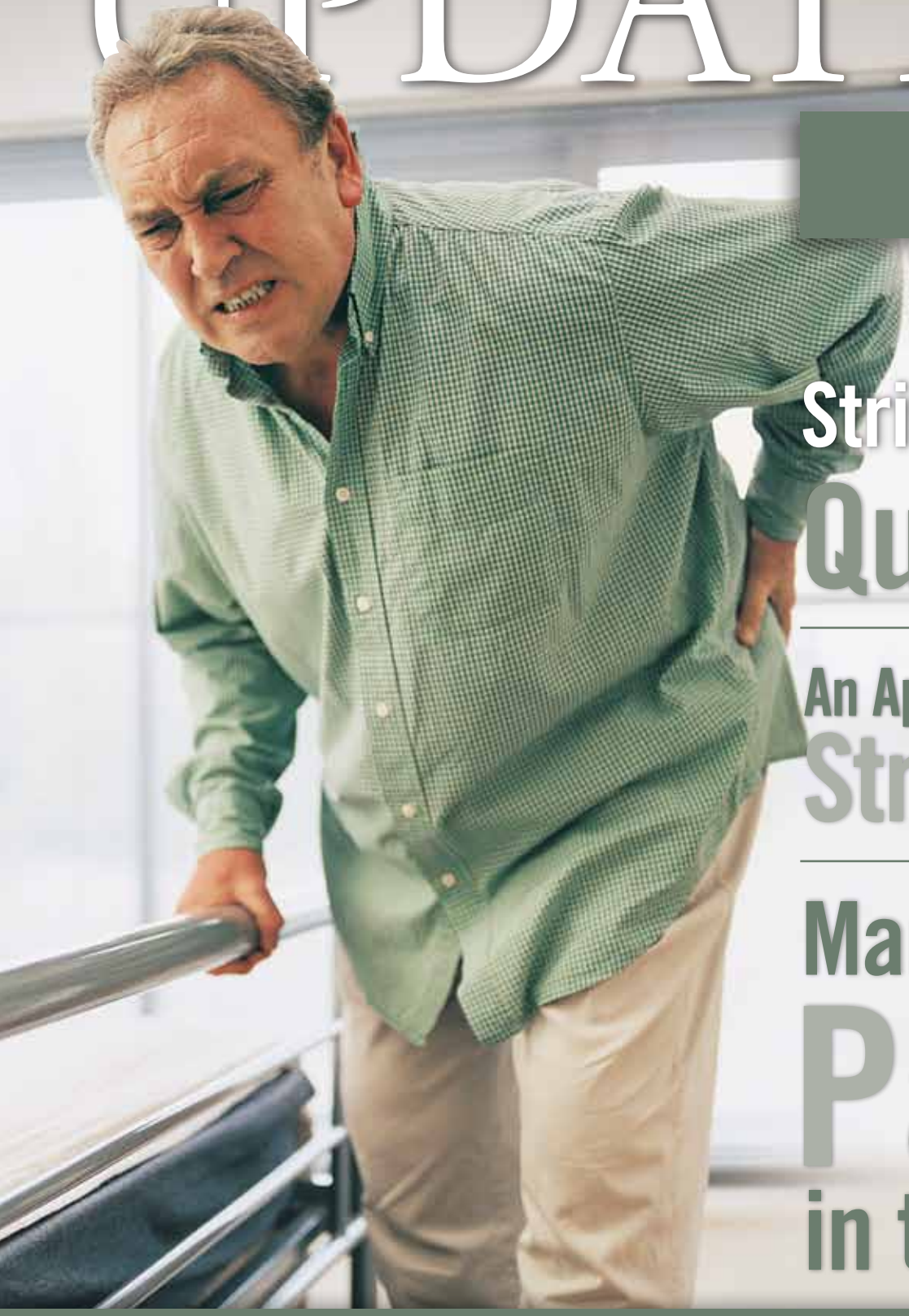
Physician's Weekly UPDATES

PAIN



Striving for Quality

An Appendicitis Strategy

Managing Pain in the ED

Table of Contents

4

Striving Toward Quality Pain Management

— Lynn R. Webster, MD, FACPM, FASAM

6

An Emerging Surgical Strategy for Acute Appendicitis

— Kurt E. Roberts, MD

10

Efforts Needed to Meet Anesthesiologist Demand

— Mark A. Warner, MD

14

Acute Pain Management in the ED

— Sergey M. Motov, MD

A Message From the Editor

We are proud to present this monograph featuring stories on several important topics in pain medicine. In recent months, we have published a variety of news articles covering this disease state. Focusing on clinical and evidence-based information, the content in these features relies on the expertise of our contributing physician authors. *Physician's Weekly* will continue to feature news on pain management in the coming months. In the meantime, we hope you find this information useful in your practice. Feel free to give us feedback and opinions by emailing me at keithd@physweekly.com.

Sincerely,

Keith D'Oria

Editorial Director, Physician's Weekly

Physician's Weekly™ (ISSN 1047-3793) is published by Physician's Weekly, LLC, a division of M/C Holding Corp. The service is free for qualifying institutions. Please contact us at editor@physweekly.com for more information. Offices: Physician's Weekly, LLC, 5 Commerce Way, Suite 202, Hamilton, NJ 08691; and 180 Mount Airy Road, Suite 102, Basking Ridge, NJ 07920.

Striving Toward Quality Pain Management

Lynn R. Webster, MD, FACPM, FASAM

Medical Director and Founder
Lifetree Clinical Research & Pain Clinic
Director-At-Large
American Academy of Pain Medicine

No single treatment option for pain management is without risk, but physicians must also consider the risks involved with making decisions to not treat pain. The PainSAFE initiative is a multi-pronged educational program designed to help advocate for and advance the safe use of all pain therapies.

The epidemic of untreated chronic or recurrent pain has lasted for decades, yet millions of people are still not adequately treated. One significant barrier to effective pain management is that clinicians and patients are often reluctant to talk about pain. Oftentimes, patients with pain believe their complaints aren't taken seriously by their healthcare providers or they're concerned about becoming addicted to certain pain medications. Many physicians also have difficulty managing pain, which can then have an impact on patient care and management. Some doctors have concerns or reservations about their ability to manage pain appropriately, the potential for substance abuse and addiction, or regulatory scrutiny.

There is a significant knowledge deficit in the management of pain, especially when it comes to treatment options and the potential harms associated with available therapies. The unintended or undesirable side effects related to pain treatment can have a negative impact on patients, ranging from minor to life-threatening adverse events. Patient perceptions of side effects can also play a role. In some cases, patients may abandon their treatment due to side effects, even though these therapies have the potential to reduce pain and suffering and improve quality of life and physical function.

Education is Critical

No single treatment option for pain management is without risk, but physicians must also consider the risks involved with making decisions to not treat pain. There is a general lack of education in medical schools and during residency training on pain management. Many of the risks associated with pain treatment can be managed by educating and empowering providers about the safe use of interventions. Efforts to minimize the risks of overdose and death are essential. To reach this goal, physicians must learn about the safe and effective use of pain therapies. Doing so will make more treatment options available for more patients living with pain.

The PainSAFE Initiative

The PainSAFE initiative (www.painfoundation.org/painsafe) is a multi-pronged educational program designed to help advocate for and advance the safe use of all pain therapies. With guidance from a multidisciplinary advisory committee of pain and addiction experts and the American Pain Foundation, PainSAFE provides up-to-date information, programming, and practical resources and tools on pain. Physicians can use the website as a central hub of evidence-based information and practice-based tools to focus their management of pain safely and help reduce the risks that are associated with various pain therapies and interventions.

When the PainSAFE initiative was rolled out, one of the first pain management issues addressed was the safe use of prescription opioids. The website provides webinars, educational materials, and symposia to help physicians learn more about this important topic within pain management. In the future, there are plans to explore other therapies and interventions for pain (eg, patient-controlled analgesia), to identify potential harms and risks of those treatments, and to investigate systems approaches to improve the safety of pain therapies. There are also plans to evaluate the PainSAFE initiative to demonstrate validity and its real world impact. The results of these evaluations will help guide the evolution of the program to address the latest issues relating to patient safety. Ideally, PainSAFE will become the gold standard for informing clinicians on pain and how to treat it safely.

Lynn R. Webster, MD, FACPM, FASAM, has indicated to Physician's Weekly *that he has worked as a consultant for, received honoraria from, or been on the advisory board for AstraZeneca, BioDelivery Sciences International, Boston Scientific, Covidien Mallinckrodt, Embryon, Janssen, King, KnowledgePoint360, LLC, MedXcel, Medtronic, Nektar Therapeutics, NeurogesX, Nervo Corporation, Pharmacofore, PharmaCom Group, ProStrakan, Purdue Pharma, and Synchrony. He has also received research funding from Adolor, Alkermes, Allergan, Bayer Healthcare, Collegium, Elan, King, Medtronic, Shionogi USA, and Theravance.*

Readings & Resources

American Pain Foundation. PainSAFE. Available at: www.painfoundation.org/painsafe .

American Pain Foundation. Physician Perspective Toward Prescription Opioid Abuse and Misuse: Summary of Findings. Available at: www.painfoundation.org/media/resources/physician-survey-summary.pdf .

American Pain Foundation. Overview of American pain surveys: 2005-2006. *J Pain Palliat Care Pharmacother.* 2008;22:33-38.

An Emerging Surgical Strategy for Acute Appendicitis

New data show that pure transvaginal appendectomy is emerging as a safe and well-tolerated procedure for women with acute non-perforated appendicitis that reduces the burden of pain and has faster recovery times when compared with laparoscopic approaches.

KURT E. ROBERTS, MD

Assistant Professor
Section of Surgical Gastroenterology
Department of Surgery
Yale University School of Medicine

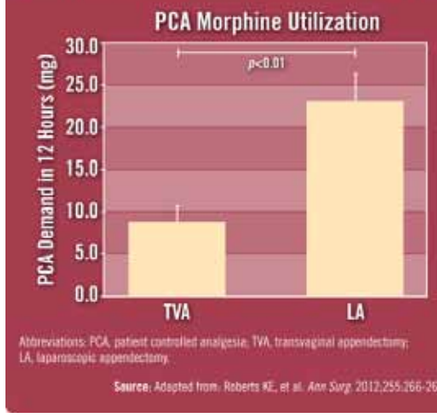
Appendectomy is one of the more common surgical procedures that is performed throughout the United States each year despite decreasing in annual incidence. Open and laparoscopic appendectomy procedures are current standard treatments for non-complicated appendicitis, but advances in surgical techniques are continuing to emerge to further reduce postoperative pain and recovery time. One such procedure is natural orifice transluminal endoscopic surgery (NOTES) for performing transgastric appendectomy.

Transvaginal surgery is one component of NOTES that is gaining momentum for use in appendectomy and cholecystectomy. Transvaginal appendectomy (TVA) is a procedure performed via a single port that is inserted through the posterior vaginal fornix. The surgery is a type of NOTES that allows for appendectomy without visible scars. "NOTES has been at the forefront of minimally invasive surgery since it first emerged in 2004," says Kurt E. Roberts, MD. "Some studies have described laparoscopic assisted TVAs for acute appendicitis in the surgical literature. However, pure TVAs have been limited to only one single-case report in Germany."

> *It's likely that transvaginal NOTES will eventually become part of the repertoire of minimally invasive surgeons.*
>
> — Kurt E. Roberts, MD

Figure 1 Analyzing Postoperative PCA Morphine Use

Patients undergoing transvaginal appendectomy required significantly less analgesia in the first 12 hours after surgery than those undergoing laparoscopic appendectomy.



Abbreviations: PCA, patient controlled analgesia; TVA, transvaginal appendectomy; LA, laparoscopic appendectomy.

Source: Adapted from: Roberts KE, et al. *Ann Surg.* 2012;255:266-269.

Data on the Safety & Efficacy of TVA

Exploring the safety and efficacy of pure TVAs and comparing them with traditional laparoscopic appendectomy are important, according to Dr. Roberts. In the February 2012 *Annals of Surgery*, he and his colleagues published a study that compared a series of patients who underwent TVA with those who received conventional three-port laparoscopic appendectomy. TVA was offered to 42 women, 18 of whom agreed to undergo the surgery while two others declined it. The remaining 22 women were considered the control group, receiving three-port laparoscopic appendectomy.

Patients in the TVA arm required significantly less pain medication and returned to normal activities and work significantly sooner (Figures 1 and Figure 2, respectively), according to the study. The amount of patient controlled analgesia (PCA) used in the TVA group in the first 12 hours was 8 mg, compared with 23 mg for the control arm. The study also found that only one TVA case required a conversion to three-port appendectomy. Operative times were also similar between both patient groups, and complications were minor, occurring in two patients in each group. Dr. Roberts noted that there is a potential bias because the Annals of Surgery study is a cohort analysis. Further studies, including randomized controlled trials, are necessary to confirm these early promising results.

Learning Curve for Transvaginal NOTES

Only one incision is made for both single-incision laparoscopic surgery and transvaginal NOTES procedures, and the applied laparoscopic techniques are the same. "Because of these commonalities, it's likely that the learning curve is similarly rapid," says Dr. Roberts. He is one of the few surgeons in the world who has had a great deal of experience with TVA. Dr. Roberts has successfully performed more than 75 transvaginal cholecystectomies and appendectomies. He believes that both procedures will eventually become accepted alternatives to abdominal surgeries. "Women who declined to have TVA did so because the surgery was too new and experimental or because they were uncomfortable with having a procedure requiring vaginal access," he added.

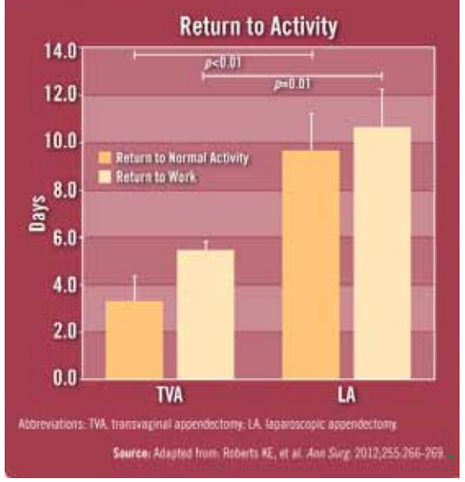
While the feasibility of TVA was demonstrated in the analysis, Dr. Roberts says it is important to remember that patients were a part of a select group. Furthermore, TVA can be performed with existing laparoscopic instruments. "NOTES has been done previously by entering the stomach and rectum, but we're still years away from having proper instrumentation for transgastric or transrectal surgery," he says. "The hope is that instrumentation will improve and surgical techniques will be enhanced as more surgeons become familiar with NOTES. The transvaginal and single-port approaches should be considered important stepping stones in the evolution of minimally invasive surgery."

More to Come for Transvaginal Surgery

In light of their results, Dr. Roberts and colleagues have begun to offer transvaginal approaches to more women with appendicitis as well as to those requiring cholecystectomy and ventral hernia repair. "We've also been examining its application in sleeve gastrectomy," he says. "Transvaginal surgery still requires investigational protocols and more randomized controlled trials, however. At the same time, it's likely that transvaginal NOTES will eventually become part of the repertoire of minimally invasive surgeons." On May 4, 2012, Dr. Roberts conducted a CME course at Yale University that addresses the NOTES procedure. He was also one of the program chairs of the 2012 International Natural Orifice Transluminal Endoscopic Surgery Annual meeting, which was held in Chicago from July 12 to 14. For more information on these presentations, go to http://cme.yale.edu/ .

Figure 2 TVA Linked to Faster Recovery

Patients undergoing TVA were able to return to normal activity as well as to work significantly faster than laparoscopic appendectomy controls.



Abbreviations: TVA, transvaginal appendectomy; LA, laparoscopic appendectomy.

Source: Adapted from: Roberts KE, et al. *Ann Surg.* 2012;255:266-269.

Kurt E. Roberts, MD, has indicated to Physician's Weekly *that he has received consulting fees and grants/research aid from Covidien Corporation, and is the founder and a shareholder of NovaTract.*

Readings & Resources

Roberts KE, Solomon D, Mirensky T, et al. Pure transvaginal appendectomy versus traditional laparoscopic appendectomy for acute appendicitis: a prospective cohort study. *Ann Surg.* 2012. Dec 1. [Epub ahead of print]. Abstract available at: http://journals.lww.com/annalsofsurgery/pages/articleviewer.aspx?year=9000&issue=00000&article=98959&type=abstract.

Solomon D, Lentz R, Duffy AJ, Bell RL, Roberts KE. Female sexual function after pure transvaginal appendectomy: a cohort study. *J Gastrointest Surg.* 2011 Oct 14. [Epub ahead of print].

Rao GV, Reddy DN, Banerjee R. NOTES: human experience. *Gastrointest Endosc Clin N Am.* 2008;18:361-370.

Nezhat C, Datta MS, Defazio A, et al. Natural orifice-assisted laparoscopic appendectomy. *JSLS.* 2009;13:14-18.

Efforts Needed to Meet Anesthesiologist Demand

A recent study reveals that there is a shortage of anesthesiologists. If current trends continue, a dramatic shortage of anesthesiologists is projected by 2020, which has important implications for healthcare facilities.

MARK A. WARNER, MD

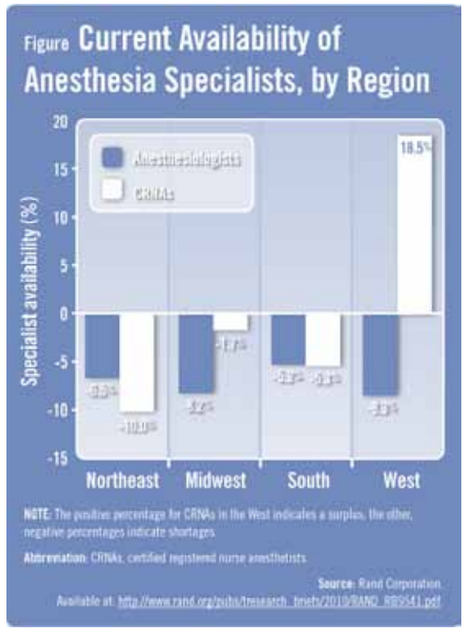
Professor of Anesthesiology
Mayo Clinic College of Medicine
President
American Society of Anesthesiologists

Anesthesiology is an important medical specialty provided by highly skilled anesthesiologists. Anesthesia care also is provided by certified registered nurse anesthetists (CRNAs) and anesthesiologist assistants (AAs). There are approximately 35,000 anesthesiologists, an equal number of CRNAs, and 1,300 AAs actively practicing in the United States. In most states, CRNAs must work under a physician's supervision. However, 16 states now have opted out of this requirement. Anesthesiologists typically are anesthesia care team leaders and either personally provide anesthesia or oversee CRNAs and AAs. Anesthesiologists have the medical training to manage the overall health of patients when they are at their most vulnerable.

There has been growing concern over whether the U.S. is facing a shortage of anesthesia providers. The ramifications of such a shortage are significant. "A shortage of anesthesiologists could limit access to high-quality care, especially in light of the growing demand for surgical and interventional

"The projected shortage of anesthesiologists suggests that the U.S. will soon face a gap in anesthesiology services that will be just as important to Americans' health as the projected physician gap for primary care services."

procedures for our aging society," says Mark A. Warner, MD. Markets for highly specialized medical services are difficult to balance, but understanding current and future demand and supply for anesthesia services may help policymakers, regulators, and professional groups in addressing the problem before it gets out of control. Many factors can play a role in national or local shortages, especially poor workforce planning. This may include limits on the number of training positions, regulations of permission to practice, and limits on earning capacity, especially for anesthesiologists who wish to work in rural areas but have payment limited by Medicare rules that do not apply to CRNAs.



New Survey Data

A recent study from the RAND Corporation was conducted to assess whether there is currently a shortage or surplus of anesthesia providers. It also examined demographic patterns, employment arrangements, usage of time across different procedures, and working patterns that currently exist in the labor markets for anesthesiologists and CRNAs. Investigators conducted a national survey of anesthesiologists, CRNAs, and hospital anesthesiology directors, and used an econometric model that drew data from these surveys. It incorporated state-level variables to estimate the supply of and demand for anesthesiologist and CRNA services. It did not evaluate AA services.

Data from the RAND survey showed that the U.S. has a current shortage of about 3,800 anesthesiologists and 1,280 CRNAs, representing 9.6% and 3.8% of the total anesthesiologist and CRNA workforce, respectively. Importantly, a dramatic shortage of anesthesiologists and a significant surplus of CRNAs are projected by 2020 if current trends continue. The study projected a shortage of about 4,500 anesthesiologists and a surplus approximately 8,000 CRNAs within 10 years. If the growth in demand is assumed to be 3%, accounting for the aging population, the shortage of physician anesthesiologists may reach as high as 12,500 by 2020, while the supply of nurse CRNAs would be at equilibrium. Shortages of anesthesiologists were spread evenly across all regions in the country. Shortages of CRNAs were more pronounced in the Northeast, while some states in the West showed surpluses (Figure).

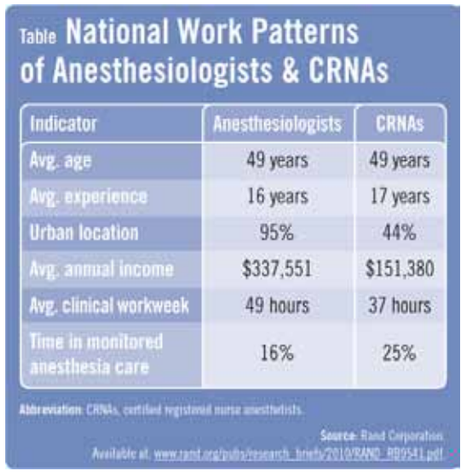


Table **National Work Patterns of Anesthesiologists & CRNAs**

Indicator	Anesthesiologists	CRNAs
Avg. age	49 years	49 years
Avg. experience	16 years	17 years
Urban location	95%	44%
Avg. annual income	$337,551	$151,380
Avg. clinical workweek	49 hours	37 hours
Time in monitored anesthesia care	16%	25%

Abbreviation: CRNAs, certified registered nurse anesthetists.
Source: Rand Corporation
Available at: www.rand.org/pubs/research_briefs/2010/RAND_RB9541.pdf

"The projected shortage of anesthesiologists suggests that the U.S. will soon face a gap in anesthesiology services that will be just as important to Americans' health as the projected physician gap for primary care services," says Dr. Warner. "As more and more patients are projected to become older and sicker, healthcare facilities will need more anesthesiologists to provide the full scope of care that patients will need before, during, and after their surgeries and procedures."

Comparing Work Patterns

The RAND study also found that the total work hours for anesthesiologists are 50% more than CRNAs (Table). "Anesthesiologists provide more services to critically ill patients and those with acute and chronic pain," explains Dr. Warner. "They oversee a broad range of anesthesiology practices in hospitals and ambulatory surgery centers. They also provide critical knowledge and expertise that is needed to keep a complete watch over patients' health and intervene when necessary in their most critical hours. The findings of the RAND survey highlight the need to find ways to expand opportunities for young physicians. This is critical to ensuring that anesthesiologists are available to provide the complex care that is needed by our growing population of elderly and critically ill patients."

Policy Implications

The results of the RAND study have important implications for workforce planning, Dr. Warner says. "To address the shortage of anesthesiology specialists, there are strategies that healthcare facilities should explore. For example, residency positions for anesthesiologists and certifications for CRNAs are typically controlled by professional decision-making bodies. Hospital and healthcare facility leaders should consider increasing the number of anesthesiologists; their medical education, training, and expertise in patient safety will make them the preferred providers to an increasing number of patients undergoing complex procedures. Offering more medical education on anesthesiology during training and making strides toward proper workforce planning may enable our healthcare system to respond appropriately to market conditions."

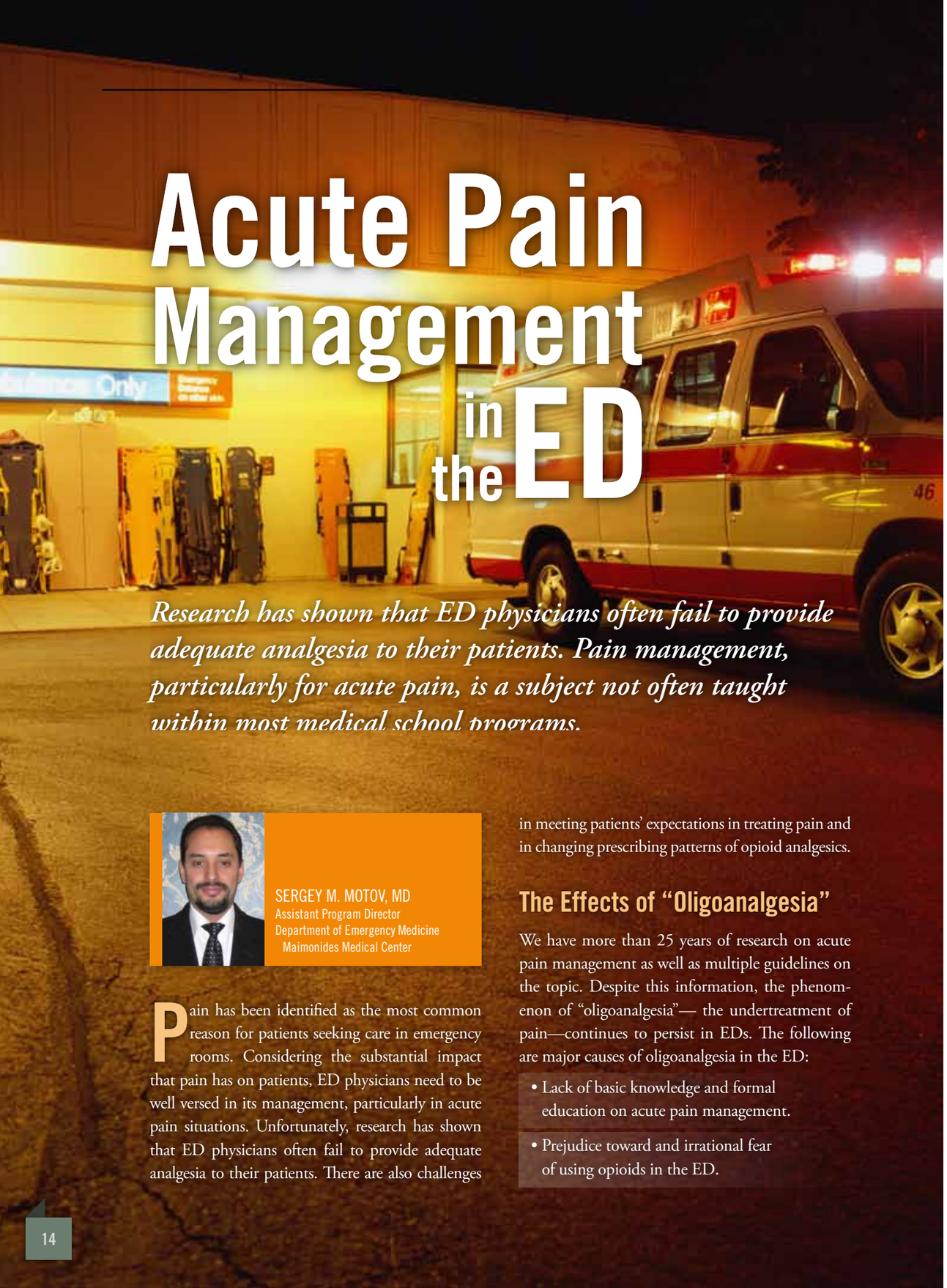
Mark A. Warner, MD, has indicated to Physician's Weekly *that he has no financial disclosures to report.*

Readings & Resources

Rand Corporation. Is there a shortage of anesthesia providers in the United States? Available at: http://www.rand.org/pubs/research_briefs/2010/RAND_RB9541.pdf.

Daugherty L, Fonseca R, Kumar KB, Michaud P-C. An analysis of the labor markets for anesthesiology. Santa Monica, Calif. RAND Corporation. TR-688-EES. 2010. Available at www.rand.org/pubs/technical_reports/TR688/.

Cromwell J, Rosenbach ML, Pope GC, Butrica B, Pitcher JD. CRNA manpower forecasts: 1990–2010. *Med Care.* 1991;29:628-644.



Acute Pain Management in the ED

Research has shown that ED physicians often fail to provide adequate analgesia to their patients. Pain management, particularly for acute pain, is a subject not often taught within most medical school programs.

SERGEY M. MOTOV, MD
Assistant Program Director
Department of Emergency Medicine
Maimonides Medical Center

Pain has been identified as the most common reason for patients seeking care in emergency rooms. Considering the substantial impact that pain has on patients, ED physicians need to be well versed in its management, particularly in acute pain situations. Unfortunately, research has shown that ED physicians often fail to provide adequate analgesia to their patients. There are also challenges in meeting patients' expectations in treating pain and in changing prescribing patterns of opioid analgesics.

The Effects of "Oligoanalgesia"

We have more than 25 years of research on acute pain management as well as multiple guidelines on the topic. Despite this information, the phenomenon of "oligoanalgesia"— the undertreatment of pain—continues to persist in EDs. The following are major causes of oligoanalgesia in the ED:

- Lack of basic knowledge and formal education on acute pain management.
- Prejudice toward and irrational fear of using opioids in the ED.
- Lack of adherence to acute pain management guidelines and clinical pathways.
- Underuse of analgesics titration protocols.

Barriers preclude ED physicians from proper acute pain management that include ethnic, racial, and age bias as well as ED environment and culture.

Wanted: More Formal Pain Management Training

The lack of formal teaching of acute pain management in medical schools has had a profound effect on the gap in emergency physicians' clinical knowledge on the subject. There may also be a reluctance to change practice patterns or a prejudice toward using opioid analgesics in the ED. Pain management is a subject that is not taught within most medical school programs. Research has shown, however, that utilizing pain management educational programs can lead to substantial improvements (see also, Pain Management: A Look at Provider Perspective). More efforts are needed nationwide in creating pain management curriculum in medical schools and residencies.

Environment & Culture Affect Pain Management

Crowding, interruptions, and break-in tasks are common problems in the ED that can lead to delays in treatment as well as delivery of pain medications. Other cultural factors that affect pain management include poor doctor–patient communication, stereotyping and prejudices, patient mistrust issues, and patient dissatisfaction. These factors must be regularly assessed and altered, if need be, based on characteristics unique to each ED setting so that pain management protocols can be developed to improve outcomes (see also, Striving Toward Quality Pain Management).

We have a great responsibility to relieve pain by all possible appropriate means in a timely, efficient, and effective manner. More than a decade ago, the RELIEF approach to pain management was introduced by Turturro et al (Table). The take-home messages of the RELIEF approach should be applied in order to positively impact acute pain management in the ED. Oligoanalgesia will persist unless each physician assumes leadership in pain management. As we see improvements in pain assessment and documentation and progress in knowledge and research, the hope is that emergency physicians will more effectively manage acute pain in the ED.

Table The RELIEF Approach

R:	Record the pain score on the patient's chart before and after treatment.
E:	Ease patients' concerns. Inform them that pain control is a goal of care.
L:	Look & Listen to patients because they will be the best judges on their level of pain and pain relief.
I:	Inquire if patients need pain medications.
E:	Educate ED staff on proper analgesic techniques.
F:	Facilitate multidisciplinary protocols with nursing and other specialties to manage common painful conditions in the ED.

Source: Adapted from: Turturro MA. *Emerg Med Prac.* 1999;1:1-16.

Sergey M. Motov, MD, has indicated to Physician's Weekly that he has no financial disclosures to report.

Readings & Resources

Motov SM, Khan AN. Problems and barriers of pain management in the emergency department: are we ever going to get better? *J Pain Res.* 2009; 2:5-11. Available at: www.ncbi.nlm.nih.gov/pmc/articles/PMC3004630/?tool=pubmed.

Turturro MA. Pain management in the ED: prompt, cost-effective, state-of-the-art strategies. *Emerg Med Prac.* 1999;1:1-16.

Rupp T, Delaney KA. Inadequate analgesia in emergency medicine. *Ann Emerg Med.* 2004;43:494-03.

Todd KH, Ducharme J, Choiniere M, et al; PEMI Study Group. Pain in the emergency department: results of the pain and emergency medicine initiative (PEMI) multicenter study. *J Pain.* 2007;8:460-466.

get connected.

email like plus read tweet feed

PHYSICIAN'S WEEKLY

www.physweekly.com