patients with a documented PACU stay at St. Joseph's Hospital (SJH), a 504-bed multispecialty referral center in central Wisconsin, who underwent surgery between January 1, 2002 and July 1, 2002. Although the guidelines were not adopted institution-wide until 2005, the reference period was before initial guideline publication in order to preempt any potential learning bias by individual physicians. For comparison, chart interrogation identified 301 surgical patients at the hospital between September 2007 and May 2008, following adoption of the consensus guidelines. Adults > 18 years of age who received general anesthesia during surgery and recovered in the PACU were included in the study. Patients who underwent surgical procedures for which preexisting nausea and vomiting were likely to exist independent of the surgical context (endoscopies, colonoscopies, laparotomies) had gastrointestinal obstruction; presented with preoperative complaints of overt nausea, vomiting, or emesis; received local or monitored anesthesia care in the absence of general anesthesia administration; or had surgery for which no preoperative data were available (eg, emergent conditions such as emergency or trauma-related surgery) were excluded from analysis.

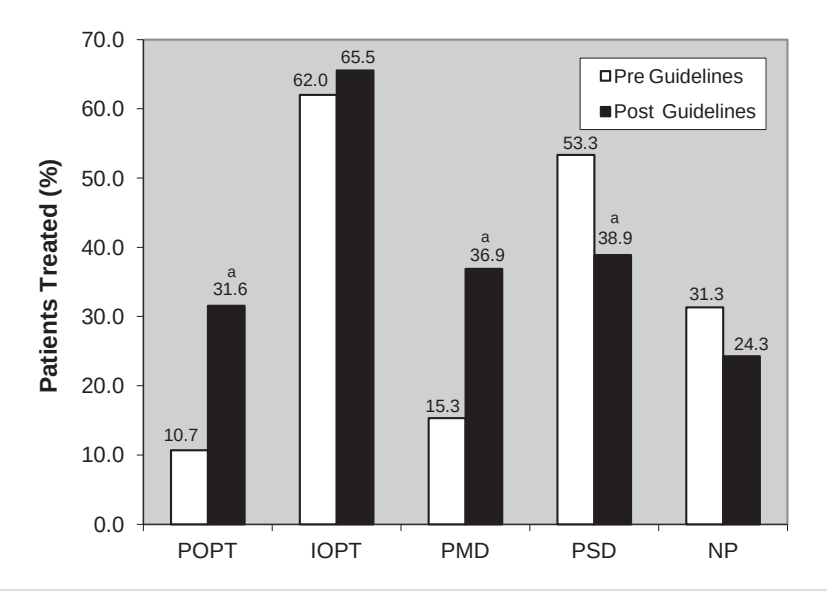
Patient data were collected for the primary outcome measures of PONV incidence rate and length of PACU stay in the pre- and postguideline implementation period. Secondary outcomes included change in rate of PONV at time of PACU discharge, rate of multimodal therapy application during perisurgical management, and characteristics (number and nature of risk factors) of patients experiencing PONV following guideline implementation. Medications administered preoperatively, intraoperatively, and in the PACU were abstracted to evaluate

potential association between treatment and change in PONV rate. Additional data collected for each patient included gender, age, height, weight, prior history of PONV, smoking status, and type of surgery. Manual chart review performed for feasibility purposes verified that all retrospective data points were reliably available in both study periods to allow for analysis of patient characteristics and risk factors for PONV. Data were quality assured by a reabstraction process on 10% of charts.

Statistical Analysis

Differences in conventional risk factors for PONV, prophylaxis treatment, and rate of PONV between preguideline publication and postguideline implementation were compared. Continuous variables were compared using a 2-tailed *t* test or Wilcoxon rank sum test and categorical variables were evaluated using chi-square test or the Fisher exact test when appropriate. In addition, the number needed to treat to prevent PONV following guideline implementation and its 95% CI were calculated. The same statistical methods described above also were used to evaluate the differences between the PONV and non-PONV groups. The association between PONV and surgery type was evaluated using chi-square test.

Figure 1. Prophylaxis Treatment Comparison



A statistically significant increase in overall preoperative prophylaxis treatment was noted ($P < 0.0001$) with a significant increase in multimodal prophylaxis ($P<0.0001$) and a significant decrease in single modality prophylaxis ($P = 0.0004$). The white bars represent the preguideline adoption time period and the black bars represent the postguideline adoption time period. The percent of patients treated with each type of prophylaxis is indicated above the bar.

[a] $P < 0.001$.

Abbreviations: POPT, Preoperative Prophylaxis Treatment; IOPT, Intraoperative Prophylaxis Treatment; PMD, Prophylaxis Multimodal Dose; PSD, Prophylaxis Single-modal Dose; NP, No Prophylaxis Treatment.

RESULTS

Comparison of Patients Before and After Guideline Implementation

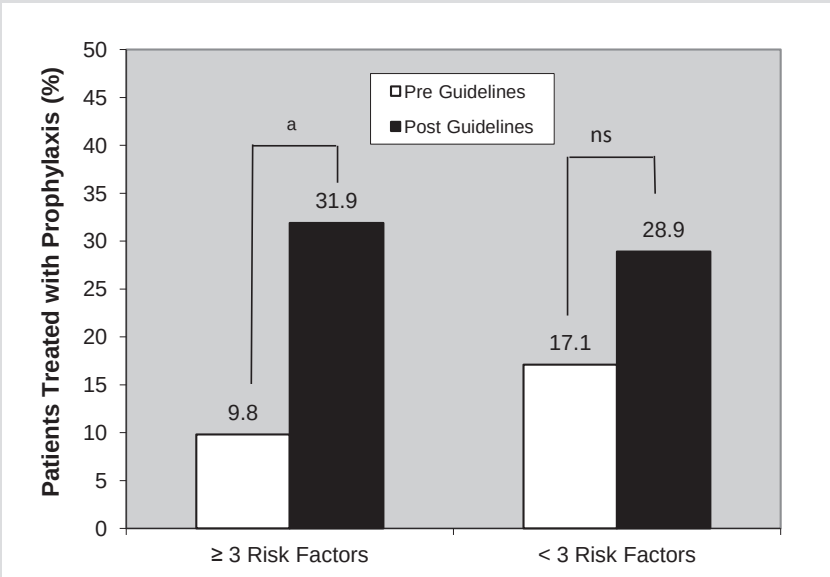
Characteristics of surgical patients before and after guideline implementation are shown in Table 1. The rate of PONV was significantly reduced after guideline implementation (3.01%) compared to the pre-guideline group (8.36%) ($P = 0.0047$). The number of patients who were given prophylactic treatment in the postguideline group in order to prevent 1 case of PONV (number needed to treat) was 19 (95% CI, 11-60).

Relative to conventional risk factors, only obesity was significantly different between the preguideline and postguideline groups, with more obese patients following guideline adoption ($P = 0.0102$). The percentage of patients treated with preoperative prophylaxis was significantly greater following guideline implementation ($P < 0.0001$). This increase can be attributed to a significant increase in multimodal prophylaxis administration in the period after guideline adoption ($P < 0.0001$), as single modality prophylaxis significantly decreased from pre- to postguideline adoption ($P = 0.0004$) (Figure 1). A higher percentage of preoperative prophylaxis treatment was noted in the postguideline adoption period in patients with 3 or more conventional risk factors (31.9% vs 9.8%, $P < 0.001$), but the difference in patients with fewer than 3 risk factors pre- and postguideline adoption (17.1% and 28.9%, respectively) was not significant (Figure 2).

Comparison of Patients With and Without PONV

This study included 34 patients who developed PONV. The characteristics of patients with and without PONV are shown in Table 2. All patients who developed PONV had 3 or more risk factors. In both study periods combined, 6.5% of patients with 3 or more risk factors developed PONV. Patients who were smokers had a lower PONV rate (2.68%) compared to patients who never smoked (9.24%) ($P < 0.0009$). For patients with PONV, the median length of stay in the PACU was longer by 0.245 hours (15 minutes) than patients without PONV. However, Wilcoxon rank sum test failed to detect a significant difference ($P < 0.1222$), likely due to the small number of patients that developed PONV.

Figure 2. Preoperative Prophylaxis Treatment for High- and Low-Risk Patients.



Prophylactic treatment increased in patients at both high- and low-risk for the development of PONV postguideline adoption (black bars) compared to the preguideline adoption time period (white bars). The difference was significant only for patients with 3 or more risk factors. The percent of patients treated with prophylaxis is indicated above each bar.

Table 2. Comparisons of PONV and Non-PONV groups

	PONV	Non-PONV	*P*-value
High and Low Risk	**n=34**	**n=564**	
Number of risks >3	34 (6.59%)	482 (93.41%)	0.0090
Number of risks <3	0 (0.00%)	82 (100.00%)	
Smoking Status	**n=31**	**n=517**	
Smoker	8 (2.68%)	291 (97.32%)	0.0009
Never Smoker	23 (9.24%)	226 (90.76%)	
LOS in PACU	**n=34**	**n=540**	
Hours (Median)	2.165 (1.080-4.330)	1.920 (0.330-5.830)	0.1222

Abbreviations: PONV, postoperative nausea and vomiting; LOS, length of stay; PACU=post-anesthesia care unit.

Whether dexamethasone as monotherapy prevents PONV is not entirely clear, but it appears to perform better in combination with other prophylactic agents.[14] Of the 68 patients who received dexamethasone prophylactically, 5 received it as monotherapy. Postoperative nausea and vomiting occurred in 1/5 (20%) of patients who received dexamethasone as monotherapy and in 3/63 (4.76%) of patients who received dexamethasone as part of a multitherapy regimen. However, this difference was not significant ($P<0.2686$), possibly due to the small sample size.

PONV Rate By Surgery Type

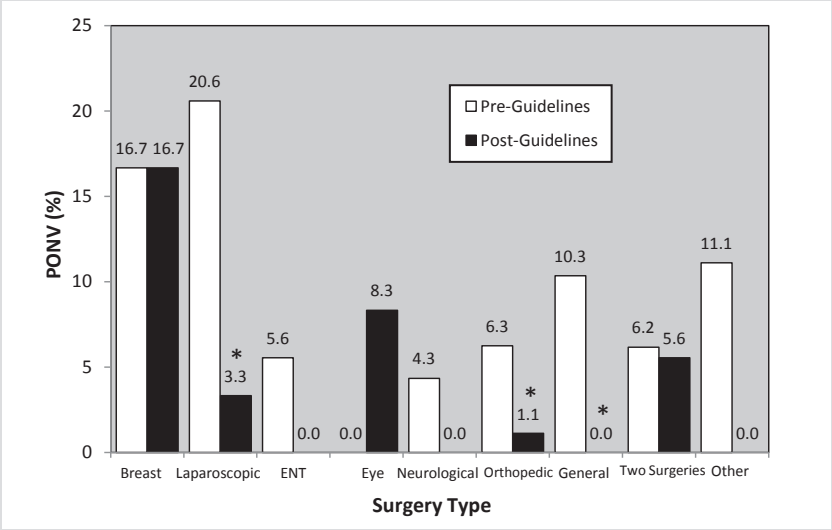
The highest rate of PONV was observed in patients undergoing breast surgery (16.67%) and lowest in patients undergoing neurological surgery (2.44%). Rates of PONV by surgery type in each study period are shown in Figure 3. Guideline implementation resulted in a significant decrease in PONV rates in laparoscopic gynecological, orthopedic, and general surgery. In the literature, breast and laparoscopic surgery are reported to be associated with the highest rates of PONV.[15-17] In this study, surgeries were categorized into high- and low-risk groups: Group A (breast and laparoscopic gynecological surgeries) and Group B (ear, nose, and throat [ENT], eye, neurological, orthopedic, general, two surgeries and others). The difference between the two groups in the pre- and postguideline adoption time periods is shown in Figure 4. Chi-square test revealed that the difference in PONV rate between Group A and Group B was statistically significant over both study periods combined (13.16% vs 4.60%, respectively, $P=0.0026$), with more PONV occurring in patients in the high-risk group, as expected. The same was true during each study period assessed separately. Importantly, guideline adoption affected a decrease in the rate of PONV following both high- and low-risk surgeries, though the magnitude of the change was much larger in the high-risk group.

DISCUSSION

In addition to the obvious discomfort and distress experienced by patients with PONV and the additional burden placed on caregivers, PONV also is associated with considerable adverse impact on patient health. Complications may include airway obstruction, aspiration of vomitus with the potential for aspiration pneumonia, wound disruption, increased intracranial pressure (of particular concern in neurosurgical patients), dehydration and electrolyte imbalance, delay in administration of oral analgesia or other pharmaceuticals, exhaustion, interference with nutrition, and delay in mobilization and recovery.[18] Because patients are so adversely affected by PONV onset, it is important to address this problem aggressively and effectively.[1,2] In June 2005, the 2003 consensus guidelines published by Gan et al[9] were adopted as standard of care at our institution. This study was performed following adoption of the guidelines to assess the relative reduction of PONV incidence compared to historical data.

The incidence of PONV was significantly reduced from 8.36% to 3.01% following guideline adoption. Our results demonstrate that adoption of the guidelines for the management of PONV reduced incidence at the institutional level. These findings are consistent with the results of other studies regarding the use of risk assessment in determining the need for prophylaxis,[19,20] the utility of specific drug combinations in prevention,[21] and the benefit of guideline compliance in subsets of patients at high risk,[12,13] especially with the use of proactive intervention to promote physician compliance.[11] Until now, however, no retrospective, cross-sectional study of the efficacy of consensus guidelines for the prevention of PONV has been performed at an institution that adopted guidelines of their own accord and applied them without prompting of the medical staff to promote compliance. This is the first study to demonstrate in a broad sense the efficacy of guideline implementation at the institutional level in the absence of intervention.

Figure 3. Postoperative Nausea and Vomiting (PONV) Rate by Surgery Type.



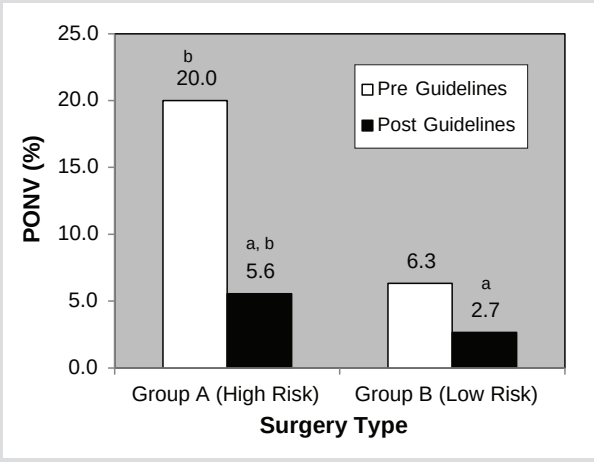
The white bars represent the pre-guideline adoption time period and the black bars represent the post-guideline adoption time period. With the exception of eye surgery (0/13 patients with PONV pre-guidelines, 1/12 post-guidelines), the PONV rate either decreased or stayed the same for all other types of surgery. Significant decreases were noted for laparoscopic gynecological, orthopedic, and general surgery following guideline implementation. PONV rates were highest overall for breast and laparoscopic surgery. The percent of patients that developed PONV undergoing each surgery type is indicated above each bar.

[a]$P < 0.05$.

Risk factors for PONV were evenly distributed in the pre- and postguideline groups, with the exception of obesity. While obesity is often cited as a risk factor for postoperative nausea and vomiting,[7] a systematic review of the literature found no evidence of a correlation between body mass index and PONV,[22] suggesting that the efficacy of guideline implementation was unlikely to be altered by the increased number of obese patients in the postguideline implementation group. We attribute the statistically significant decrease in the rate of PONV to recognition of high-risk patients, better drug selection, avoidance of repetition of the same drug, and utilization of a multidrug approach to target multiple pathways triggering PONV onset, as described in the guidelines.[9] Patients more frequently received preoperative antiemetic treatment in the postguideline period and had better outcomes. Interestingly, following guideline adoption, single modality treatment decreased while multimodal prophylaxis and prophylaxis for patients with 3 or more risk factors for PONV increased.

In the present study, all patients who developed postoperative nausea and vomiting had 3 or more risk factors, and the presence of 3 or more risk factors during presurgical screening was significantly associated with PONV incidence, as has been demonstrated in several other studies.[23] The risk factors

Figure 4. Postoperative Nausea and Vomiting (PONV) Rate in Different Surgery Groups



Group A consisted of high-risk surgeries including breast and laparoscopic gynecological surgeries; and Group B consisted of low-risk surgeries including ear, nose and throat (ENT), eye, neurological, orthopedic, general, two surgeries, and others. The percent of patients in each group that developed PONV in the pre- (white bars) and post- (black bars) guideline implementation time periods is indicated above each bar. Patients undergoing high risk surgery were more likely to develop PONV and implementation of guidelines resulted in a decrease in PONV in both the high-risk and low-risk surgery groups.

[a]$P < 0.05$ compared to preguideline implementation.

[b]$P < 0.01$ compared to low risk surgery group.

for development of PONV that achieved statistical significance in this study were consistent with those defined previously in the literature. Never-smoker status was significantly associated with the development of PONV with a history of smoking decreasing incidence by 7% in our study. Thus, smoking seems to be a protective factor against development of PONV, confirming findings in previous studies.[8,17] Additionally, when PONV incidence was evaluated by type of surgery, the highest rate was observed in conjunction with breast surgery, consistent with the literature.[15-17] Since breast surgery by itself has a significantly high rate of PONV and guideline implementation had no effect on incidence, administration of multidrug therapy prophylaxis to patients undergoing breast surgery appears advisable.

Patients in the PACU presenting with postoperative nausea and vomiting had a 15 minute longer length of stay on average than patients who did not develop PONV. However, this difference did not achieve significance, which is likely attributable to the low number of patients that developed PONV. Since PACU stay is charged per 30 minute intervals at our institution, a higher cost for stay would be associated with the management of patients with PONV while in the PACU, consistent with the literature.[3] Decreased incidence following guideline adoption may have helped to ameliorate some of this excess cost.

In recent years, a multimodal approach to PONV prophylaxis has been used as an alternative strategy to repetitive dosing with, or dose escalation of, a single medication in order to target more potential etiological pathways.[24] In the present study, when comparing patients who received single agent treatment to those treated with multidrug combinations, no significant differences in PONV rate were detected. However, from pre- to postguideline adoption, an overall increase in the percent of patients receiving antiemetic prophylaxis and a significant improvement in outcome were observed. The increased administration of preoperative prophylaxis corresponded with a significant increase in the rate of multimodal prophylactic treatment and a significant decrease in the rate of single modality treatment, suggesting that the increase in multimodal treatment may play an important role in the reduction of PONV incidence.

As demonstrated by this study and others, adoption of a risk-based PONV management program can reduce incidence institutionally.[19,20] However, even with proactive intervention to promote guideline compliance, PONV incidence does not reach 0%.[11,13] The inability of institutions to eradicate PONV in spite of the large body of scientific literature surrounding its management is a topic of current debate.[25] Some advocate for improved implementation of risk-based antiemetic administration,[23] while others have suggested that the idea of risk-based management should be discarded and that a liberal antiemetic prophylaxis approach should be taken with all surgical patients.[26] Importantly, in 2007 it was demonstrated via computer simulation that of 10 current algorithms for PONV management, none were universally applicable across different patient populations and institutions.[27] Therefore, others have suggested that there is a need for individual institutional policies based on local incidence as well as the demands of the patients and surgeons.[26] At our institution, we were able to detect a significant reduction in the incidence of PONV following institution-wide adoption of consensus management guidelines. We also observed a significant increase in prophylactic therapy, particularly multimodal antiemetic prophylaxis, following guideline adoption. We advocate similar individual institution-based studies to determine the best mode of PONV management for the local situation.

A limitation of this study is the lack of assessment of guideline compliance. While the guidelines were adopted institution-wide, no specific intervention program was undertaken to promote medical staff compliance. The exact percentage of high-risk patients treated in accordance with the institutional guidelines is unknown. Following application of an institution-wide, automatic decision support system, Kooij et al[11,13] found a guideline adherence rate of only 70% to 80%, suggesting that compliance may not have reached 100% in our study. Regardless, a rate of PONV of 3.01% institution-wide is relatively low. Based on the data presented here, we are unable to determine whether the 3% of patients that developed PONV following guideline adoption was due to non-compliance with the guidelines, imperfections in the risk-assessment system,[26] lack of patient response to antiemetic prophylactic therapy, or the presence of other unknown risk factors. We also were unable to examine a complete list of all PONV risk factors that may have affected outcomes. For example, data regarding length of surgery were not collected, although it is known that longer surgery—and thus longer time under anesthesia—increases the risk of PONV, and we cannot rule out the possibility that it may have had an effect on PONV incidence. Additionally, as pharmaceutical antiemetics and pain management procedures continually improve, we cannot account for what portion of the reduction in PONV incidence following guideline implementation may have been the result of the availability of improved medications and procedures (ie, epidural catheters and nerve blocks for postoperative analgesia). It remains to be seen if a customized process to increase guideline compliance at our institution could further reduce the incidence of PONV.

CONCLUSION

At our institution, adoption of the 2003 consensus guidelines[9] reduced the incidence of PONV from 8.36% to 3.01%. Despite the significant reduction, PONV management at our institution leaves room for institution-specific improvements in order to optimize the effect of guideline implementation on patient

clinical outcomes. Based on evidence to suggest that algorithms for PONV management are not universally applicable between different patient populations and institutions,[27] we advocate serious consideration of published consensus guidelines and the performance of similar institution-specific studies for the purpose of evaluating guideline efficacy at the institutional level and to determine areas for institution-specific improvement.

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CME

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Quiz: Consensus Guideline Adoption for Managing Postoperative Nausea and Vomiting

EDUCATIONAL OBJECTIVES

1. Understand the risk factors that aggravate postoperative nausea and vomiting.
2. Understand the impact of implementing consensus prevention guidelines for postoperative nausea and vomiting within an institution.
3. Understand the role of a customized, multimodal, pharmacological treatment approach for postoperative nausea and vomiting.

PUBLICATION DATE: October 15, 2012

EXPIRATION DATE: October 15, 2013

QUESTIONS

1. Which of the following risk factors are associated with an increased risk of postoperative nausea and vomiting (PONV):
   A. Obesity
   B. Non-smoker status
   C. Type of surgery
   D. History of PONV or motion sickness
   E. Postoperative opioid use

- ❑ All of the above
- ❑ B and D only
- ❑ C, D and E only
- ❑ All except A
- ❑ B, C, D only

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You may earn CME credit by reading the designated article in this issue and successfully completing the quiz (75% correct). Return completed quiz to *WMJ* CME, 330 E Lakeside St, Madison, WI 53715 or fax to 608.442.3802. You must include your name, address, telephone number, and e-mail address.

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2. The authors of this study found the following changes after implementing guidelines for postoperative nausea and vomiting (PONV):
   A. The incidence of PONV was reduced from about 15% to about 3%.
   B. Nearly 3 times as many patients received preoperative prophylaxis.
   C. Significantly more patients received intraoperative prophylaxis.
   D. Significantly fewer patients received single-dose prophylaxis.

- ❑ All of the above
- ❑ A, B and D only
- ❑ B and C only
- ❑ A and D only
- ❑ B and D only

3. Which of the following statements are true?
   A. In the absence of pharmacological treatments, the rate of PONV is approximately 30% general population, and can be as high as 70% in patients at high risk.
   B. In this study, the only patients who developed PONV had 3 or more risk factors.
   C. In this study, the use of a multimodal treatment plan appeared to play important role in the reduction of PONV.
   D. The types of surgery that appear to have the lowest overall incidence of PONV include breast and laparoscopic surgeries.

- ❑ All of the above
- ❑ A and B only
- ❑ A, B, and C only
- ❑ A and D only
- ❑ B and C only

4. In this study, the overall incidence of PONV was reduced following the institution of management consensus guidelines for PONV, and this reduction was associated with an overall increase in preoperative antiemetic prophylaxis, with a concomitant increase in multimodal treatment and a decrease in single modality treatment.

- ❑ True
- ❑ False

Is Hospital 'Community Benefit' Charity Care?

Erik Bakken, BA; David A. Kindig, MD, PhD

ABSTRACT

Context: The Affordable Care Act is drawing increased attention to the Internal Revenue Service (IRS) Community Benefit policy. To qualify for tax exemption, the IRS requires non-profit hospitals to allocate a portion of their operating expenses to certain "charitable" activities, such as providing free or reduced care to the indigent.

Objective: To determine the total amount of community benefit reported by Wisconsin hospitals using official IRS tax return forms (Form 990), and examine the level of allocation across allowable activities.

Design: Primary data collection from IRS 990 forms submitted by Wisconsin hospitals for 2009.

Main Outcome Measure: Community benefit reported in absolute dollars and as percent of overall hospital expenditures, both overall and by activity category.

Results: For 2009, Wisconsin hospitals reported $1.064 billion in community benefits, or 7.52% of total hospital expenditures. Of this amount, 9.1% was for charity care, 50% for Medicaid subsidies, 11.4% for other subsidized services, and 4.4% for Community Health Improvement Services.

Conclusion: Charity care is not the primary reported activity by Wisconsin hospitals under the IRS Community Benefit requirement. Opportunities may exist for devoting increasing amounts to broader community health improvement activities.

INTRODUCTION

The term "community benefit" refers to the 1969 Internal Revenue Service ruling defining the charitable obligations of nonprofit hospitals as a condition of their tax–exempt status. While non-profit hospitals have received tax exemption for many years, it was not until the early 20th century that hospitals were required to meet certain criteria to qualify for the exemption.[1] Prior to the enactment of the 1969 community benefit standard, hospitals were governed by a financial ability standard, which specified that nonprofit hospitals must provide free or low-cost services to those unable to pay.[2] Although no formal benchmarks existed for the amount of benefit a hospital was to provide, several tax exempt experts have stated that the IRS used a general standard of 5% of operating expenses to qualify for tax exemption.[3,4]

Previous reports have reviewed the history and importance of this policy in considerable detail.[5-9] The current policy environment for community benefit began with the IRS Revenue Ruling 69-545 of 1969, which allowed for more activities to be counted toward tax-exemption but failed to establish concrete standards.[2] In 2006 the Congressional Budget Office (CBO) estimated that in 2002 the total national forgone tax revenues were $12.2 billion.[9] They also used 2003 Medicare data for 5 states and calculated that nonprofit hospitals had an "uncompensated care share" of 4.7% of expenses.[9] Using a unique Maryland data set, Gray and Schlesinger reported total community benefits of 7.4% in 2005.[10] More recently a 2009 California hospital survey[11] showed that 14% of community benefit was reported for charity care, 63% for unreimbursed government programs, and 23% for other community benefits.

However, ambiguity remained regarding what exactly counted as community benefit, leading the IRS in 2008 to standardize the Form 990 filing required for tax exemption to the current 8 categories listed below.[12] This measure came following several previous legal challenges to hospital tax status and congressional hearings into the community benefit standard in 2006, led by Senator Chuck Grassley of Iowa.[12] More recently, community benefit has received more attention through provisions of the Affordable Care Act requiring more

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detailed reporting of content category in the revised Form 990 Schedule H.[13]

To understand the scope and amount of activity reported under this provision, we examined the Form 990 filings for Wisconsin hospitals for 2009, the first year the revised form was required. We believe this is the first peer-reviewed report of the new 2009 data, in which we examine what level and type of community benefit was reported during this year in Wisconsin, and provide brief commentary on some aspects of community benefit policy options.

METHODS

The data were derived from electronic copies of 2009 IRS Form 990 nonprofit tax filings from the Guidestar website.[14] Guidestar hosts a financial database on the nonprofit sector that directly posts copies of original tax filings and similar financial documents of non-profit organizations, obtaining its data directly from the IRS. One hundred twenty-seven of the 131 Wisconsin nonprofit general hospitals, satellite facilities, and children's hospitals were examined; 4 small rural facilities were omitted due to unavailability of data. We examined 108 forms for the 127 facilities, since health systems often file multiple facilities on the same form. The data were analyzed statewide and by hospital size categories—large hospitals with revenues greater than $300 million (n = 17), medium hospitals with revenues less than $300 million but greater than $100 million (n = 23), and small hospitals with revenues less than $100 million (n = 68). We used these categories based on a comprehensive national survey of community benefit conducted by the American Hospital Association in 2012.[15]

There are 8 categories of allowed community benefit activity reported on the 990 filings. These are defined in IRS guidelines as follows:[16]

- *Financial assistance at cost*, commonly referred to as charity care. This is free or reduced-cost care provided to those financially unable to afford treatment, such as the underinsured or those not enrolled in Medicaid.
- *Unreimbursed Medicaid*, which is the "net cost" to the organization for providing these programs. It is the disparity between cost of treatment for Medicaid patients and the government reimbursement rate.
- *Other unreimbursed means-tested government programs*, which is the "net cost" to the organization for providing these programs. It is the disparity between cost of treatment for these patients and the government reimbursement rate.
- *Subsidized health services* are clinical inpatient and outpatient services provided by the hospital, despite a financial loss, that would be otherwise undersupplied to the community. Typically these are services with thin or negative profit margins for the hospital, such as burn units, and meant to insulate the hospital financially for providing these services.
- *Community health improvement services* include activities or programs subsidized by the organization for the express purpose of community health improvement, documented by a community health needs assessment. Examples include immunization programs for low-income children or diabetes health education courses.
- *Health professional education* includes the net cost associated with educating certified health professionals.
- *Research* includes the cost of internally funded research as well as the cost of research funded by a tax-exempt or government entity.
- *Cash and in-kind contributions* include contributions, monetary or otherwise, to community benefit activities made by the organization to community groups. These activities must be marginally health related, such as partially sponsoring a local, open athletic race.

There are 3 additional supplemental categories that are reported but not allowed to be counted as community benefit. During the reformation and standardization of Form 990 in 2008 by the IRS, many stakeholders such as the Catholic Hospital Association and the American Hospital Association were consulted to determine what should be counted as community benefit.[12] Although some of the consulted organizations urged the inclusion of one or more of the supplemental categories, the IRS chose to omit them, yet still required their reporting on the 990 form. These supplemental categories are:

- *Bad debt*, which includes the portion of bad debt that the organization believes could be of community benefit.
- *Unreimbursed Medicare*, which includes the surplus or shortfall from the organization's Medicare Cost Report.
- *Community building expenses*, which protect or improve community health and safety, including housing, economic development, environmental improvement, leadership development, and coalition building.

RESULTS

In 2009, $1.064 billion was reported as community benefit by nonprofit hospitals in Wisconsin (Table 1). This represents on average 7.52% of total expenses, and ranged from -2.59% to 20.5%, the negative being the result of a regulation accounting anomaly across the 108 forms examined. Some variation in overall provision of community benefit existed among the 3 size categories of hospitals, posting figures of 8.05%, 7.60%, and 7.34% of total expenses, respectfully. However, this small amount of variation was expected based on the financial capabilities of the larger versus smaller facilities.

This table also displays the total amount and percentage of

expenditures reported across the 8 allowable categories. The 3 largest amounts reported are for unreimbursed Medicaid at 3.95%, subsidized health services at 1.29%, and charity care at 1.26% of total expenditures. There is small variation in these distributions across the 3 hospital size categories, with the 2 greatest variations occurring in the education and subsidized services categories between large and small hospitals (data not shown). In the education category, large hospitals outspent small hospitals relative to total expenditures by 1.19%. In the subsidized services category, small hospitals spent 0.8% more than large ones.

Table 1. Wisconsin 2009 Community Benefit Reporting

State Totals	Total (US dollars)	Average Percent (of total expenditures)	Percent Range
Charity care	96,629,458	1.26	0-9.50
Unreimbursed Medicaid	536,292,658	3.95	-3.77[a]-9.02
Other means tested government programs	12,908,862	0.11	0-2.70
Community health improvement services	47,137,597	0.40	0-7.10
Health professionals education	136,358,971	0.37	0-6.38
Subsidized health services	121,300,534	1.29	0-17.78
Research	15,951,185	0.04	0-1.48
Cash and in-kind contributions	18,194,501	0.16	0-1.14
Community benefit total	1,064,802,784	7.52	-2.59*-20.50

[a]These negative numbers come from 4 hospitals due to 2009 hospital tax assessment revenues and differences between calendar year and fiscal year dates. However, negative figures were listed on only 2 of the 108 forms examined, with a negligible effect of the overall data.

The 3 supplemental categories reported but not allowed to be counted as community benefit add a total of $760.7 million to the reported amounts, and if allowed would add 4.56% of expenditures to those in Table 1. Unreimbursed Medicare is by far the largest contributor to this total (Table 2).

Table 2. Wisconsin 2009 Form 990 H Supplemental Category Reporting

Supplemental Categories	Total Expenditures (in US dollars)	Average Percent of Expenditures
Community building expenses	8,512,232	0.08
Bad debt attributive to charity care	25,923,373	0.35
Unreimbursed Medicare	726,280,309	4.13
Supplemental measures total	760,715,914	4.56

DISCUSSION

Based on the policy history of hospital tax exemption through the provision of charity care, many others—including the authors—might have expected that charity care would be the primary activity reported as community benefit. This is not the case in Wisconsin (and likely elsewhere) since charity care is only 9% of the $1.06 billion reported in 2009. About half is in the unreimbursed Medicaid category, followed by education and subsidized services at 12% and 11% respectively. Very little community benefit funds are reported for community health improvement—only 4.4% of all community benefit dollars. Community building, though not directly counted, constitutes an even lower portion of overall expenditures.

If the Affordable Care Act achieves its policy goals, it will likely reduce considerably the need for charity care and potentially expand Medicaid in many states, including Wisconsin. However, if the need for charity care is reduced as predicted, community benefit has the potential to become a significant funding stream to create and expand public and community health initiatives throughout hospital service areas.

A full community benefit policy analysis is beyond the scope of this paper. Legitimate discussion has taken place about whether there should be a threshold or minimum amount of community benefit required, or for certain allowable activities.[8] However, in states that established such a threshold (eg, Texas at 5% of expenses), the overall levels of community benefit have sometimes declined slightly as hospitals under and over the benchmark converged near the marker.[17]

Ensuring that hospitals are fulfilling their community obligations is significant however, considering the amount of forgone tax revenues at stake if they were actually taxed. The most recent national estimate of the amount of taxes these nonprofits would have to pay if they were for-profit entities was $12.6 billion for 2002 by the CBO in 2006;[7] this included local property tax ($3.1 billion), state and local sales taxes ($2.8 billion), federal corporate income tax ($2.5 billion), tax exempt bond financing ($1.8 billion), charitable contributions ($1.8 billion), and state corporate income tax ($0.5 billion).

This study was stimulated by our belief in the need for dependable revenue streams to support the multiple determinants of health beyond health care including behaviors, the social environment, and the physical environment.[18,19] There is currently no standard for the allocation across the 8 categories on the 990 form. Legitimate discussion could include whether one government program (IRS) should subsidize others (Medicaid or other means-tested government programs, such as State Health Insurance Assistance Program [SHIP]), the cost basis for the subsidized categories, the basis for determining which subsidized services might not otherwise be provided to the community, and whether these losses are unique to nonprofit hospitals.

Regarding the supplemental categories, court cases have

acknowledged that "beneficial community impact" can go beyond mere community benefit. However, a recent unpublished analysis by the American Hospital Association of 571 IRS 2009 Form 990s across the nation reported an average 11.3% total community benefit, but this figure includes the 2.4% Medicare "unallowable" shortfall.[15] They also report 8.4% in a combined community benefit category but do not separate out charity care, the Medicaid shortfall, other means-tested government programs, subsidized services, or other components as done here. It is not clear why subsidizing unreimbursed Medicare is not considered allowable community benefit, while unreimbursed Medicaid and other "subsidized services" programs are allowed.

We recognize the many important community health activities carried out by both large and small hospitals; indeed, in this study some hospitals reported up to 7% in the community health improvement services category. While there appears to be some flexibility and indistinctness in 2011 IRS guidance with community building supplemental services and the definition of allowable community health improvement services ("reduce geographic, financial, and cultural barriers to accessing health services, leverage or enhance public health department activities"), many of those specified as not allowable under the supplemental Schedule H are exactly those required for broad population health improvement, such as economic development and multisector coalition building.[20]

The Wisconsin Hospital Association (WHA) also publishes an annual report on community benefit using information from their own annual survey;[21] their results are similar to those reported here, although the categories are not identical since the WHA used the categories suggested by the Catholic Health Association. Similar analysis from other states and future years is needed to determine if the patterns seen in Wisconsin apply to larger states, or to those with more uninsured individuals or lower Medicaid payment rates. The WHA commented that the larger amounts in unreimbursed Medicaid in 2009 are likely due to concurrent expansion of the BadgerCare program in Wisconsin. It is also possible that future years might show different results, since 2009 was at the bottom of a recessionary period.

CONCLUSION

It is increasingly accepted that improving the health of our communities will require slowing the growth in health care spending and making increased investments in public health, prevention, and the social and environmental determinants of health. As the need for charity care declines under health reform, it would seem appropriate for community benefit activities to increasingly reflect and contribute to these needs. We would hope that the community health assessment processes initiated under the Accountable Care Act would identify the priority for many of the activities currently not allowed as community building to be allowed and encouraged. As community benefit expert Kevin Barnett recently stated, "exclusion of these kinds of activities sends a message that nonprofit hospitals should not be seeking to address the underlying causes of persistent health problems ... we should be encouraging rather than impeding hospital engagement of diverse stakeholders to address the underlying causes of health problems in local communities. Increased awareness and joint advocacy between hospitals, public health institutions, and communities is needed to correct this error."[19]

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The Status of Physician Health Programs in Wisconsin and North Central States: A Look at Statewide and Health Systems Programs

Edward J. Krall, MD; Shehzad K. Niazi, MD, FRCPC; Michael M. Miller, MD

ABSTRACT

There is increased recognition of the importance of physician health and the need to actively maintain and promote it. Attending to the health and well-being of medical clinicians is considered an important component of professionalism, and is important for the sustainability of safe, high-quality practice of medicine. This report highlights the importance of physician health programs, describes their history and evolution as well as the variability in program structure in various states, and reviews the present status of physician health resources, especially in Wisconsin. It gives an example of a program within a large, integrated health system and emphasizes the advantages of a statewide program.

INTRODUCTION

The intellectual, emotional, physical, and social demands of medical training are rigorous, as are the professional and personal demands of medical practice. Physicians make many sacrifices for the privilege of taking care of others. The good news is that most physicians thrive in their work environments and practice excellent strategies to safeguard their own well-being, and most physicians enjoy productive, long, and healthy lives.[1]

However, medical practice can exact a toll. Reported rates of physician burnout range from 25% to 67%.[2,3] Authors note, "Medicine becomes a strain only when a physician asks himself to give more than he has been given."[4] Some factors that contribute to physician stress and burnout include a perceived loss of autonomy, a perceived decrease in control over one's practice environment, and inefficient use of time attributed to administrative requirements.[5] Other factors that cause stress for physicians include workload, specialty choice, practice setting, sleep deprivation, lack of work-life balance, medical errors, risk of malpractice suits, characteristics of "difficult" patients, and how to deal with patient death and illness.[2,6] Female physicians face stresses specific to their gender and their historically minority status within the profession of medicine.[7-9]

When physicians' personal well-being and professional commitment are balanced, positive synergies result that sustain them in their profession and ultimately benefit patients and the health care system as a whole.[10] When these are not in balance, there is a risk for poor patient care,[11] which can be measured both as patient satisfaction (the patient's subjective experience of the care encounter) and as patient outcomes (objective measures of clinical results and rates of medical errors). Stress can lead to burnout, not only affecting quality of life for the physician and his/her family,[12] but also adversely affecting or impacting the health care team, as well as the "end-user" of clinical interventions–the patients. Physician stress can lead not only to medical errors,[13] but potentially also to reduced productivity, loss in revenue, and suboptimal performance. Improving physician health may benefit individual physicians, their patients, the health care organizations in which they work, and the well-being of spouses and children in "the medical family."[14] This can have serious implications for the medical profession and society as a whole.[15]

Physician Health Comes of Age

With the increasing recognition of risk factors and vulnerabilities, there has been parallel progress in the last 50 years in awareness of the importance of attending to physician health. The phrase "physician health" for many decades was a euphemistic reference to struggles with addiction, and it has been only in the last several decades that it has become acceptable

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and necessary to address physician health in a more comprehensive way.[16]

In Canada, physician health is identified as one of the essential competencies to achieve sustainability in practice.[16] In the United States, the American Medical Association (AMA) has developed policies[17] which state that the medical profession has an obligation to ensure that its members are able to provide safe and effective care. The AMA states that physicians are role models for their patients and colleagues, and that status makes their own personal health a factor in health promotion. Work by Frank et al[18] has shown that physicians who practice healthy behaviors for themselves are more likely to talk to their patients about these issues. The AMA has furthermore stated, "It is imperative to recognize and support personal health at each stage of professional development, as medical students, residents, and practitioners."[19]

Indeed, the physician health movement is now international in scope. The British, Canadian, and American Medical Associations have developed an International Physician Health Conference[20] that convenes every other year in rotating sites. The importance of physician health also has been noted by the American Society of Addiction Medicine, which adopted a comprehensive set of 11 public policy statements on the topic in 2011.[21]

A Brief History of Statewide Physician Health Programs

The development of physician health programs began in the late 1950s and early 1960s, when the Federation of State Medical Boards recognized an unmet need as a result of problems observed in disciplinary actions against licensed physicians.[22] In 1973, an article in the *Journal of the American Medical Association* entitled "The Sick Physician"[23] increased awareness and noted that discipline alone did not address the illness when physician illness was the explanation of subpar performance or unprofessional conduct by a licensee. In the 1980s, states began to form physician health programs, and physician support meetings called Caduceus meetings sprang up. In 1990, the Federation of State Physician Health Programs (FSPHP) was formed and facilitated the development of physician leadership in this area while creating a national forum for the various state programs to share concerns and network with each other. In the 1990s, Physician Health Programs (PHP) started collecting data which, when analyzed and published in 2008, confirmed that providing confidential programs encouraged referrals, and that monitoring was associated with high rates of treatment success with the health conditions that have the potential to lead to professional impairment.[24,25]

In 2001, the Joint Commission (then the Joint Commission on Accreditation of Healthcare Organizations [JCAHO]) published its accreditation standard on physician health, requiring hospitals and other accredited health care organizations to develop a confidential process of referral for assessment and treatment for physicians in need of a health intervention, one that would offer the physician support, intervention, and advocacy and would reside outside of the usual disciplinary structures of credentialing and privileging activities of the hospital/clinic medical staff (JCAHO Requirement MS 4.80, 2001). See boxes 1 and 2.

Wisconsin was one of the first states to adopt a statewide program. It was developed and administered by the State Medical Society (SMS) of Wisconsin, the professional organization of physicians. The Wisconsin Statewide Impaired Physician Program used designated staff from the SMS's Council on Peer Review to operate the program, with a managing committee appointed by the SMS's Board of Directors, and a part-time paid medical director retained by the managing committee to operate the program. Over time, the name was changed to the Statewide Physician Health Program. However, on October 15, 2007, the SMS's Board of Directors voted to discontinue the operations because of inadequate funding. This left Wisconsin without an independent statewide resource for treatment and advocacy for impaired physicians. Currently, Wisconsin is one of few states without a state PHP that is a member of the FSPHP. There is a monitoring program administered by the state government, called the Professional Assistance Procedure (PAP), which is focused on monitoring versus offering advocacy when physicians face discrimination based on their health or licensure status. The program was established for non-physician health professional licensees such as nurses, pharmacists, dentists, veterinarians, and others. That program was a classic "diversion program" that would receive referrals from the individual's relevant professional licensure board and would "divert" the licensee from a disciplinary path that could lead to licensure restriction, suspension, or revocation. When the statewide PHP Societies ceased operations in 2007, the Impaired Professionals Procedure of the DRL expanded its scope from the monitoring of non-physician licensees to the monitoring of licensed physicians. The Impaired Professionals Procedure has since changed its name to the PAP, and a reorganization of state government led to the DRL being renamed the Wisconsin Department of Safety and Professional Services.

Program Structures in Other North Central States

It has been glibly stated by some that "when you've seen one Physician Health Program, you've seen one."[26] (See Table 1 for a summary/comparison of programs in the Midwest.) This reflects the reality that licensure of physicians and other health professionals is a state-based enterprise, ultimately authorized by the legislature of a given state; so just as licensure operations vary from state to state, programs that offer an alterna-

Box 1.

Old "Impaired Physician" Model	Enhanced Physician Health and Wellness Model
Address substance use disorders only	Promote physician wellness and the treatment of all potentially impairing health conditions including substance use disorders and other addictions, mental and behavioral disorders, and physical illness.
Focus is disciplinary	Focus is to assure the public safety via comprehensive monitoring and rehabilitation and to support health professionals in recovery via advocacy.
No specific support services; work of providers of clinical monitoring only	While all physician health programs (PHPs) refer to a network of providers of clinical care who are experienced in dealing with health care professionals, some also offer support groups for licensees, sometimes in various locations throughout the state, for those in recovery and those seeking peer support.
Limited educational function; little, if any, outreach; focus on licensure and regulation	Provide educational programs and presentations for hospital administrators, hospital medical staff and leaders, and hospital-based physician health programs, to "spread the word" about how promotion of physician health and confidential non-disciplinary mechanisms for addressing matters of physician health are the best way to assure patient safety and high-quality outcomes of medical care. Some programs have interactive websites with education/information on physician health and wellness initiatives.
Exist for "The state" and not on behalf of the well-being of individual licensees; exist only to "respond to complaints" and not to do outreach or assist with case identification	Offer networking opportunities with colleagues for health professionals who have been to treatment or who have a potentially impairing health condition; establish a network of volunteers who will conduct interventions on colleagues who have been identified as having a potentially impairing health condition. Use data from monitoring of continuous remission to act as advocates for health professionals in recovery who face barriers to practice re-entry or other discriminatory acts.

Box 2.

The Joint Commission standard requires medical staff and organization leaders to:

- Design a process that provides education to licensed independent practitioners on the staff of the hospital or clinic.
- Address prevention of physical, psychiatric, or emotional illness among physicians and pother licensed independent practitioners on the medical staff.
- Facilitate confidential diagnosis, treatment, and rehabilitation of licensed independent practitioners who suffer potentially.

tive to discipline for licensed health professionals vary from state to state, based on local conditions, political climates, and history. Minnesota had one of the original professional society-operated (Minnesota Medical Association) programs for physicians, although it ceased independent operations in 1994 when the state of Minnesota established a "diversion program," for licensees of 16 health professionals' boards, (called the Health Professionals Services Program [HPSP]). Persons who want to refer a physician for intervention place their call to this entity which is operated jointly by the professional licensure/disciplinary boards under the Minnesota Department of Health. Physicians who would consider self-referral know that their self-disclosure may not involve information being kept confidential from the Board of Medical Practice itself. Iowa similarly has a "diversion program" operated by the Board of Medicine; separate programs are operated by the Board of Dentistry, the Board of Nursing, and the Board of Pharmacy. The South Dakota Health Professionals Assistance Program is similar to Minnesota's in structure and governance and to Iowa's in scope, except that it also includes as participants certified alcohol and drug counselors in addition to physicians, dentists, nurses, and pharmacists. Nebraska does not have a program that is a member of the FSPHP, but the department of state government responsible for licensing physicians and other health professionals contracts with a for-profit Employee Assistance Program (EAP) to offer assessment and monitoring services for its health professionals. The licensing agency in Michigan also contracts with a for-profit EAP to offer assessment and monitoring services for its health professionals.

What State Physician Health Programs Can Do

Today it is important to focus energies on enhancing the health and resiliency of the physician work force. Clearly, treatment and recovery take time and effort. Monitoring is necessary; with appropriate treatment and monitoring, a return to a productive professional role is the rule rather than the exception. Understanding and support work much better than judgment and punishment. When a professional with a potentially impairing illness becomes involved with a PHP and no harm to the public has been identified, he or she is ideally enrolled in an alternative pathway to professional discipline. PHPs provide the availability of a non-disciplinary alternative with rehabilitation and accountability being emphasized, facilitated, and carefully documented over time. When considering healthcare and other licensed professionals with addictive illness, the public health, safety, and welfare are paramount, and

Table 1. Overview of Physician Health Program Structures in 5 Midwestern States

Illinois Professionals Health Program	Indiana Physician Assistance Program	Iowa Physician Health Program	Michigan Health Professional Recovery Program	Minnesota Health Professionals Services
Medical Director				
Cynthia Gordon, MD, JD, Medical Director	Candace Backer, Program Coordinator	Deb Anglin, Program Coordinator	Patrick Gibbons, DO, Medical Director	Monica Feider
Medical Director's E-mail Address				
cynthia.gordon@advocatehealth.com	cbacker@ismanet.org	deb.anglin@iowa.gov	www.hprp.org	monica.feider@state.mn.us
Operated By				
A not-for-profit organization	State medical society	State licensing agency	Independent corporation	State licensing agency
Contractual Relationship with State Medical Board?				
No	No	Yes	No	Yes
Program Services				
Chemical dependency, mental health, behavioral problems, sexual misconduct, boundary violations, physical illness, stress management	Chemical dependency, mental health, behavioral problems, sexual misconduct, boundary violations, physical illness, referrals for marital and stress issues	Chemical dependency, mental health, physical illness	Chemical dependency, mental health, pain management	Chemical dependency, mental health, physical illness
Services Provided				
MD, DO, families of physicians, medical students, dentists, residents, psychologists, podiatrists, nurses, pharmacists, veterinarians, other	MD, DO, families of physicians, dentists, residents, physician assistants	MD, DO, residents	MD, DO, dentists, residents, physician assistants, chiropractors, professional counselors, dental hygienists, marriage/family counselors, occupational therapists, physical therapists, registered sanitarians, social workers	MD, DO, dentists, residents, psychologists, podiatrists, nurses, physician assistants, pharmacists, veterinarians, other
Funding				
State licensing agency, malpractice insurance companies, participant fees ($150/month)	State medical society, hospital and private contributions, participant fees ($75/month/member; $125/month/non-member)	State licensing agency	Department of Consumer Health (through licensing fees)	State licensing agency
Annual Budget				
$800,000, includes revenue and expenses for drug/alcohol testing	About $130,000	Not available	Not available	$596,000
Number of Licensed Physicians in State				
44,000	9000	6000	480,000 health care professionals	18,000
Number of Open Cases				
450	130	90	900	526

Note: The structure of these programs is current; numbers are from 2006.

they are best served when an otherwise competent professional with a potentially impairing illness is managed with a cohesive effort among all involved entities. Such management leads to earlier identification, appropriate evaluation, treatment with competent monitoring through a PHP, and the safe return to the active practice of their profession. Barriers to these goals must be removed.

Therapeutic pessimism is not warranted for addiction treatment in general, but especially for treatment of impaired physicians, where recovery rates are >85%. Once identified and treated, physicians and nurses often do better in recovery than others and typically return to a productive career and a satisfying personal and family life. Treatment can be career saving and lifesaving.[27] Three types of post-treatment monitoring are conducted by PHPs: behavioral, chemical, and worksite evaluations. Their success is largely attributable to this tripartite model of recovery monitoring. The intervention, referral, and post-treatment monitoring services offered by PHPs are gener-

ally conceptualized as being distinct from the clinical services offered by addiction treatment programs (ATPs). PHPs are also uniquely qualified to advocate for program enrollees with potential employers and regulatory agencies when enrollees have successfully engaged in an ATP and are compliant with PHP monitoring requirements.[21]

Educating the medical community about addiction among professionals, the risks of addiction in professionals, and the recognition of the subtle signs and symptoms of addiction in the workplace is also a function of PHPs. Such education and prevention services further enhance public safety by encouraging earlier detection and referral to treatment when appropriate. Well-run, statewide PHPs offer a comprehensive range of services including identification of problems as outlined in Table 1. While both models support prompt interventions and monitoring, the enhanced programs provide a more comprehensive approach and encourage more self-reporting.[21]

Clinic- and Hospital-Based Physician Health Programs

As demonstrated in other states, statewide physician health programs can improve the confidential, comprehensive treatment and monitoring of impaired professionals. In the absence of statewide programs, individual hospitals and physician groups are attempting to meet the needs of their physicians. However, there are neither guidelines nor templates for such programs, and there is no formal agreement or relationship with the state licensure apparatus. As a result, local hospital or clinic PHPs have widely varying levels of structure, functioning, and effectiveness. Table 2 provides some guidelines for setting up hospital-based PHPs.

To be sure, there is a role for both local and state physician health programs. There is, however, some debate within the FSPHP about the role and usefulness of stand-alone hospital-based and clinic-based programs: at times they attempt to "do too much" and may attempt to address all the needs of intervention and monitoring at the local level, without availing themselves of the expertise and objectivity of a statewide program (Luis Sanchez, personal communication, 2011). Moreover, local programs are unable to secure the relationship with the licensure board and the statutory validation of their role like a statewide program can. When there is a statewide program recognized by the licensure board and the state legislature alike, the best role for the local program is to promote physician health and well-being, promote the health of physicians' families, make physicians and their families aware of non-punitive interventions that can address physician health needs, and hand off identified cases to the statewide entity as quickly as possible. In situations like Wisconsin's current circumstance, when there is no statewide program independent of state government, local programs may feel more need to fill the void and assume more of the roles traditionally carried out by a statewide PHP.

A Case Example in Marshfield: Annals of a Small Town Physician Health Committee

To demonstrate what is possible for clinics and hospitals, a case example is presented. Ministry St. Joseph's Hospital and the Marshfield Clinic started a physician health committee (PHC) in 2001 in response to the Joint Commission mandate. The mission statement of the program is as follows:

> The Physician Health Committee exists to promote resilience, professionalism, and collegiality among Marshfield Clinic physicians and all Ministry St. Joseph's Hospital medical staff.

The PHC is made up of 6 physicians from the Marshfield Clinic, a large, nationally known, multispecialty medical group of almost 800 physicians located in over 40 regional centers in the northern and western parts of the state. It also offers residency training programs that are freestanding from Wisconsin's 2 medical schools. There is a partner committee at the Rice Lake, Wisconsin satellite location of the Marshfield Clinic. The program has received 125 referrals of physicians over the last 10 years, averaging about 1 referral per month. Referrals come from clinic or hospital administration, concerned colleagues, family members, or self-referrals. Reasons for referrals are outlined in Table 3. Most referrals have come from administration and departments, with only 14 coming by way of self-referral. The challenge of this PHC is to maintain visibility and accessibility to physicians throughout the system of care.

The process of dealing with administrative referrals is outlined in Figure 1. When someone contacts the PHC, the chair and committee members assess the situation and guide the individual through the appropriate channels. Participation is voluntary and confidential. Confidentiality is the cornerstone of physician health services. Information is confidential except in circumstances where an immediate threat to patients is perceived. This set of procedural assumptions creates a safe environment for physicians to talk to peers about work-related stress and the demands of medical practice. As is the case for most statewide and local (hospital/clinic) PHPs, Marshfield Clinic's PHC does not provide direct treatment or even direct clinical services for diagnostic assessment, but links physicians to specific resources for evaluation and treatment options. The PHC also provides advocacy and support for physicians with either a diagnosable health care condition or with workplace stress, burnout, family stress, or manifestations of disruptive/abusive behavior in the workplace. If at any time during the diagnosis, treatment, or rehabilitation phase of the process it

is determined that a practitioner is unable to safely perform the privileges he or she has been granted by the hospital or the clinic, the matter is forwarded for appropriate corrective action that includes strict adherence to state or federally mandated reporting requirements. Additional benefits of a local health system-based PHC are outlined in Table 4.

The Marshfield program also has developed a spousal support network that provides a social venue for physician families and helps with physicians retention. The PHC has provided networking opportunities such as monthly physician lunches and other social events. One very well received initiative has been a monthly newsletter on physician health topics, and there also have been health initiatives such as yoga and mindfulness training for stress management, disease prevention, and health promotion for physicians and non-physician members of the medical staff.

The success of this program lies in the support received from clinic and hospital leadership. Administration believes in the program and has provided financial support. The committee has made connections with department chairs and division medical directors and tried to be a resource to them when dealing with difficult physician matters. The committee has worked diligently to find competent resources for treatment around the country. By the same token, it is important to maintain the role of the program as a resource and advocate for physicians that is not part of the disciplinary process—a balance that is sometimes difficult to maintain. At times, there is the expectation that PHC be the voice of physicians in dealing with morale issues within the organization. It is useful to make connections with physicians before problems arise. Meeting with physicians at orientation, mentoring programs, and providing education and literature on physician well-being plants the seed that physician health can be a resource and not a last resort or a punishment for trouble makers only.

Table 2. Guidelines for Establishing Hospital-based Physician Health Programs

To be successful, program must have "buy in" from senior executive leadership.
Meet regularly, not only ad hoc when a matter of impairment or potential impairment in the workplace comes to light.
Maintain visibility and institutional status: perhaps have a standing agenda item on executive committee meetings with reports on matters related to physician well-being and morale.
Develop relationships with department chairs and medical directors and be a resource to them in the physician personnel issues they must address.
Maintain visibility to physicians in multiple venues: website, newsletter, CME events.
Provide confidential, individual, easily accessible resource for physician counseling.
Develop a list of competent resources for evaluation /treatment.
Maintain the role of advocate to physicians apart from the disciplinary process.

Table 3. Reasons for Referrals to Marshfield Clinic Physician Health Committee

Reason for Referral	Number of Referrals
Behavior issues	57
Alcohol/drug	11
Medical	4
Mental health	11
Peer counseling	19
Dictation backlog	9
Patient satisfaction	5
Pornography	3
Morale	6
Total	**125**

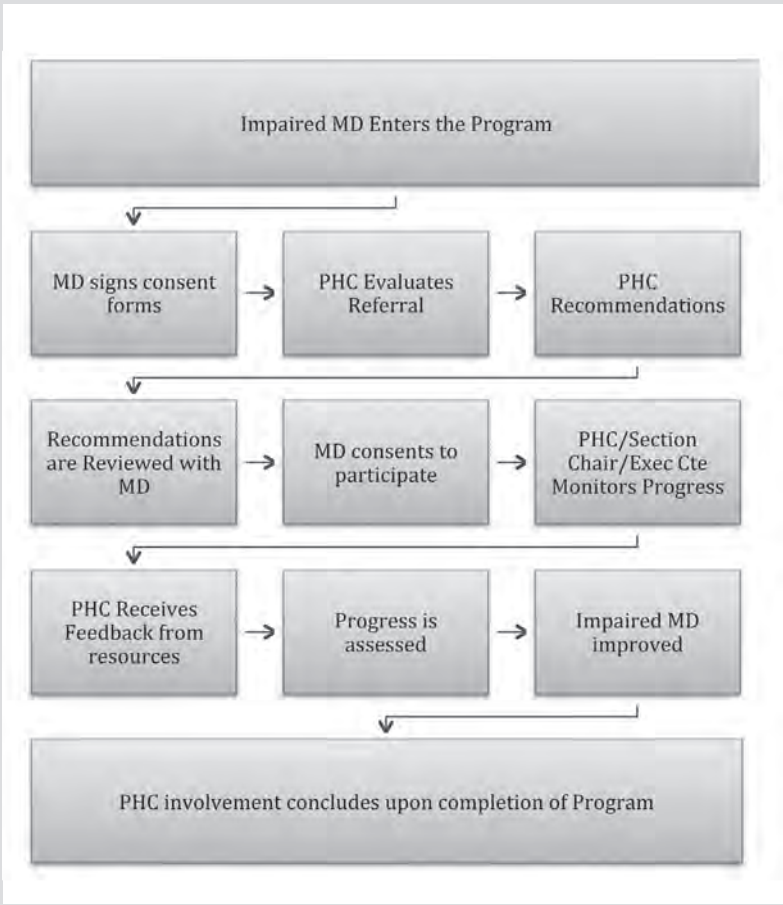
Table 4. Additional Benefits of the Local Health System-based Physician Health Program

Consultation resource to administration on matters related to physician well-being and/or illness
Clearinghouse for resources on treatment providers and programs
Source for continuing education and faculty development on physician well-being
Entity that can develop a mentoring program for physicians
Source of information and programming to improve cultural sensitivity and diversity training

CONCLUSION

Addressing physician health and wellness is now recognized as an important factor in the sustainability of physician practices and in the quality of patient care. Improving personal resiliency can help physicians cope and is of value to health care organizations and patient well-being as well as to physicians, other licensed health care professionals, and members of their families. Physician health programs have crucial roles in prevention, early detection, education, and referral to professionally administered treatment, as well as providing appropriate follow-up and monitoring. As of 2011, 45 states had active statewide physician health programs; only Wisconsin, California, Georgia, Nebraska, North Dakota, and Delaware do not have programs that are members of the FSPHP[26] (at the press time of this article, Georgia was bringing into operations the Georgia Professional Health Program, Inc, and California seems at the brink of adopting legislation to allow the establishment of California Public Protection and Physician Health, Inc, a statewide entity independent of state government but with authorization to operate as an alternative to discipline for California physicians). Health care organizations in Wisconsin must rely largely on their own local resources, which are limited in scope and effectiveness. What is needed in Wisconsin

Figure 1. Flow diagram showing Marshfield Clinic's process for administrative referrals.



Abbreviation=PHC, physician health committee

is a statewide program that physicians and licensees can trust to place their needs as individuals on a level comparable to the needs of the state in assuring physician fitness to practice. The "diversion program" in place can offer effective monitoring for persons with an identified health condition with the potential to lead to impairment, but any program that is an arm of government will inherently (and understandably) face barriers to having potential program participants trust the program to protect them rather than restrict or punish them. Working in collaboration with the MEB of the executive branch of Wisconsin's state government, the PHP at the Marshfield Clinic/Ministry St. Joseph's Hospital is one example of a health care facility attempting to meet the needs of physician well-being. We look forward to the day when an independent process, administratively housed outside of government, and with the robust support of the medical profession and other health professions, is re-established for the benefit of licensed independent practitioners in Wisconsin.

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A Case of Supraventricular Tachycardia Associated with Wolff-Parkinson-White Syndrome and Pregnancy

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ABSTRACT

A 25-year-old pregnant woman was admitted with frequent episodes of supraventricular tachycardia associated with Wolf-Parkinson-White syndrome. She was treated acutely with adenosine therapy during induction of labor and post-partum. Generally, pharmacologic treatment should be undertaken only for symptomatic arrhythmias or in hemodynamically compromised patients. Adenosine is the first choice for acute treatment of supraventricular tachycardia in pregnancy; several other options exist, but all have the potential for negative side effects for mother and fetus. Direct-current cardioversion is acceptable in all stages of pregnancy.

CASE REPORT

A 25-year-old woman at 39 weeks gestation was transferred to our institution from an outside hospital. Prior to transfer, the patient had developed supraventricular tachycardia (SVT) with a heart rate of approximately 200 beats per minute (bpm). Vagal maneuvers had no effect until she stood up to go to the bathroom, at which time she converted spontaneously to sinus rhythm. She was started on oral labetalol to control her heart rate. Two hours later the patient had a second episode of SVT at 220 bpm, and when vagal maneuvers failed she was given 6 mg of intravenous adenosine resulting in conversion of the SVT to sinus rhythm. She had 2 more episodes of SVT that were treated with intravenous adenosine before transfer to our facility.

The patient's past medical history was significant for obesity and a history of Wolff-Parkinson-White (WPW) syndrome diagnosed in childhood. She had one previous pregnancy with an uncomplicated course. The patient reported approximately 5 yearly episodes of palpitations that lasted seconds to minutes and resolved spontaneously. Her family history was positive for maternal WPW and asthma. The only medications she had been using were prenatal vitamins.

Blood chemistries were remarkable for mildly elevated liver function tests (alkaline phosphatase 197, AST 66, ALT 82) and magnesium of 1.7. Two electrocardiograms (ECGs) from outside our facility were available (Figure 1). The first ECG showed SVT with narrow QRS complexes (measuring 0.08 seconds) and a heart rate of 196 bpm. The second ECG (12 lead) showed sinus rhythm with a heart rate of 80 bpm, PR interval of 0.12 secs, and QRS duration of 0.08 secs. The electrical axis was intermediate. There were positive delta waves in I, aVL and V2-V6; the ST segments were normal. An echocardiogram was essentially normal with normal left ventricle size and systolic function and an ejection fraction of 58%. Color flow imaging revealed mild mitral and tricuspid regurgitation.

A physical examination showed a pulse of 80/min and blood pressure of 141/89 mmHg. Her cardiovascular exam revealed regular rate and grade 2/6 systolic ejection murmur at apex with no gallops or rubs. An examination of the lungs and abdomen was unremarkable. She had trivial edema in her lower extremities bilaterally. The fetal heart tones were in the 130s with moderate variability by continuous external fetal monitoring.

Overall, these findings were consistent with a pregnant female with a known history of WPW syndrome and recurrent, narrow complex SVT probably worsened by the physiologic changes of pregnancy.

Induction of labor with Pitocin and artificial rupture of membranes allowed the patient to progress to delivery of a normal infant who did not require resuscitation. During the immediate postpartum period, the patient had 2 more episodes of SVT, which resolved after intravenous administration of adenosine. She was seen in our cardiology clinic after dis-

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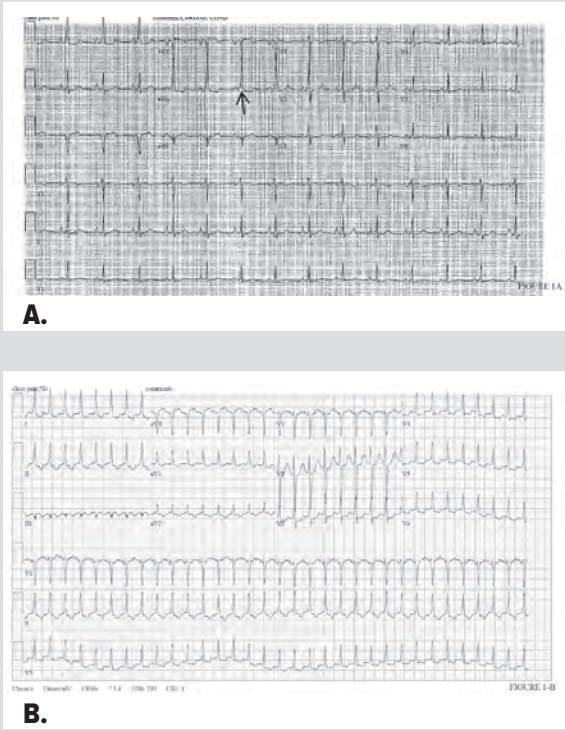
Figure 1. 12 Lead ECG



A. Shows baseline rhythm and pre-excitation. Arrows point to "delta waves" seen between the P wave and onset of QRS complex.
B. Shows SVT with narrow QRS complex tachycardia, QRS duration 0.08 secs.

Figure 2. A Narrow QRS Complex Tachycardia (also known as "Orthodromic reentrant atrioventricular tachycardia")

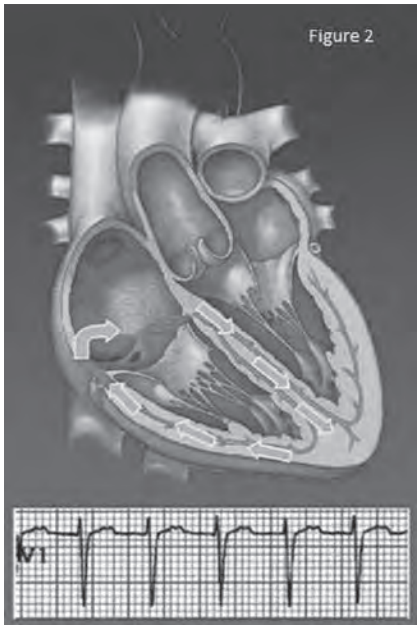


Figure 2. A Narrow QRS Complex Tachycardia (also known as "Orthodromic reentrant atrioventricular tachycardia") Arrows demonstrate anterograde conduction of the impulse from the AV node to the ventricle and then retrograde to the atrium via the accessory pathway (right-sided accessory pathway).

charge from the hospital to discuss various therapies for long-term treatment of her tachyarrhythmia associated with WPW syndrome. A post-discharge, 24-hour Holter monitor showed no evidence of SVT, and both mother and newborn infant were doing well otherwise.

DISCUSSION

Palpitations in pregnancy commonly are due to premature atrial or ventricular contractions or caused by sinus tachycardia.[1] In patients with WPW syndrome, atrioventricular reciprocating tachycardia can lead to hemodynamic compromise that needs immediate treatment.[2,3] Treatment of such patients can be challenging.

Several reports have described successful nonpharmacologic (eg, carotid sinus massage, Valsalva maneuver) and pharmacological treatments of supraventricular arrhythmias in pregnant patients.[4-6] It is recommended that nonpharmacological maneuvers be tried first before embarking on pharmacological treatments. As a general rule, all antiarrhythmics should be regarded as potentially toxic to the fetus and, as such, should be avoided if possible during the first trimester of pregnancy. The American College of Cardiology/American Heart Association Task Force and the European Society of Cardiology have published recommendations summarizing evidence and expert opinion for classifying indications (Tables 1 and 2).[7]

The drugs used more commonly to acutely terminate these arrhythmias include adenosine, beta-blockers, and calcium channel blocker.[6-12] Adenosine is considered the drug of choice, given its short half-life. In general, beta blockers with beta-1 properties are preferred because, theoretically, they interfere less with peripheral vasodilatation and uterine relaxation.[7] Calcium channel blockers have been used, but due to the risk of causing maternal hypotension and uterine relaxation, they generally are used with caution.[7] Agents of second choice include intravenous procainamide.[6,13] Elective and emergent direct-current cardioversion in all stages of pregnancy have been performed safely and should always be considered when needed.[14,15]

Caution: The above-mentioned drugs can be used in WPW patients with narrow QRS complex tachycardia (orthodromic atrioventricular reentrant tachycardia) (Figure 2). However, they are not recommended for patients with wide QRS complex tachycardia (antidromic atrioventricular reentrant tachycardia) due to the potential of causing selective electrical conduction over the bypass tract (accessory pathway) from atria to ventricles, thus causing complex arrhythmias and even death

Table 1. Level of Evidence and Recommendations by the American College of Cardiology, American Heart Association Task Force, and the European Society of Cardiology

Recommendations for classifying indications (summarizing evidence and expert opinion)	
Class 1	Conditions for which there is evidence for and/or general agreement that the procedure or treatment is useful and effective
Class II	Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment • Class IIa: The weight of evidence or opinion is in favor of the procedure or treatment • Class IIb: Usefulness/efficacy is less well established by evidence or opinion
Class III	Conditions for which there is evidence and/or general agreement that the procedure or treatment is not useful/effective and in some cases may be harmful
Level of Evidence	
Level A	Derived from multiple randomized clinical trials
Level B	Data are on the basis of a limited number of randomized trials, non-randomized studies, or observational registries
Level C	Primary basis for the recommendation was expert consensus

Table 2. Recommendations for Treatment Strategies for Supraventricular Tachycardia (SVT) During Pregnancy[a]

Recommendation	Classification	Level of Evidence
Treatment Strategy : Acute conversion of PSVT		
Vagal maneuver	I	C
Adenosine	I	C
DC cardioversion	I	C
Metoprolol, propranolol	IIa	C
Verapamil	IIb	C
Treatment Strategy: Prophylactic therapy		
Digoxin	I	C
Metoprololb	I	B
Propranololb	IIa	B
Sotalol,[b] flecainide	IIa	C
Quinidine, propafenone, verapamil	IIb	C
Procainamide	IIb	B
Catheter ablation	IIb	C
Atenolol	III	B
Amiodarone	III	C

Abbreviations: DC, direct current; PSVT, paroxysmal supraventricular tachycardia; SVT, supraventricular tachycardia.

The order in which treatment recommendations appear in this table within each class of recommendation does not necessarily reflect a preferred sequence of administration. Please refer to text for details. For pertinent drug dosing information, please refer to the ACC/AHA/ESC Guidelines on the Management of Patients with Atrial Fibrillation.

[a]Adapted from the Journal of the American College of Cardiology.[7] Used by by permission.

[b]Beta-blocking agents should not be taken in the first trimester, if possible.

when atrial fibrillation or atrial flutter develop.

The ECG is helpful in diagnosing and understanding the underlying arrhythmias in patients with WPW syndrome for atrioventricular reentrant tachycardia (AVRT). If the tachycardia has a narrow QRS complex of ≤ 0.08 secs (orthodromic AVRT), the antegrade limb is the pathway that conducts the impulse to the ventricle via the AV node/his purkinje system. In this scenario, the delta wave seen during sinus rhythm is lost since anterograde conduction is not via the accessory pathway; ie, ventricle is not pre-excited (Figure 2). If the tachycardia has a wide QRS complex of ≥ 0.12 secs (antidromic AVRT), the antegrade limb is usually the accessory pathway. An antidromic AVRT may be associated with a wide QRS complex in the presence of a pre-existing or rate-related functional bundle branch block.

Chronic or prophylactic therapy for SVTs during pregnancy is challenging and the general recommendations are to use the lowest dose of the safest drug available (Tables 1, 2, 3). Several reports have addressed the use of anti-arrhythmic agents in pregnancy.[16-22] Since 1975, the US Food and Drug Administration (FDA) has assigned risk factors to all drugs available in the United States.[7] Specific information on the fetal and neonatal risks of maternal drug ingestion during pregnancy and lactation also are available from several resources in the pharmacological literature.

Catheter ablation is the procedure of choice in selected patients for drug refractory, poorly tolerated SVT in pregnancy.[7,23] Because of the complex nature of the procedure and the potential for inducing life-threatening arrhythmias, this should be done only in tertiary care centers where advanced fetal heart monitoring and other expertise is readily available for the patient and fetus.

Caution: Agents with AV nodal specific activity (beta blockers, calcium blockers, and Digoxin) are second-line drugs for the chronic suppression of orthodromic atrioventricular reentrant tachycardia (OAVRT) in patients with WPW syndrome. In addition, these AV nodal blocking agents should not be given to patients with WPW syndrome who have documented atrial fibrillation or flutter in addition to OAVRT.

CONCLUSION

Tachyarrhythmia in pregnancy in association with WPW is considered serious and should be evaluated because of potential life-threatening consequences to both mother and fetus. In such patients, close monitoring should occur to prevent maternal and fetal morbidity and mortality. Patients with mild symptoms and normal hearts need reassurance; treatment with antiarrhythmics is reserved for intolerable symptoms.[6-7] The

Table 3. Antiarrhythmic Drugs in Pregnancy[24]

Drug	Pregnancy	Breastfeeding
Adenosine	No evidence of increased risk of teratogenesis or increased risk of adverse fetal/neonatal effects	No information. Because of very short half-life, it is unlikely to have any adverse effects on the neonate.
Amiodarone	Has been associated with serious adverse effects. Congenital goiter/hypothyroidism and hyperthyroidism can occur after in utero exposure. Other potential risks include prolonged QT interval in neonates.	Not recommended because of potential risk of hypothyroidism in neonate.
Beta blockers	No evidence of increased risk of teratogenesis, but some (particularly atenolol) may impair fetal growth when used for a prolonged duration in the 2nd and 3rd trimesters. Use only in the 3rd trimester is associated with reduced placental weight. Newborns of women taking these drugs near delivery are at risk of bradycardia, hypoglycemia, and other symptoms of beta-blockade. Among this class of drugs, atenolol appears to have the most unfavorable effect on birth weight.	AAP considers these agents compatible with breastfeeding, but newborns should be observed for signs of beta-blockade. Atenolol is a weak base that will accumulate in milk. Accumulation is enhanced by its water-soluble, low protein binding, little or no hepatic metabolism, and renal excretion properties. Because it has been associated with beta-blocking effects and cyanosis in nursing infants, it is best avoided during breast feeding.
Digoxin	No evidence of increased risk of teratogenesis or increased risk of adverse fetal/neonatal effects.	AAP considers digoxin compatible with breastfeeding.
Flecainide	Developmental toxicity has been noted in animals, but limited information on human risk from early pregnancy exposure. This risk appears to be low when used for refractory fetal arrhythmia. It may be the treatment of choice for tachycardia in hydropic fetuses.	AAP considers flecainide compatible with breastfeeding.
Procainamide	No evidence of increased risk of teratogenesis or increased risk of adverse fetal/neonatal effects.	AAP classifies procainamide as compatible with breastfeeding. However, the long-term effects of exposure in the nursing infant are unknown, particularly with respect to potential drug toxicity (eg, development of antinuclear antibodies and lupus-like syndrome).
Quinidine	No evidence of increased risk of teratogenesis. In therapeutic doses, the oxytocic properties of quinidine have been rarely observed, but high doses can produce this effect and may result in preterm labor or abortion.	AAP considers quinidine compatible with breast feeding.
Sotalol	Sotalol, which has both beta blocker and type III antiarrhythmic properties, is not teratogenic, and its use has not been associated with fetal growth restriction. Its use near birth has been associated with newborn bradycardia. It may prolong the QT interval on the ECG and potentially induce *Torsades de Pointe*.	Sotalol is concentrated in breast milk, with milk levels several-fold higher than those in maternal plasma, so close monitoring for bradycardia, hypotension, respiratory distress, and hypoglycemia is advised.
Verapamil	No evidence of increased risk of teratogenesis .	AAP considers verapamil compatible with breastfeeding.

Abbreviation: AAP, American Academy of Pediatrics.

goal of treatment is to terminate complex arrhythmias, prevent recurrence, and control ventricular rate. Careful consideration should be given to the choice of antiarrhythmic based on individual patient characteristics, correct identification of the arrhythmia, and properties of the medication.[3] Adenosine appears to be safe for acute termination of narrow QRS complex tachycardia in pregnancy and probably is the best initial acute treatment, especially if nonpharmacologic maneuvers have failed. Direct current cardioversion is acceptable in all stages of pregnancy.

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Assessment of Screening Practices in a Subacute Clinical Setting Following Introduction of *Trichomonas vaginalis* Nucleic Acid Amplification Testing

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ABSTRACT

Objective: *Trichomonas vaginalis* analyte-specific reagent is a highly sensitive assay for *T vaginalis* detection. We report how this diagnostic innovation influenced the sexually transmitted infection ordering practice patterns of 20 subacute-care clinicians.

Methods: *T vaginalis, Neisseria gonorrhoeae,* and/or *Chlamydia trachomatis* screening data were audited on female swab submissions when only wet mount testing was available for detection of *T vaginalis* (2004-2007) and when *T vaginalis* detection options included analyte-specific reagent and wet mount (2008-2010).

Results: Analyte-specific reagent availability resulted in more screening and detection of *T vaginalis*, prompted less utilization of wet mount microscopy, and increased overall RNA-based screening for *N gonorrhoeae* and *C trachomatis* ($P < 0.0002$).

Conclusion: Clinician familiarity with *T vaginalis* analyte-specific reagent can benefit both clinical practice and public health.

BACKGROUND

Trichomonas vaginalis is considered a significant sexually transmitted infection (STI) etiology. It causes over 7 million infections in the United States annually and greater than 180 million cases of trichomoniasis worldwide.[1] An antecedent role for this protozoan has been reported in the acquisition[2,3] and transmission[4] of human immunodeficiency virus. Proclivity to *Neisseria gonorrhoeae*[5-7] and *Chlamydia trachomatis*[6,7] co-infection has been reported. The latter associations are important on a local level, in part, because the Milwaukee-Waukesha-West Allis (Wisconsin) Metropolitan Statistical Area (MSA) had a 2010 chlamydia incidence rate of 738.1 per 100,000 inhabitants. This rate was 63.1% higher than the national average and ranked number 2 in the country.[8] Similarly, the gonorrhea incidence rate of this MSA (219.6 per 100,000 population) was the 2nd highest in the United States and was nearly double that of the national average. In light of the widespread distribution of these 2 STIs throughout the community, our laboratory initiated live performance of *T vaginalis* analyte-specific reagent testing (ASR) in June 2007.

This introduction followed a 1086-specimen validation of the assay,[7] which demonstrated that 97.4% of positive vaginal saline suspension microscopy (wet mount) results (n = 76) yielded a positive ASR result. In addition, 82 wet mount-negative specimens generated a positive ASR result. These findings were confirmed by an alternative target molecular amplification assay.[7] The ASR utilizes an RNA amplification technology known as transcription-mediated amplification (TMA) and is performed on specimens treated with an oligonucleotide/magnetism-based target capture protocol. Target capture effectively removes inhibitors to nucleic acid amplification that can be endogenous to primary clinical specimens.[9] Products of TMA are detected by a secondary nucleic acid hybridization method. Enhanced performance characteristics derived from the *T vaginalis* ASR evaluation are supported by data generated from predicate wet mount and culture systems.[10-12]

Increased sensitivity of *T vaginalis* ASR has provided clinicians in a community-care setting with a reliable and convenient means of identifying patients with trichomoniasis.[13] In brief, a 3-year audit of *T vaginalis* ASR performance within a largely subacute care demographic (just 1.4% of requisitions

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Table 1. Comparison of Requisitions Placed on Female Genital Swab Specimens Submitted for Sexually Transmitted Infection Screening by 20 Clinicians in Subacute-Care Practice Before and After Introduction of Trichomonas vaginalis analyte-specific reagent testing (ASR)

Testing Modality	Percentage of Female Genital Swab Collections		
	2004-2007[a]	2008-2010[b]	*P* value
Any wet mount preparation	66.2	57.7	< 0.0002
Point-of-care wet mount preparation	27.8	22.4	< 0.0002
Any assessment for *Trichomonas vaginalis*	66.2	83.6	< 0.0002
Chlamydia trachomatis/Neisseria gonorrhoeae TMA[c]	80.4	83.7	< 0.0002

Abbreviation = TMA, transcription-mediated amplification
[a]n = 4838 patient encounters
[b]n = 8978 patient encounters

originating from emergent care facilities) revealed that the *T vaginalis* detection rate (9.1%) exceeded those generated by *C trachomatis* (5.9%) and *N gonorrhoeae* (1.5%) TMA-based screening.[13] Additional analyses from this 3-year audit form the basis for the current report. Herein we report that STI ordering practice patterns of clinicians in subacute care practice changed after the introduction of *T vaginalis* ASR screening.

METHODS

Setting

Wheaton Franciscan Laboratory serves an approximately 70-clinic physician group in subacute settings throughout the Milwaukee metropolitan area. The populace represents diverse racial and economic backgrounds and historically demonstrates a high rate of STIs.[8] In an institutional review board-approved protocol, clinician ordering practices were audited for separate 36-month intervals corresponding to before and after the introduction of *T vaginalis* ASR. Requisition parameters of interest included frequency of wet mount (including point-of-care wet mount), frequency of any assessment for *T vaginalis* (defined as wet mount and/or *T vaginalis* ASR), and frequency of *N gonorrhoeae/C trachomatis* TMA. To avoid introducing an element of bias, clinician commentary was not solicited pertaining to requisition decisions. Detection of *T vaginalis* was audited on the basis of results derived from wet mount analysis (including point-of-care) and a combined parameter of wet mount and/or *T vaginalis* ASR.

T vaginalis ASR requisition was completely elective (ie, testing was not automatically enacted as a result of requisitions for *N gonorrhoeae/C trachomatis* TMA or *T vaginalis* wet mount). Twenty-five clinicians were responsible for 87.4% of all *T vaginalis* ASR requisitions on female genital swabs. To prevent potential bias toward analysis of *T vaginalis* ASR data, clinicians who experienced a greater than 95% increase in overall STI patient encounters between the 2004-2007 and 2008-2010 intervals (n = 5) were excluded from analysis. The addition of new clinicians and practices reflected this change.

Diagnostic assays

Wet mounts were prepared by placing 1 drop of a vaginal saline suspension onto a glass slide, overlaid with a coverslip and examined by microscopy. *T vaginalis* was identified by characteristic morphology and motility when viewed at 100x total magnification.[14] Upon clinician requisition, primary genital specimens were subjected to *T vaginalis* ASR (Gen-Probe, Inc, San Diego, California) and TMA-based *C trachomatis* and *N gonorrhoeae* screening (APTIMA Combo 2; Gen-Probe).[13,15] For instances of negative wet mount results being reflexed to *T vaginalis* ASR performance, 200-µL aliquots of primary vaginal saline suspensions demonstrating no motile trichomonads were transferred into specimen lysis tubes (Gen-Probe).[11]

Statistics

The significance test of proportions was used to determine if changes in proportions of test requisitioning were significant. This analysis also determined if changes in *T vaginalis* detection rate via wet mount and/or *T vaginalis* ASR were significant. The alpha level was set at 0.05; all *P* values are 2-tailed.

RESULTS AND DISCUSSION

Overall requisitions for *T vaginalis* assessment increased significantly in the interval following introduction of molecular ASR screening. Concurrently, there was a significant decrease in wet mount requisitions (both $P < 0.0002$; Table 1). These findings, together with an overall increase in *N gonorrhoeae/C trachomatis* TMA requisitions, demonstrated a shift in ordering practices to identify more STIs in subacute clinical practice. Recent assessments of community-wide TMA-based screening for these 3 agents revealed that up to 64% of patient encounters yielding at least 1 STI etiology harbored *T vaginalis*.[16,17] Therefore, increased utilization of newly FDA-approved *T vaginalis* TMA-based screening has future potential to affect diagnosis and treatment of STIs in both symptomatic and asymptomatic females.[18]

On an individual clinician basis, 4 major paradigm shifts in ordering practices were observed. These ordering paradigms are demonstrated in Table 2, with representative clinician examples. A number of clinicians increased all assessments for *N gonorrhoeae, C trachomatis,* and *T vaginalis* and decreased

Table 2. Clinician-specific Representations of the 4 Most Common Paradigms Observed Within *Neisseria gonorrhoeae, Chlamydia trachomatis*, and *Trichomonas vaginalis* Ordering Variances Before and After Introduction of *T vaginalis* analyte-specific reagent testing (ASR)

Ordering Paradigm[a,b]	Percentage of Female Genital Swab Collections Submitted for:								
	Chlamydia trachomatis/ Neisseria gonorrhoeae TMA			Any Wet Mount Preparation[c]			Any Assessment for *Trichomonas vaginalis*[d]		
	2004-2007	2008-2010	*P* value	2004-2007	2008-2010	*P* value	2004-2007	2008-2010	*P* value
I	92.1	99.9	<0.0002	15.6	0.01	<0.0002	15.6	87.9	<0.0002
II	89.3	91.3	0.26	98.6	99.3	0.22	98.6	100.0	0.003
III	25.8	66.2	<0.0002	99.1	98.1	0.32	99.1	99.2	0.91
IV	88.3	93.4	0.01	98.5	99.8	0.03	98.5	100.0	0.0006

Abbreviations = TMA, transcription-mediated amplification
[a]Sample data for each ordering paradigm are from 1 representative clinician.
[b]Ordering paradigm I characterized the ordering variances of 20% of audited clinicians; paradigm II characterized 15%; paradigm III characterized 20%; paradigm IV characterized 35%.
[c]Includes point-of-care wet mount preparations.
[d]Includes wet mount preparations and/or *T. vaginalis* ASR.

reliance on wet mounts. A 2nd paradigm involved no change in *N gonorrhoeae/C trachomatis* TMA-based screening or wet mount utilization, but an increase in overall *T vaginalis* assessment. Other clinicians increased *N gonorrhoeae/C trachomatis* screening, with no change in *T vaginalis* assessment. Finally, a number of clinicians increased both *N gonorrhoeae/C trachomatis* screening and overall *T vaginalis* assessment. Of particular interest, the clinician representative of paradigm I (Table 2) nearly completely eliminated wet mount testing by shifting to *T vaginalis* ASR requisitions. Two representative clinicians added *T vaginalis* ASR to all assessments for *T vaginalis* (paradigms II and IV). Requisitions for *N gonorrhoeae/C trachomatis* TMA-based screening increased significantly for 30% of sampled clinicians (data not shown).

Table 3. Representations of Variances Observed With *Trichomonas vaginalis* Detection Rates Before and After Introduction of *T vaginalis* analyte-specific reagent testing (ASR)

Paradigm	Representative Clinician	*Trichomonas vaginalis* Detection Rate (%) via:					
		Any Wet Mount Preparation[a]			Any Assessment for *T vaginalis*[b]		
		2004-2007	2008-2010	*P* value	2004-2007	2008-2010	*P* value
1	A	2.4	4.8	0.02	2.4	6.1	0.0008
2	B	3.4	3.0	0.83	3.4	6.0	0.19
	C	4.6	5.8	0.39	4.6	10.1	0.0008
3	D[c]	19.7	9.4	0.03	19.7	9.1	0.003
	E[d]	13.3	3.9	0.02	13.3	8.8	0.36
	F	6.8	2.2	0.03	6.8	14.0	0.02

[a]Includes point-of-care wet mount assessments.
[b]Includes wet mount assessments and/or *T vaginalis* ASR.
[c]Point-of-care wet mount assessment for *T vaginalis* decreased 63% between 2 intervals.
[d]Point-of-care wet mount assessment for *T vaginalis* decreased 28% between 2 intervals.

Most importantly, detection rate for *T vaginalis* increased from 5.5% to 7.9% in this study set following the advent of *T vaginalis* ASR ($P<0.0002$; data not shown). Moreover, no significant change in wet mount-based *T vaginalis* detection occurred between the intervals before (5.5%) and after (4.5%) the introduction of *T vaginalis* ASR ($P=0.054$). Taken together, these data suggest that the increased detection was largely due to sensitivity of the molecular assay, rather than substantial changes in patient populations. Three paradigms in *T vaginalis* detection rate variance are highlighted by clinician-specific examples in Table 3. Paradigms 1 and 2 trended to an overall increase in detection rate, in spite of nominal increases in wet mount detection rates. Paradigm 3 illustrated decreased wet mount detection of *T vaginalis* that appeared to be supplemented in 1 instance by increased detection via *T vaginalis* ASR (clinician F). Within paradigm 3, clinicians D and E differed from clinician F on the basis of a downward trend in overall *T vaginalis* detection from 2004-2007 to 2008-2010. Because these 2 clinicians utilized point-of-care wet mount far less in the latter interval than the former interval, it can be inferred that the elevated *T vaginalis* detection rates of 19.7% and 13.3% may be the result of false-positive wet mount observations. While literature has spoken to inaccuracy of office-performed clinical microscopy on the basis of insufficient training, competency, and proficiency,[19-21] the

presence of yeast and leukocytes in vaginal collections also may contribute to false-positive *T vaginalis* wet mount analysis.[22,23]

CONCLUSION

Clinicians in subacute care clinical practice altered STI diagnostic practice patterns through incorporation of *T vaginalis* ASR. In this setting of completely elective STI screen requisitioning, decreased reliance on wet mount for detection of *T vaginalis* was observed. Introduction of *T vaginalis* ASR resulted in an overall increase in molecular screening for *C trachomatis* and *N gonorrhoeae.* A single genital swab collection is appropriate for performance of all 3 of these molecular assays; this factor may have contributed to the overall increase in screening frequency. Taken together, these modalities provide a comprehensive screen for STIs in a community setting.

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Physicians and Social Media: Separating the Tweet From the Chaff

Michelle Leiker, JD, Assistant General Counsel, Wisconsin Medical Society

Social media surrounds us—both personally and professionally. A study published by Pew Internet and the American Life Project in August 2011 reported that 65% of the general public uses social media.[1] QuantiaMD survey results published that same month reported nearly 90% of physicians use at least 1 social media website for personal use and over 65% use at least 1 social media website for professional purposes.[2]

It is not surprising that physicians are among the leaders when it comes to social media use. Simply browse the web and you are sure to stumble across a physician blogging or engaging in some level of social media, whether it be participating in online physician communities (eg, Ozmosis and Sermo), posting updates via Twitter, Facebook or Google+, sharing photos via Instagram or Tumblr, watching, posting, or commenting on videos on YouTube or Vimeo, or posting reviews online.

Social media continues to present many great opportunities for physicians and health care in general, as it can be used to disseminate information and forge professional relationships. For example, many medical journals and medical societies have Twitter and Facebook accounts that provide regular updates on issues important to the profession. The sharing of information with followers or visitors to these accounts can be an effective mode of communication, as it not only conveys information to followers and visitors but also has the potential for further distribution by those followers and visitors.

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Like many professionals, physicians face challenges unique to their profession when using social media. Separating what social media activity is personal and what activity is meant to or has the potential to represent the views of a physician's business or employer or the profession of medicine as a whole is complex and not always possible. Patients or other health care professionals often can impede even the best attempts by a physician to keep their social media accounts purely personal through friendly attempts to engage the physician in interaction (eg, sending a message or friend request, tagging the physician in a picture or post, checking in the physician's office and tagging the physician as part of check-in).

Physicians' use of social media also can have unintended consequences, such as accidental privacy breaches. Even subtle information sharing carries the risk of unauthorized disclosure. While it is clear that it is inappropriate to post a video of a patient without consent, discussing an interesting case sans names or photos can land physicians in a much grayer zone. A Rhode Island physician learned this the hard way after being fired from her job and reprimanded for unprofessional conduct by the state medical board after posting what she considered to be de-identified information about a patient. According to the state medical board, even though neither the patient's name nor photograph was posted, there was enough information in the posting that other people could have identified the person.[3]

> Keeping up-to-date on this issue is critical because the way physicians engage in social media and interact with patients via social media will continue to develop and change.

One may think such situations are rare, but surveys have shown otherwise. Of the deans surveyed at 130 US medical schools, 60% of the respondents reported incidents of students posting unprofessional online content, and 13% reported violations of patient confidentiality.[4] A national survey of state medical boards reported that over

Social Media Resources for Physicians

- AMA Professionalism in the Use of Social Media policy: http://www.ama-assn.org/ama/pub/meeting/professionalism-social-media.shtml
- FSMB Guidelines: http://www.fsmb.org/pdf/pub-social-media-guidelines.pdf
- The Health Communicator's Social Media Toolkit: http://www.cdc.gov/socialmedia/tools/guidelines/pdf/socialmediatoolkit_bm.pdf
- Ohio State Medical Association's Social Networking and Medical Practice—Guidelines for Physicians, Office Staff and Patients Social Media Guide: http://www.osma.org/files/documents/tools-and-resources/running-a-practice/social-media-policy.pdf
- Presentation by Arthur R. Derse, MD, JD, director of the Center for Bioethics and Medical Humanities at the Medical College of Wisconsin: http://www.youtube.com/watch?v=UoBrx4sVfts

90% of the respondents indicated that at least one of several online professionalism violations had been reported to their board. Serious disciplinary outcomes (ie, license restrictions, suspension, and revocations) occurred related to social media use at 50% of the 48 responding medical boards.[5]

A survey published in 2009 by the *Journal of the American Medical Association (JAMA)* reiterated many of these challenges and suggested that physicians using social media need clearer guidelines to define the parameters of professional conduct online.[6] In 2010, the American Medical Association (AMA) adopted the "Professionalism in the Use of Social Media" policy, which aims to help physicians maintain a positive online presence and preserve the integrity of the patient-physician relationship. Health care facilities and medical colleges have used this policy as a resource for developing and updating social media-related policies and procedures.

A new study published in 2012 by *JAMA* focused on online professionalism violations by physicians and the role of medical licensing boards.[5] Survey results illustrated that medical boards consider social media issues within their responsibility to regulate, with approximately 71% of the 48 medical and osteopathic board executive directors participating in the survey saying unprofessional conduct related to social media use by licensed physicians has led to disciplinary proceedings. Survey authors expressed surprise at the number of medical boards that had taken serious disciplinary action (ie, restriction, suspension, and revocation) against a physician for social media-related activities[6] and commented that while the actions are relatively small now in comparison to other actions taken by medical boards, this is likely to change as the use of social media continues to grow. The authors also noted the need for regulators and physicians to address emerging online practices and to create consensus-driven, broadly disseminated principles to guide physicians toward high-integrity interactions online.[5]

The Federation of State Medical Boards (FSMB), which assisted in the development of the study published by *JAMA* in 2012, adopted "Model Policy Guidelines for the Appropriate Use of Social Media and Social Networking in Medical Practice" (Guidelines) in April 2012. The FSMB developed the Guidelines to assist medical boards in providing guidance and education on issues related to social media-related issues. The Guidelines encompass many of the same tenets as the AMA's Professionalism in the Use of Social Media policy, though the

Guidelines are more comprehensive. They were meant to be an educational resource and starting point for discussion, not a definitive source of action. The Guidelines acknowledge this, stating that the FSMB "recognizes that emerging technology and societal trends will continue to change the landscape of social media and social networking, and how these websites are used by patients will evolve over time" and that the Guidelines "will need to be modified and adapted in future years" to be remain consistent with these changes.[7]

The Wisconsin Medical Examining Board (MEB), like many medical examining boards across the country, has started looking more closely at social media as part of its efforts to revamp Med 10 of the Administrative Code, the section in the Code related to unprofessional conduct by physicians. The direction and level of regulation the MEB could propose remains to be seen, as the discussion on this issue has just begun. The Wisconsin Medical Society's government relations and legal staff continue to monitor this issue and will provide updates in *Medigram,* the Wisconsin Medical Society's e-newsletter.

With all the recommendations, risks, and uncertainty, physicians may wonder if they should jump off the social media train. By doing so, they could miss out personally and professionally. Opportunities to participate in social media expand daily. In light of advancements in health information technology physicians may not be able to completely avoid these interactions. One day patients may have the option to link their Facebook or Twitter account to their personal health care record, use established social media channels to exchange health information with their physician, or participate in interactive group appointments. The possibilities are limitless.

As an alternative, physicians can stay educated about and aware of potential issues that may arise based on their profession and monitor their social media use accordingly. There are an abundance of resources that physicians can use to educate themselves on this topic. The above-mentioned AMA policy and FSMB Guidelines are good places to start. Physicians also can review organizational social media policies, the tips shared in the 2011 *WMJ* article "When to 'friend' a patient: Social media tips for health care professionals"[8] or many of the tips available from other online resources. Links to a few of these resources are provided in the sidebar. Keeping up-to-date on this issue is critical because the way physicians engage in social media and interact with patients via social media will continue to develop and change. Guidance for physicians will therefore need to evolve accordingly.

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Development Underway for New Community Medical Education Campuses

John R. Raymond, Sr., MD; Cheryl A. Maurana, PhD; Joseph E. Kerschner, MD, Medical College of Wisconsin

At the beginning of this year, the Medical College of Wisconsin unveiled its vision for a community-based medical education program to mitigate a projected physician shortage in the state and expand community-based practice opportunities in underserved areas of Wisconsin.

A great deal of progress has been made in the months subsequent to that initial announcement. After completing a substantial background study, we received authorization in March from our Board of Trustees to pursue medical education expansion in 2 regions. An exploratory phase commenced that included consideration of 8 potential regional locations.

To gain insight from national best practices for the development of the Medical College's potential community medical education program, we spoke with leaders of more than 25 community medical education programs, reviewed national models in the academic literature, and visited with leaders of 21 Wisconsin health systems and academic institutions.

Following preliminary outreach and based on visioning sessions, comprehensive site evaluations, and overall assessment of health system, academic, and civic partners financial feasibility and interest, the Medical College in June selected Green Bay and Central Wisconsin for the establishment of our first community-based medical education campuses. We have entered a development phase with the selected sites, with a goal of admitting the first group of medical students to the new campuses as early as the summer of 2015. The implications for the state of Wisconsin are at once exciting and significant.

The Wisconsin Hospital Association (WHA) has calculated nearly 70% of students who complete both their medical education and residency training in Wisconsin remain in the state to practice. Our community-based model, therefore, has a high likelihood of expediting solutions to both the shortfall and the maldistribution of physicians statewide. Students' immersive experience—living and learning in the same communities where they may eventually complete residencies and begin practice—will serve as encouragement to remain in underserved rural and urban areas.

Within the immersive model of the community-based medical education program, the curriculum will be faculty-driven and will teach "Triple Aim" core competencies: improving the patient experience (including quality and satisfaction), improving the health of populations, and reducing the per capita cost of health care.

To jump start the development phase, the Medical College has approved a $4 million grant from the education component of our Advancing a Healthier Wisconsin endowment. A team of Medical College faculty, staff, and student representatives currently are working on initial program development, focusing efforts on curricular development and design, faculty training, distance-learning methodologies, interprofessional education models (to emphasize a team-based model of care), pipeline development, community engagement, and population health research integration.

Long term, the community medical education program will provide significant economic advantages to the Green Bay and Central

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Wisconsin regions via expanded physician practices, job generation across a wide spectrum, and increased dollars flowing into the local economy. The program will support professional development across many vocations, and it will contribute to enhancing the reputation and quality of life for each entire region.

Collaboration is a centerpiece of this initiative, and the development phase of the program includes the engagement of physician practices, county medical societies, academic and health system leaders, local government, business and civic leaders in the Green Bay and Central Wisconsin regions for the planning of those campuses.

Community physicians in particular will have opportunities to be integral parts of the education of medical students. We are targeting class sizes in the range of 25 students per class in each region.

Before such steps as student recruitment can begin, however, a number of significant milestones must be met. In addition to continued development of the curriculum, milestones requiring achievement pertain to Liaison Committee on Medical Education (LCME) accreditation; funding, including philanthropic commitments; faculty recruitment and development; Medical College of Wisconsin faculty approvals; creation of additional residency slots in each region; and formalization of agreements with local health care systems and academic institutions.

We are proud to have as our partners strong academic and health care organizations in the selected regions, bringing expertise and support to the community campuses. In Green Bay, these are Aurora BayCare Medical Center, Bellin College, Bellin Health, Hospital Sisters Health System Eastern Wisconsin Division, Northeast Wisconsin Technical College, Prevea Health, St Norbert College, and University of Wisconsin-Green Bay.

In Central Wisconsin, they are Aspirus, Marshfield Clinic, Mid-State Technical College, Ministry Health Care, Nicolet College, Northcentral Technical College, Riverview Medical Center, University of Wisconsin-Marathon County, University of Wisconsin-Marshfield/Wood County, and University of Wisconsin-Stevens Point.

We will look for opportunities to welcome new partners as the programs progress. We also share a commitment with the University of Wisconsin School of Medicine and Public Health to coordinate statewide medical education outreach programs and examine the potential for collaborative efforts. We are grateful for the support and insight we have gained through our early and ongoing dialogue with UW as well as the WHA.

In addition to Green Bay and Central Wisconsin, we received enthusiastic responses from several other communities who are interested in receiving consideration at a later date as future community-based medical education sites. We will continue discussions with communities and potential partners across the state with the hope that additional sites could eventually be developed, and with the knowledge that we are taking vital steps to improve access and the quality of health care in Wisconsin for generations.

Bringing Certainty to an Uncertain Future

W. Stancil Starnes, Chairman and CEO, ProAssurance Corporation

Editor's Note: The Wisconsin Medical Society helped form PIC WISCONSIN in 1986 to ensure the availability of medical professional liability insurance for Wisconsin physicians. Today, the Society continues to endorse ProAssurance (PIC WISCONSIN's successor) to provide professional liability insurance coverage with unmatched success in claims defense.

"Juggling running chain saws is easy compared to practicing medicine these days."

That's the best quote I've heard from a physician recently. This particular physician was speaking specifically about a Missouri Supreme Court decision striking down his state's tort reforms after 7 years, but it applies to the practice of medicine everywhere, doesn't it?

Ironically, the only real certainties in health care are uncertainty and change—which are the product of external forces beyond the control of those who must deliver care in a chaotic environment of oppressive regulation and cost concerns.

Wisconsin has been at the forefront of one solution—the aggregation of health care delivery. No other state has seen so many large clinics form to provide physicians and others with a broad set of tools and capabilities to thrive in the new world of health care. But even physicians and those running the large clinics in Wisconsin continue to express frustration—whether it's with the Affordable Care Act or the constant efforts within the state to weaken tested legal reforms.

Other states are moving fast in that direction, with some physicians seeking the perceived safe harbor of practice within a hospital or as a member of a large, multispecialty group. They tell me they are pleased someone else is worrying about emerging risks such as cyber liability, HIPAA, and others. I am sure you have your own pet peeve about what comes between you and the patient-centered care you strive to deliver every day.

Woven throughout this rapidly changing landscape is the constant risk of medical liability litigation and concomitant change in the medical-legal environment. With care being delivered in such a stressful environment, the second-guessing of split-second decisions by the plaintiffs' bar is growing exponentially, and the opportunity to exploit new theories of liability abounds. Clearly, the constant struggle to maintain a level playing field of fairness in the courtroom will only get harder as physicians and facilities strive to deliver optimum care.

So the logical question is, "What is my professional liability insurer doing to address these emerging risks and reduce the uncertainty in my professional life?"

Our approach at ProAssurance is multipronged and designed to meet the needs of physicians practicing as part of a hospital-owned or affiliated practice, within a multispecialty group or in the more traditional small group or solo-practice settings. We understand there always will be uncertainty, but we are committed to removing as much of it as possible from the professional lives of each of our insureds.

As the recent Missouri Supreme Court ruling proves, we can never take for granted hard won legal victories. Time-tested reforms and laws that have real benefit in securing a just, level playing field will be attacked by the plaintiff's bar; and, as we've seen in Wisconsin, a shift in the political landscape can set the stage for those challenges to be successful.

Your support of organized medicine through your Medical Society is crucial in the fight to keep these important laws on the books and working for you. Equally important is your choice of medical professional liability insurance to provide certainty and service when legislative and judicial remedies fail.

In Wisconsin, for example, ProAssurance brought its unmatched local expertise to

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bear by working with the Wisconsin Medical Society to deliver a seminar for its members on *Jandre v. Injured Patients and Families Compensation Fund*. This recent State Supreme Court decision is generating concerns regarding what information physicians might be expected to provide to patients in other cases. Keeping physicians and risk managers up-to-date on developments that can fundamentally change the medical-legal climate is just one way we eliminate uncertainty for our insureds.

Bringing certainty to the uncertain medical-legal climate that lies ahead requires financial strength and a commitment that, no matter what, your medical professional liability insurance carrier will be both *willing* to mount an unfettered defense and able to pay any resulting claims. As you consider the true cost of medical professional liability insurance, I urge you to satisfy yourself whether the carrier you are considering is being operated in a manner that assures your future financial security. Remember, the most expensive policy you will ever buy is one from a company that can't *or won't* live up to its promises. Think for a moment about the uncertainty of having to pay a million dollar loss *and defense costs* from your own pocket.

With the increasing transparency of medical liability outcomes and the growing use of that data in credentialing, patient satisfaction scoring, and reimbursement calculations, an unfettered defense of your good medicine is more important than ever. In an age where a few key strokes and mouse clicks can start an avalanche of reputation-destroying internet postings, defending your reputation in health care litigation is paramount. Before you purchase any medical professional liability coverage, please satisfy yourself that you will receive the benefit of decades of local defense experience, backed by a willingness and ability to deploy both human and monetary capital on your behalf.

I also urge you to consider the sometimes conflicting risk appetite and expectations introduced when physicians become employed by, or affiliated with, larger institutions. The feeling of certainty that can come from having a corporate umbrella to handle vexing compliance and regulatory matters can evaporate when claims decisions are based solely on a best monetary outcome.

A physician's reputation should be the prime consideration when a claim alleging malpractice involves both the individual who delivered the care and the institution where that care was delivered. An institution may not understand the physician's personal stake in defending a claim. For the institution, a claim can be viewed as a business matter; for a physician, it's personal.

Your medical liability insurer should have products and services tailored to meet the needs of both partners—policies such as ProAssurance's ProControl℠ allow both the individual physician and the institution to secure an outcome designed to be satisfactory to both. These twin objectives can be accomplished, but require an insurer with sophistication and experience to make that happen while delivering the risk management and loss prevention services that add real value to the insurance equation.

The further we try to peer into the future, the murkier the crystal ball becomes, and the uncertainty introduced by the Affordable Care Act makes it all the more difficult. None of us can know what lies ahead, but the real drivers of medical liability litigation—unexpected outcomes and patient frustration—cannot help but be exacerbated by adding millions of the currently uninsured into a system that cannot hope to have the capacity to serve them.

What lies ahead is, to borrow a phrase from Donald Rumsfeld, "...one of the unknown unknowns—[the] things we do not know, we don't know." Being mindful of the uncertainty ahead, you should insist on an insurer that is financially and operationally prepared for these unknown unknowns... an insurer that will keep its commitments to you and add certainty to your professional life—whether you are a solo practitioner or part of a major health care system. That's the promise of ProAssurance and Treated Fairly®, and it's my promise to you, as well.

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