Opioid Stewardship in Urology

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Abstract

Purpose. The 2018 AUA Quality Improvement (QI) Summit*, Opioid Stewardship in Urology*, addressed strategies for better understanding the appropriate use of opioids in urology as well as reviewed programs that have been successful in reducing opioid prescribing.
Scope. AUA brought together nearly 100 attendees from across the United States, which included clinicians who specialize in urology, psychiatry, pain management, and naturopathic medicine as well as researchers, government officials, and others.
Methods. The 2018 AUA QI Summit was a 1-day meeting held at AUA headquarters in Linthicum, Maryland. Talks and panels held during the summit highlighted opioid stewardship programs and emphasized research on the nature and management of postoperative pain.
Results. Presentations facilitated information exchange between a broad range of clinicians and educated urology practitioners about the latest research and practices that can reduce opioid prescribing as well as effectively manage patient postoperative pain. This type of exchange provides attendees with the knowledge base needed to make first steps toward accelerating adoption of evidence-based practice. In addition, the open format and multidisciplinary approach promotes the forging of partnerships that may facilitate physician-led opioid stewardship programming and research, thereby enhancing the quality and safety of medical care and improving the lives of patients, their families, and their communities.
Key Words. Opioids, opioid stewardship, opioid prescribing, urological surgery, pain management, patient education, alternative pain management

Background

The AUA's Quality Improvement (QI) Summits address quality issues; define clinical problems; facilitate information exchange on quality efforts by clinicians across disciplines and care settings; and educate urology practitioners, primary care physicians, and specialists about developing patient-centered quality improvement programs.

Opioid abuse has emerged as a public health crisis in the United States. Overprescribing, on its face, appears as a deceptively straightforward issue: there are too many opiates prescribed. However, the behaviors that contribute to this issue are complex, and the identification of the perceptions and patterns that contribute to overprescribing has required the attention of researchers from a range of medical specialties. Furthermore, to fully understand the impact of overprescribing on the community, yet another layer of research is required. Finally, the optimal strategies for identifying high-risk patients, opioid dependence, and opioid addiction, and how to direct these patients to the appropriate resources, are only now being defined, highlighting the need for dissemination of findings from physician-led programming. Opioid stewardship represents a movement aimed at identifying and promoting practices in support of the responsible use of opioids for pain management. To lead the stewardship effort, the AUA convened a Quality Improvement Summit to address appropriate use of opioids, including strategies for reducing prescribing, examining the impact of reduced prescribing on patient-centered and clinical outcomes, and dovetailing these findings with institutional and governmental policy. This 2018 AUA QI Summit, *Opioid Stewardship in Urology*, was held on December 8, 2018, at the AUA headquarters in Linthicum, Maryland, and brought together clinicians, researchers, and policymakers from a range of specialties. Representatives from these specialties shared their perspectives and practices surrounding opioid prescribing so that they can be applied in the context of urological surgery and pain management with the goal of improving healthcare and community safety and reducing both the monetary and societal burdens associated with opioid dependence and addiction.

Objectives

Specific objectives included the following:

- Explain the opioid epidemic in the context of surgical management of urologic diseases
- Describe steps that can be taken by urologists to influence the opioid epidemic
- Delineate roles urologists can play in combating the epidemic
- Identify opportunities to propose or implement new policies to combat the opioid epidemic

To meet these objectives, invited speakers presented their work highlighting examples of successful stewardship programming and shared their clinical perspectives on pain management and how effective practices may be applied to urology. These presentations provided a platform for discussion, and the opportunity for participants to comment or ask questions was provided at the close of each presentation. Furthermore, presentations supported the dissemination and acceleration of adoption of evidence-based practices. Fostering cross-specialty communication around this complex issue not only facilitates dissemination of completed research projects but also allows for development of new and innovative research and programming that can effectively address the opioid epidemic.

Meeting Proceedings

Opening Remarks

Gregory B. Auffenberg, MD, MS, Co-Chair, AUA Quality Improvement Summit

Dr. Auffenberg opened the AUA Quality Improvement Summit, *Opioid Stewardship in Urology,* by welcoming meeting attendees and speakers, provided an overview of the day's agenda, and introduced the Agency for Healthcare Research and Quality (AHRQ) as the Summit sponsor. Dr. Auffenberg also emphasized the wide range of speakers scheduled throughout the day, highlighted the collaborative nature of the summit, and invited attendees to ask questions and actively participate in discussion throughout the day.

Keynote Address: The Role of Physicians and Prescription Pharmaceuticals in the Opioid Epidemic

Chad Brummett, MD, University of Michigan

Dr. Brummett began his presentation by describing both the large-scale impact of opioid addiction and its personal impact on patients and their families. Each day 130 Americans die from an opioid overdose---the equivalent of at least one daily plane crash. Alongside this statistic are countless individual stories of families broken apart by these deaths. At both levels, overprescribing is a primary contributor: it is estimated that over 80 percent of people who use heroin began their addiction with prescription opioid pills.[1]

To effectively address the opioid crisis, it is critical that the number of new prescriptions be limited to only those that are medically necessary. Because prescribing practices have changed in primary care in recent years, the relative percentage of new opioid prescriptions that are provided by surgeons has actually increased.[2] From 2010 to 2016, the percentage of new opioid prescriptions provided by surgeons increased by 18.1 percent.[3] In the absence of comprehensive surgical guidelines on prescribing, prescribing behaviors have been driven by concerns surrounding patient satisfaction and burden of phone calls to clinics. Though recognition of opioid use as a surgical risk has increased, there is still need for improvement in terms of discussing this risk with patients. Even though six percent of surgical patients who are prescribed an opioid will become a persistent user,[4] this hazard of surgery often remains unmentioned, even as surgeons routinely discuss risks of surgery that are well below one percent. Compounding the individual health risks posed by chronic opioid use are increased risks associated with future surgery. Preoperative opioid use is associated with an increased cost per hospitalization of $2,341 average additional cost/patient, an increase in the rate of complications from 16-20 percent, and an increase in rate of readmissions from 6-10 percent.[5]

Although the perception may be that patient satisfaction decreases when opioid prescribing decreases, there is evidence to the contrary. In one recent study, a decrease in the average number of pills prescribed from 50 (in 2017; national average was 42) to 15 resulted in patients consuming fewer pills (an average of six fell to four), no change in calls for refills, and no change in patient-reported pain scores.[6] Dr. Brummett noted that these same trends have also been shown in the setting of knee and hip surgery, spine surgery, and abdominal surgery, among others.[7,8] Of note, even when prescribing is reduced to 15 pills, rather than 50, the majority are still left unused by the patient. Though this is encouraging in some ways, the fact remains that unused pills are at risk of being diverted into the community. In fact, one recent study at Dartmouth showed that, for outpatient general surgery procedures, 72 percent of the prescribed opioids pills go unused.[9] For the state of Michigan, 1.8 million

operations performed each year would result in 62 million unused pills each year. This is particularly troubling in light of the statistic that 71.2 percent of people who abuse opioids get them from the community, rather than through medical prescribers or drug dealers.

Armed with these data, one resident at the University of Michigan shared a voiceover PowerPoint presentation with other University of Michigan residents showing that 15 pills was sufficient for the large majority of patients. Within a short period of time, 15 rather than 50 became the new average number of pills prescribed. In addition, a cross-pollination effect took place, in which surgery residents shared the information with other specialties, resulting in a broader reduction in prescribing.[6] Development of new evidence-based standards is critical for empowering surgeons to change prescribing patterns and disseminate practices to their colleagues.

There are a number of tools available for helping institutions and surgeons change their prescribing practices. The Michigan OPEN (www.michigan-OPEN.org) opioid facts brochure[10] can be rebranded and used to facilitate preoperative consults that identify high-risk patients and help patients have realistic expectations of postsurgical pain. In addition, practices such as prescribing a small number of a single short-acting opioids or prescribing over the counter medications like ibuprofen can further reduce the number of opioids in the community and minimize individual patient risk. Dr. Brummett closed by noting that dissemination of opioid-reducing practices is a challenge, especially in states where the hospital network is not connected, as it is in Michigan. Although continuing education and hospital programming are useful, communication between peers carries the most impact for effecting behavior change.

Session 1: Physician-led Multicomponent Interventions in Opioid Stewardship

Procedure-specific Opioid Prescribing Guidelines

Richard J. Barth, Jr., MD, Dartmouth-Hitchcock Medical Center

Dr. Barth began by noting that data presented on postsurgical opioid prescribing, dependence, and abuse are difficult to translate into clinical practice without guidelines. He then shared the research that led to the development of current guidelines.[11] Initial research into prescribing patterns for commonly performed surgeries at his own institution, Dartmouth-Hitchcock Medical Center, revealed a wide range of prescribing patterns.[9] Across the five most commonly performed outpatient surgeries at Dartmouth (partial mastectomy, partial mastectomy with sentinel lymph node biopsy, laparoscopic cholecystectomy, laparoscopic inguinal hernia repair, and open inguinal hernia repair) patients reported taking about one quarter of prescribed pills. This variability and pattern of patients having excess opioids on hand has since been confirmed in multiple other studies performed in different institutions.[6,12-14]

With these data in hand, hospital guidelines were developed that restricted the number of pills to a quantity that would meet the consumption of 85 percent of patients in the initial dataset (partial mastectomy, 5; partial mastectomy with sentinel lymph node biopsy, 10; laparoscopic cholecystectomy,15; laparoscopic inguinal hernia repair, 15; and open inguinal hernia repair, 15). Resetting the expectation for prescribing through educational efforts within the hospital system allowed for a 57 percent reduction in opioid prescribing.[15] Remarkably, when patient consumption was monitored following the reduction in prescribing, patients took even fewer of the prescribed pills, on average only 34 percent of the pills in the reduced prescription.

In the context of *inpatient* surgery, the number of pills taken the day before discharge is the best predictor of how many pills are used at home, independent of the surgery performed. Thus, 7-day

prescriptions should be based on consumption in the hospital. Using this calculation has the potential to reduce the number of opioids prescribed by 40 percent.[11] Guidelines for urological procedures have been put forth by the Mayo Clinic, and new data in support of urology-specific guidelines are expected to be published this year. Following the presentation, one audience member added that there is currently a push to reduce inpatient opioid use by disrupting the long-held idea that it is important to take pain medication on a schedule in order to avoid pain before it emerges.

Importantly, Dr. Barth reiterated that reducing opioid prescribing does not have an impact of patient satisfaction. At Dartmouth, data on patient satisfaction with providers revealed that reducing the number of opioids prescribed did not negatively impact physician scores. One audience member added that a central part of maintaining a good relationship with patients is ensuring that patients are educated about postoperative pain as well as management options.

Opioid Reclamation Efforts

Jonah Stulberg, MD, PhD, MPH, Northwestern Medicine

Dr. Stulberg opened his talk with a poll on practices surrounding opioid disposal. Following a brief discussion of institutional practices, he described a personal experience that illustrated the significant unmet need surrounding options for safe disposal of opioids as well as education for patients that calls attention to the seriousness of keeping unused opioids in their homes. When discussing opioid disposal with a female acquaintance, she shared that, over the course of a year, as a result of a dental procedure, a toe procedure, and a procedure on her finger, she had been prescribed a total of 90 Percocet. None of the procedures required opiates as part of anesthesia. Consistent with the fact that over 50 percent of patients use fewer than five pills for each prescription, she had not used any of her opioids. Thus, her prescriptions had the potential to release 90 pills into the community, where they may be used for nonmedical reasons. It is critically important to limit passage of opiates into the community, as more than 75 percent of heroin addicts begin by using prescription opiates.[16]

To limit efflux of opioids into the community, electronic systems may be leveraged to foster changes in prescribing patterns: electronic medical record (EMR) optimization with updated prescribing orders, the ability to provide clinician-level reporting and feedback, and prescription monitoring ensure that the patient does not have multiple prescribers. Coupled with these efforts should be physician, nurse, and pharmacist education that detail strategies for effective communication with patients about postoperative pain management and medication disposal. Multiple learning modules as well as printed educational materials are freely available through the Michigan Open website[17] as well as the Illinois Surgical Quality Improvement Collaborative (https://www.isqic.org/opioid-reduction-initiatives).[18]

Though minimal prescribing is important, as is treating with the aim of maintaining patient function rather than with the aim of providing patients a pain-free surgical recovery, it is also important to foster patient willingness to dispose of leftover mediation. Encouraging this behavior is particularly challenging, given that, culturally, our tendency is to save medications “just in case.” Incorporating discussion of medication disposal into preoperative consultations can help make medication disposal an expected part of postoperative recovery. To facilitate disposal, placement of disposal kiosks in the clinic can provide a starting point for education as well as keep the importance of disposal top of mind for patients. Alternatively, home disposal kits may be offered to patients. Together, physician education, EMR mechanisms that make reduced prescribing reflexive, patient education materials, and availability of disposal kiosks can prevent a substantial number of opioids from diversion into the community.

MUSIC and Opioid Stewardship

James M. Dupree, MD, MPH, University of Michigan

Dr. Dupree began by introducing the Michigan Urological Surgery Improvement Collaborative (MUSIC), a collaborative that supports physician-led quality improvement programming that is supported by Blue Cross Blue Shield of Michigan (BCBS-M) to improve the quality of healthcare in Michigan. MUSIC includes 44 urology practices and encompasses over 90 percent of urologists in the state of Michigan, providing a unique opportunity to partner with payers to improve healthcare quality. Dr. Dupree then presented work that MUSIC has done in collaboration with the Michigan OPEN team surrounding opioid stewardship and radical prostatectomy. A statewide analysis revealed significant heterogeneity in opioid prescribing, with initial postoperative prescriptions ranging from 8-180 tablets per patient (mean, 40 X 5-mg hydrocodone pills). In order to promote opioid stewardship across the state, MUSIC implemented educational programming along with supportive infrastructure to effect behavior change. To incentivize adoption, BCBS-M adapted a modifier-22 for opioid-limited surgery so that additional time required for implementation and individual patient counseling could be reimbursed.

The MUSIC pain optimization pathway (POP) that was developed as part of this effort includes patient counseling surrounding pain expectations and control, encouragement of non-narcotic pain management in the intraoperative period and on the hospital floor, limiting discharge prescription to six times 5 mg of oxycodone (or equivalent), and post-discharge monitoring. Post-discharge monitoring leveraged the existing infrastructure for monitoring patient-reported outcomes to better understand how many pills patients were actually taking and whether their pain was well managed.

Of the 175 patients who were evaluated at the time the program was launched, 87 percent were prescribed an opioid at discharge. Importantly, only seven percent of patients requested a refill, highlighting that restricting the prescribed number of opioid pills to six does not increase the number of callbacks. In addition, data on pain management showed that this reduced use of opioids did not result in an increase in unmanaged pain: patient-reported pain at 1 month following surgery was not different from the pain reported before surgery. Furthermore, only two percent of patients were still taking opioids at 1 month following surgery, an encouraging statistic given that in 2017, six percent of patients became dependent on opioids following major and minor surgeries.[4] Dr. Dupree mentioned that, while all of the patients still taking opioids at 1 month reported that they were taking the medication for reasons related to their surgeries, the questionnaire might be modified to obtain additional reasons for persistent opioid use, such as mood or sleep.

Dr. Dupree concluded by sharing lessons learned in development and implementation of this program. First, work required for behavior change can be aligned with financial incentives, with the shared goal of overall improvement in healthcare. Because chronic opioid use places a substantial financial burden on the healthcare system, payers have a financial incentive to participate in programming that reduces opioid use. In addition, inclusion of multiple stakeholders is key, as is ongoing communication between these groups. Importantly, programs and educational efforts should be implemented for all patients, regardless of insurance carrier. Finally, “overcommunication” with patients is important for establishing postsurgical expectations as well as the rationale for reducing opioid prescribing. Patients may be skeptical of change and are understandably concerned about pain, so it is important to provide a rationale for the prescribed approach to pain management with repeated messaging (e.g., preoperative visit, postoperative nursing instructions, postoperative visit). Currently, there are plans to expand the MUSIC-POP to other urological procedures.

Session 2: Understanding Postoperative Pain

Pathophysiology of Postoperative Pain

Brooke Chidgey, MD, University of North Carolina

Dr. Chidgey presented an overview of the pathophysiology of postoperative pain, with a focus on how acute pain can transition to chronic pain and how the biochemical activity of opioids is not optimal for managing most types of acute and chronic pain. Dr. Chidgey noted that the act of defining pain itself brings an important fact to light, that pain is not caused by opiate deficiency: opiates do not "correct" the varied and complex processes that result in the experience of pain.

Postsurgical pain can result from nerve injury, central sensitization, and inflammation. In the case of nerve injury, axon sprouting from the damaged nerve can lead to formation of a neuroma that is covered in voltage-gated sodium channels, which leads to ectopic neural activity. This same mechanism also leads to ectopic activity when the conductive layer of the nerve is damaged. Ectopic activity can lead to recruitment of other nerve fibers, amplifying pain signals. This amplification is responsible for a wind-up phenomenon, which results in the heightened experience of pain. In addition, receptor field expansion, in which an initial injury results in a wider range of sensitization surrounding the primary injury, can also amplify pain signals. These processes are one of a number of ways that acute pain can transition into chronic pain from a central mechanism. Interpretation of these pain signals involves neurotransmitters such as serotonin and norepinephrine, adding another layer of complexity.

One important element of pain processing is the limited capacity of the brain to process incoming sensations. For example, rubbing on or vibration on an area adjacent to an injury can limit perceptions of pain (e.g., rubbing an elbow after hitting it on a door frame). Similarly, distraction can be helpful for controlling pain. For this reason, asking patients to frequently report their pain level may lead to an increased perception and reporting of pain. In addition, patient expectations of postsurgical pain are often inconsistent with the reality of surgery, and communication with patients about expectations is key. Patients can be told that pain is a natural and expected part of recovery that can be effectively managed but not erased. Adding to these issues is the perception that opioids are equated with pain relief, and pain regimens that do not include opioids can be viewed by patients as incomplete.

In reality, there are multiple ways to treat pain, including acetaminophen, cyclo-oxygenase inhibitors, gabapentin, nonsteroidal anti-inflammatory drugs (NSAIDS), celecoxib, ketamine, and anti-inflammatories, among others. Dr. Chidgey provided a review of the mechanism of action of non-opioid adjuncts as well as a brief overview of how each can be used. In addition, she provided information on the physiological processes at play in the postoperative period and the mechanisms underlying the transition to chronic pain. By understanding the processes that lead to postoperative pain as well as the options for treating it, physicians can help their patients regain and maintain functionality following surgery while minimizing exposure to opioids.

Complementary Alternative Medicine Pain Management Strategies

Meghan Sperandeo-Fruge, ND, National University of Natural Medicine

Building upon Dr. Chidgey's presentation of nonopioid medical management of pain, Dr. Sperandeo-Fruge provided an introduction to nonpharmacologic pain management and presented studies that provide evidence for the use of naturopathic interventions for the management of postsurgical pain. Within complementary and alternative medicine (CAM), acupuncture is the best supported modality for

management of postoperative pain. Systematic reviews and meta-analyses have demonstrated that acupuncture can reduce the need for analgesics. Because acupuncture has no serious side effects and is accessible to many patients, acupuncture represents a viable strategy for reducing need for opioids in the postsurgical setting.[19] Furthermore, acupuncture may reduce the negative side effects of opiates that *are* needed for pain management.[20,21] Importantly, in the acute setting, acupuncture was able to reduce baseline pain score by more than 50 percent in 92 percent of patients, and IV morphine was able to reduce pain by 50 percent in 78 percent of patients.[22]

Mindfulness training and hypnotic suggestion were also presented as potential interventions for pain relief. Single, scripted mindfulness training focused on acceptance of pain, or hypnotic suggestion focused on changing pain sensations though imagery, has been shown to significantly lower baseline-adjusted pain intensity. In one third of patients, at least a 30 percent reduction in pain intensity was achieved using these techniques. This level of reduction is similar to that of a 5-mg dose of oxycodone.[23] In addition to mindfulness, guided imagery 2 weeks prior to and 3 weeks after surgery (total knee replacement) reduced the level of pain that persisted past 3 weeks.[24] Helping patients change their perception of pain and release their emotional attachment to pain may permit patients to move through recovery with less pain. Though this mindfulness study has not been repeated for urological surgeries, guided imagery could be helpful for reducing longer-term postoperative pain following surgeries such as radical prostatectomy. Massage therapy and auriculotherapy may also help some patients better manage their pain. Though evidence that botanical medicine is effective in treatment of postoperative pain is scarce, there are multiple studies suggesting that turmeric or aromatherapy (primarily lavender)[25] reduce postoperative pain to some degree and reduce the need for additional medical pain interventions.

An additional benefit of CAM is its ability to improve the patient's overall well-being. Many of these interventions have benefits beyond pain management, including reprieve from symptoms of anxiety and depression as well as improved sleep. Furthermore, patients participating in these interventions may take a more active role in their own care and feel more empowered to care for themselves with newly acquired techniques. On the other hand, although CAM may help patients manage pain, there are challenges that must be considered. The coordination of care between allopathic and naturopathic doctors is currently underdeveloped. This disconnect is reflected in large variations in payer reimbursement of alternative medicine services. This often leaves patients to navigate a fragmented system on their own.

To promote integration of alternative medicine strategies into traditional medical practice, it is critical not only to increase awareness of effective nonpharmacologic treatments for pain but also to train healthcare practitioners and administrators in the evidence base of effective nonpharmacologic practice. Furthermore, support of ongoing research and dissemination of the role of effective nonpharmacologic treatments in pain may help improve understanding of how these modalities can be best implemented.

One challenge facing the use of CAM for treatment of pain is that there is wide variability in the credentialing and training of practitioners. Therefore, it is difficult for physicians to know where they can send their patients in the community for the highest-quality care. In fact, following the presentation, one audience member noted that he has had patients ask him for information about acupuncture, but he was not sure where to refer the patients. This experience highlights a need for a centralized list of experienced and accredited alternative medicine practitioners. Currently, CAM licensing is managed by individual states, and the degree of oversight can vary substantially from state to state. Beyond this

variability, there are some CAM subspecialties (e.g., aromatherapy) for which licensing is not required. Dr. Sperandeo-Fruge commented that forging relationships with individual local practitioners through an informal interview or meeting can illuminate the ways in which they are best equipped to help patients manage postsurgical or chronic pain.

Cognitive Behavioral Therapy and Other Nonpharmacologic Approaches to Pain Management
Margaret Rukstalis, MD, Wake Forest School of Medicine

To continue the discussion of nonpharmacologic interventions, Dr. Rukstalis presented a number of self-management pain and recovery approaches, with a focus on cognitive behavioral therapy (CBT). To illustrate the ways in which CBT can be integrated with urological surgery, she presented the key components of CBT along with an overview of the evidence supporting CBT methodologies for pain reduction and minimization of opioid painkiller risk. In addition, Dr. Rukstalis reviewed the Pain Assessment and Management Joint Commission Standards.

The overall goal of CBT treatment is to change unhelpful thoughts in order to modify behavior. In the case of urologic surgery, patients often have unrealistic expectations of postsurgical pain coupled with the belief that opioids will always relieve pain. These beliefs easily lead to the belief that continuing to take opioids will bring about relief. This thought pattern underpins the dose escalation that leads to dependence and addiction. For patients, working to establish realistic goals surrounding postoperative function and educating patients about potential opioid risks can help reduce dependence and addiction risk.

Surgeons are well poised to expose patients to CBT as a side-effect-free *and* effective self-management tool that can break the cycle of beliefs that lead to dose escalation. CBT includes multiple modalities, including problem solving, dialectical behavior therapy, and mindfulness, among others. A common thread connecting all types of cognitive therapy is identifying thoughts that come before the emotion, reflecting on the accuracy and usefulness of the thought, and transforming the thought into a more accurate and helpful internal message. Taking a moment to educate patients on how to manage pain without pharmacological interventions can help lower the risk of addiction after surgery.

In one study of CBT for chronic pain, brief mindfulness meditation over the course of four trainings resulted in a 44 percent reduction of pain.[26] Subjects were taught to pay special attention to their breath while using a nonevaluative cognitive state and that perceived sensory/affective events were "momentary" and "fleeting" and did not require additional interpretation or evaluation. In tandem with the reported reduction in pain, imaging showed that meditation-induced analgesia is associated with deactivation of the thalamus and activation of the orbitofrontal cortex, a region associated with changing the context and/or meaning of pain. These imaging results are consistent with a body of literature showing that practicing meditation can stabilize these changes. Dr. Rukstalis noted that examples of patients who have successfully used guided discovery and problem solving to manage pain also can support the use of these modalities.

In addition to providing patients with information about tools that can be used to modify behavior and thoughts surrounding pain, it is important for clinicians to be able to identify high-risk behavior. Negative thoughts about the procedure and its outcome at the outset may be a good indicator of poor

coping skills. For example, a comment like “everyone in my family has died of cancer; I probably will too,” illustrates a fear surrounding the procedure that may lead to opiate use as a coping mechanism. CBT can be used to identify and “catch” triggers so that new behaviors and thoughts can be practiced. One important aspect of presurgical preparation is developing a game plan for maximizing comfort in the postoperative setting. Patients can be encouraged to bring pictures of family, a favorite bathrobe, music, movies, or something else they enjoy to distract them. Helping patients learn behavioral techniques early on can help them minimize their risk for opioid dependence while providing them with an evidence-based tool that also can help them tackle unhelpful thoughts and behaviors in the rest of their lives, leading to enduring improvement in mood and functioning.

Urology Perspectives

Challenging Urology Cases in Opioid Management

Moderator: Tudor Borza, MD, University of Wisconsin
Panel Members: Vernon Pais, MD, MS, Dartmouth University; Matthew E. Nielsen, MD, MS, FACS, University of North Carolina; Benjamin Davies, MD, University of Pittsburgh Medical Center

Vernon Pais, MD, MS, Geisel School of Medicine at Dartmouth

Dr. Pais presented work on opioid use in kidney stones. Kidney stones are common and a leading diagnosis for opioid prescribing in emergency departments (EDs). Because kidney stones are also a chronic condition, opioids may be prescribed for short-term or longer-term intermittent use. To better understand the contribution of kidney stones to the opioid crisis, Dr. Pais and colleagues used data collected though the nationally representative, population-based Medical Expenditure Panel Survey (MEPS). Between 2008 and 2014, 1.29 percent of MEPS participants had an occurrence of kidney stones. Of these stone-former (SF) patients, 60 percent reported opioid use, a dramatic increase over the 20.2 percent reported for non--stone formers. Overall, SF patients were five times more likely than non--stone formers to receive a prescription for opioids. Compounding this issue is the impact of comorbidities: SF patients with anxiety, depression, or diabetes were even more likely to receive an opioid prescription. Strikingly, 50.1 percent of stone-forming patients obtained a refill for opioids within the first 6 months after the initial prescription, with 21.8 percent still filling opioid prescriptions after 1 year. In contrast to opioid use at 6 months, chronic opioid use was not influenced by age, gender, race, insurance provider, or income. This finding, that urology does contribute to chronic opioid use, is also supported by findings in the literature.[27-30] In one study on urological postoperative pain medication use, 67 percent of patients had surplus medication on hand and 92 percent received no disposal instructions.[27] Stone-forming patients thus may be at greater risk of long-term opiate use and dependence, which should be considered when urologists and ED physicians treat patients with kidney stones.

Dr. Pais provided a real-world example of how opioid prescribing to SFs can be reduced. In an Endourology Disease Group for Excellence stone survey of 375 patients from across seven geographically distinct areas, 61 percent of patients reported that they did not need opiates to manage stent pain. With this in mind, appropriate patient education may be able to significantly reduce opioid prescribing to this at-risk population. In addition Dr. Pais noted that it is important for physicians to reduce the need for opiates with timely intervention rather than extended courses of pain medication.

Matthew E. Nielsen, MD, University of North Carolina

Dr. Nielsen shared results from a pilot program at the University of North Carolina (UNC). Based on findings from an initial survey of patient data, a multi-aim stewardship program with the goal of creating data-driven standard opioid prescribing schedules (SOPS) was undertaken. Accompanying the development of SOPS were educational initiatives to disseminate best practices for stewardship and an effort to prevent diversion into the community by increasing access to disposal.

In addition to the broad availability of opioid disposal bins and distribution of at-home disposal bags at UNC, surgeons and nurses ask patients to bring their pills with them to postsurgical appointments. This provides an opportunity to discuss pain management and to encourage disposal if the pills are no longer needed. In addition, distribution of patient education materials prior to surgery has been helpful. Importantly, the opioid materials are glossy and full color, so they stand out from the copied black and white pages included in the preoperative materials.

With SOPS in place, UNC urology expects to release 10,000 fewer opiate doses into the community this fiscal year. Across all of the services included in the pilot study, the number of reduced doses is about 53,000. Dr. Nielsen noted the importance of engaging nurses in the development and dissemination of materials. For interventions to be effective, messaging must be consistent, and nurses are a central part of this consistency. Furthermore, the enthusiasm of some nurses led them to learn techniques for guided imagery and meditation so that they could teach their patients these techniques.

Many of the resources developed for the UNC program are available at UNCopioidsafeuse.org. Commenting on the number of available resources, especially those from Michigan OPEN, Dr. Nielsen noted that, even absent institutional involvement, physicians can use materials others have produced, apply their own brand, and bring materials to the clinic immediately.

Benjamin Davies, MD, University of Pittsburgh Medical Center

Dr. Davies presented his experience in "getting to zero" for opiate prescribing for radical prostatectomy. Initially, a wide range of opiate prescribing in urology was addressed with guidelines, educational initiatives, and individual doctor monitoring of prescribing practices. Importantly, the research Dr. Davies presented involved oncology, an area in which patients and providers may be more resistant to reducing opioid prescribing because of additional concern about quality of life and control of pain. Following the initial educational initiative, Dr. Davies worked to develop nonopioid methods for controlling patient postoperative pain following radical prostatectomy and reduce his opioid prescribing to zero.

Dr. Davies shared that discussions with patients are relatively straightforward, in that he tells them that, based on research and his clinical experience, he does not prescribe opioids. He has performed over 50 prostatectomies with no opioids and 10-15 open cystectomies without opioids. Dr. Davies shared an illustrative case study of a 55-year-old man who underwent a radical prostatectomy using the enhanced recovery after surgery (ERAS) protocol: Preoperatively, the patient received oral melatonin, acetaminophen, and Celebrex. During the operation, he received a single shot of bupivacaine, Vicodin, and Precedex. For anesthesia, he received an opioid-free regimen of propofol, ketamine, and Precedex. Postoperatively, the patient received IV Toradol, acetaminophen, and ibuprofen for 48 hours. Importantly, Dr. Davies shared that patients rarely call the office with uncontrolled pain. If they do, most often the office staff discovers that they are either not getting up to move or are not taking acetaminophen and ibuprofen on the prescribed schedule. One audience member noted that, in his own

institution, using an opioid-free regimen to avoid the hyperalgesia of administered fentanyl prior to surgery is helpful for later efforts of nonopioid pain control. Additional audience discussion highlighted a need for open communication between surgeons and anesthesiologists when working to create an opioid-free surgical environment. Though there is a need for additional research and there are instances when opioids are needed for a safe surgery (e.g., to prevent movement), there are occasions when opioids can be eliminated. Audience members also discussed how to handle postoperative pain in patients who are not able to take Toradol. One audience member noted that low-dose (2 mg) ketamine has been shown to work well for depression and can help manage pain in a hospital setting. Furthermore, buprenorphine was approved by the US Food and Drug Administration (FDA) for pain in 1992 and can be given in the hospital; multimodal approaches with gabapentin, Flexeril, and other muscle relaxants also can be helpful.

Session 3: High-Risk Patients and Expectations

Using Negotiation to Reduce Opioid Prescribing

Behfar Ehdaie, MD, Memorial Sloan Kettering

Although a number of talks earlier in the day noted the important role of patient expectations in opioid stewardship efforts, Dr. Ehdaie provided a more detailed view of strategies for negotiating with patients surrounding expectations for opioid prescribing and tapering. The work was modeled after a program in which physicians were trained in how to discuss active surveillance with patients who had low-risk prostate cancer. Following training, the percentage of patients who elected to participate in active surveillance increased from 69 to 82 percent, resulting in a relative reduction in overtreatment by 30 percent. Following publication of these results, fellow physicians reached out to Dr. Ehdaie to comment that the principals should also be applied to opiate tapering. The developed process of communication includes three steps: unfreeze, change, and refreeze, based on the behavioral psychology theory developed by Kurt Lewin.[31] A reference guide for applying this approach to opioid tapering was developed in a workshop that included 20 pain specialists, a spine physician, and a neurosurgeon. Following a few months of testing in the clinic, the reference guide was revised and finalized by another workgroup.

Dr. Ehdaie then discussed how the negotiating principles of freeze, change, and refreeze can be applied to conversations with patients about opioids. First, the process of unfreezing requires that the conversation shift from positions to understanding the patient's interests. For example, rather than responding directly to patients' requests for opioids, work to figure out why they are asking for them. This conversation informs the approach to later expectation setting and also builds empathy. Phrases like "I understand" may seem to build empathy, but in reality they signal to the patient that the conversation is leading to an opioid prescription. Instead, phrases like, "we want to move from using opioids to really personalize a management plan for you," help the patient understand that their personal experience matters while making the goals of care clear. The process of change involves providing multiple options, providing social proof, and resetting the default option. Presented options should be centered on helping patients return to their normal life and regain function and should be focused less on postoperative comfort. Providing multiple options empowers the patient to make a choice. For example, if the goal is to taper the opioids, the conversation could include statements like "we can make a plan depending on how you feel: if you really want to take [on] this problem and you feel empowered to do this very quickly, we can reduce your opioid prescription by 75 percent starting next week. If you tell me [that] this is not the right time because of other issues or a weak support system, we can just reduce opioids by 50 percent. If now is a bad time for personal reasons, we can reduce it by 25 percent." Social

confirmation provides the backdrop for these choices: patients do not want to be outliers, so statements such as "90 percent of all patients in our clinic will start the taper at this point," can help normalize the process and give the patient confidence. The process of refreezing requires that the new set of expectations be normalized. For example, if patients are told to expect some discomfort and anxiety when their dose is tapered, they are less likely to believe that the process is not timely or that they are somehow not ready to taper. In addition, it is important to develop a game plan in case the pain returns so that panic surrounding "not knowing what to do" does not overwhelm patients. Finally, it is important to identify and leverage patient assets. For example, if a patient is asked "on a scale of one to 10, with 10 being that you will not have any problems tapering at all and one being that you are absolutely certain you are worried that you might have a pain episode requiring pain medications, where are you?" the patient will rarely pick the extreme. If the patient picks four, asking them why they did not pick two can help identify strengths for them to draw on. Dr. Ehdaie finished by sharing that he and his colleagues at Harvard Business School are in the process of developing materials to be disseminated in the medical community so that surgeons can have a useful set of tools to help their patients taper opioids.

A Surgeon's Role in the Management of Opioid Misuse Disorders

Margaret Rukstalis, MD, Wake Forest School of Medicine

Dr. Rukstalis presented strategies for urologists to use in order to prevent and reduce opioid use and disorders. She began by reminding the audience that, when thinking about addiction, it is important to remember that a patient never exposed to opioids will never chronically use. There is a growing body of evidence that changes in postoperative practices can significantly reduce opioid use. For example, the practice of nurses asking if NSAIDs are sufficient for pain management has reduced opioid prescribing by 46 percent. In addition, recent publications in urology have highlighted that opioid-free procedures are possible,[32] and many institutions are developing multimodal, opioid-free anesthesia and analgesia protocols.

Although there are comorbidities, such as depression, that often accompany opioid addiction, there is not a way to predict long-term use or addiction. Also clouding the issue is the fact that pain and addiction can be overlapping, creating a situation in which both pain and dependence must be managed. Although mechanisms like planning for postoperative use of fewer than 7 days are helpful, if patients do become dependent, it is critical that it be recognized early so that the patient can receive help. The signs and symptoms of pain-opioid use disorder risks include sleep disturbance, secondary physical problems, anxiety and depression, increased stress, and cognitive distortions. Importantly, early cognitive distortion usually includes a "need" for more drug in the absence of increased pain. In order to catch opioid dependence early, patients must be screened and monitored for risk factors. Factors include a personal or family history of substance abuse, smoking and drinking, and history of depression and post-traumatic stress disorder. Dr. Rukstalis noted that, despite personal and family addiction history being significant comorbidities, it is uncommon for patients to be asked about addiction history.

Early red flags for opiate use disorder include requests for an increase in opioid dose, request for opioids by brand name, nonadherence with other therapies (e.g., physical therapy), running out of pills early, or having multiple lost prescriptions. Resistance to change in therapy; nonadherence to monitoring; and any illegal activity, such as selling or foraging prescriptions, are also serious warning signs.

Dr. Rukstalis also showed that use of nonopioid drugs, such as buprenorphine and methadone, have declined, even as opioid use has increased. Though these drugs are not without consequences, they do

prevent deaths and allow people to live and work. With only a minority of providers able to provide medication-assisted therapy, only 20 percent of patients in treatment for opioid use are offered FDA-approved medications to aid in their recovery.

The Role of Pain Specialists for Managing High-Risk Patients

Brooke Chidgey, MD, University of North Carolina

Dr. Chidgey spoke about pain clinics and how pain specialists can help manage high-risk patients. To begin, Dr. Chidgey clarified the function of pain clinics. Although physicians may refer patients to the pain clinic when they no longer are prescribing opioids or when patients test positive for cocaine, a pain clinic is not the right referral for addiction management. Rather, pain specialists include anesthesiologists; physicians who specialize in physical medicine and rehabilitation; and neurologists, psychiatrists, and internal medicine physicians. These clinicians work to improve function and quality of life with a multidisciplinary approach that includes nonpharmacologic options, such as physical therapy, acupuncture, psychological support, medications, and interventional procedures. Pain clinics can be valuable in helping to prepare for surgery, monitoring postoperative pain, helping wean patients off opioids, and managing chronic or persistent postoperative pain.

Dr. Chidgey shared characteristics of groups of patients at the highest risk for opioid abuse. It is important to understand that there is a difference between abuse (misusing medication) and dependence---an expected physiologic response with regular use. Patients with a history of substance abuse are at high risk of misuse. To minimize risks for patients, strategies include minimizing preoperative exposure to opioids, setting expectations for pain and treatment, and optimizing nonopioid strategies in the perioperative period. Dr. Chidgey noted that, in addition to pharmacologic interventions, practices such as applying ice and distraction can also ease pain.

If the patient does require opioids, the patient signs an opioid agreement with the clinic to take medication only as prescribed, to obtain prescriptions only from the pain clinic, to maintain the follow-up schedule, and to participate in urine screening and pill counts that must be consistent with their prescribed regimen.

Dr. Chidgey closed her talk by stating that communication with patients and their surgeons is critical to optimizing care. She encouraged urologists to form collaborations with pain clinic clinicians to help them manage their high-risk patients and to forge relationships if they need help weaning patients off opioids.

Session 4: Policy and Outreach

Opioid Education and Outreach

Jennifer Waljee, MD, MPH, MS, University of Michigan

Dr. Waljee opened her talk by noting that a central part of changing opioid prescribing behavior is dissemination of research findings and educational tools that are developed to address overprescribing. Effective dissemination of evidence also enhances implementation of policy and engages the community in a way that facilitates the culture change needed to drive sustained change. For example, following the 2014 change in hydrocodone scheduling, opioid prescribing in the surgical setting actually increased, because the policy was not coupled with provider education.[33] In the case of Michigan OPEN guidelines, free access for the public to recommendations on a website has improved availability of guidelines,

especially when prescriptions are being written in the context of a busy clinical day. Though availability is important, accessibility is critical as well. It is important to share messages in a way that is efficient, scalable, and iterative. Iteration is particularly important for synthesizing findings in the literature, because keeping up with opioid literature is a daunting task and can be overwhelming. One example of synthesizing the literature in a meaningful and visually appealing way is the "4 Reasons Why" brochure. This piece scales down major studies so that providers have ready access to statistics that are particularly compelling. Information about the proportion of patients undergoing a specific surgery who need an opioid; the proportion of patients who require a refill; and the proportion of patients who go on to be persistent users can help shape conversations with patients when discussing the risks of surgery and the rationale for nonopioid pain management. In addition to summarizing research, printed and online materials can help summarize legislative changes. Awareness of these changes can help patients understand the reasoning behind pain management practices and keep doctors up to date. Dr. Waljee added that dissemination should not be limited to surgeons: in one outpatient surgery clinic, the average patient interacts with 17 clinicians on top of the administrative people who are responsible for checking them in and orchestrating care. Including residents, nurses, technicians, and office staff in educational efforts can drastically improve dissemination and implementation.

Examples of patient education materials include the definition of an opioid, common risks and drug interactions, how to use opioids safely, and facts about opioid addiction. Dr. Waljee noted that the day's proceedings had reinforced that patient materials provide an opportunity to disseminate information on positive reflection and mindfulness techniques as well as other behavioral techniques that can alleviate anxiety and pain. Though information on disposal is included in the materials, data show that most patients either save medication for later use or dispose of it at home, rather than at approved locations. For this reason, distribution of at-home disposal kits is an important part of encouraging proper disposal. When patients received education and a disposal kit, disposal of unused opioid medication increased from 28 to 57 percent.

Dr. Waljee finished by sharing that community involvement and reducing stigma associated with opioid use disorder are the best ways for messages to be disseminated in a way that reach all members of the community. For example, empowering young people to discuss opioids with relevant and accessible messaging can improve awareness among their peer group.

Opioid Prescribing and the FDA Safe Use Initiative

Scott Winiecki, MD, US Food and Drug Administration

Dr. Winiecki presented an overview of the FDA's response to the opioid crisis and the FDA Safe Use Initiative. Prescribed opioids pose a risk beyond the patient who receives the prescription. Among people who abuse prescription opioids, 55 percent get them from a friend or relative for free, 20 percent get them from a prescription, and 11 percent buy them from a friend or relative. Though prescribing rates continue to vary widely, prescribing between 2012 and 2016 has been decreasing. In response to the opioid crisis, FDA priorities include decreasing exposure and preventing new addiction, supporting treatment of those with opioid use disorder, fostering development of novel pain therapies, and improving enforcement and assessing benefit risk for opioid formulations. Opioids are one of 14 active FDA Safe Use Initiative projects. The initiative is currently assessing the impact of a state intervention on high-risk prescribers to see if a targeted intervention will reduce prescribing and prevent morbidity and mortality. In this project, data from the New York prescription drug monitoring program will be used to identify high-risk prescribers who have at least one patient receiving a high daily dose of opioid, a prescription for both an opioid and a benzodiazepine, or a patient who has been on an opioid

therapy for 3 months. Educational interventions for these providers, we hope, will provide the information needed to facilitate safer prescribing practices. A letter sent to the provider will explain the reasoning for the letter and provide a link to the US Centers for Disease Control and Prevention guidelines as well as to local resources for accessing medication-assisted treatment. The goal of the project is to reduce high-risk prescribing by at least five percent statewide.

Dr. Winiecki noted that the single most effective thing that any single person can do right away to impact the opioid crisis is to get rid of unused medications. After surgery, 67 to 92 percent of patients report having unused medication on hand. Of prescriptions issued, 42 to 71 percent of tablets were not used. Of all the studies conducted on disposal, the highest rate of disposal using FDA-approved methods is nine percent.

In addition to approved take-back methods, the FDA has published a "flush list," which includes opiates, in order to minimize the risk of exposure to others when a take-back option is not readily available. Audience members commented that this position has created confusion, even among practitioners. One audience member expressed that, given the quantity of unused opioids, flushing these medications presents an environmental risk both in terms of impact on wildlife and impact on food sources. Dr. Winiecki shared that, for the FDA, minimizing risk to people outweighs the risk of any potential environmental hazard.[34]

Closing Remarks

Timothy Averch, MD, University of South Carolina, AUA Quality Improvement and Patient Safety Committee Chair

Dr. Averch closed the Quality Improvement Summit by emphasizing to attendees that the Summit is more than a venue for reporting outcomes of initiatives. Rather, it is intended as a springboard for meaningful and ongoing collaborations that can make a difference in the lives of patients and their communities. He then thanked attendees, speakers, and collaborators as well as AHRQ for its support.

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