ENHANCE HEALTHCARE'S ANESTHESIA & OPERATING ROOM REVIEW

January to March 2019

Enhance Healthcare Consulting

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Welcome To the Anesthesia & OR Review

Welcome to the inaugural edition of Enhance Healthcare Consulting's Anesthesia & OR Review! As your anesthesia and operating room partners, we take pride in keeping our clients, friends and the healthcare community up to date on issues and events. Our periodic review will cover timely topics of business and operational interest to anesthesia and OR providers, hospital leaders, and anyone involved or interested in perioperative services. We review pertinent articles from a variety of sources and will often offer our perspective on why they are important to our hospitals and community.

Geisinger Embraces Components of Perioperative Surgical Home to Re-Imagine Surgical Patient Experience and Reduce Opioid Use

Geisinger announced the launch of what they are calling ***"Proven Recovery"***, a surgical redesign program aimed at expediting healing, improving pain management and reducing opioid use. The program will be implemented across 42 surgical procedures impacting approximately 15,000 surgical cases annually, with the goal of reaching 100 surgical specialties by the end of 2019. The program embraces several components of the perioperative surgical home (PSH), specifically a focus on optimizing pre-operative nutrition, utilization of opioid-light multi-modal pain management and early post-operative mobility. Early results from the pilot of the program have been impressive, reporting an 18 percent decrease in opioid usage across the organization. During the pilot, neurosurgery and colorectal surgery patients saw their hospital stays cut in half. Earlier discharges accounted for an average savings of $4,556 per case for colorectal surgery patients.

EHC NOTE**:** *These results show the potential impact of implementing the concepts of the peri-operative surgical home. Geisinger, however has an implementation advantage in that they are an integrated delivery model, including a health plan, which allows them to design and enforce adherence to the program. While each hospital or health system has the capability to achieve similar results, the challenges of reaching that goal will vary dramatically based on the ability to align all aspects of the delivery model within their structure and alignment with surgical and anesthesia staff.*

To Pregnancy Test or Not to Pregnancy Test? That is the Question

We commonly see confusion as to requirements for pregnancy testing prior to surgical procedures. Some institutions mandate testing for females in certain age groups, sometimes supported, sometimes not supported by their anesthesia provider group. Many refer to the American Society of Anesthesiologists task force on Preanesthesia Evaluation (PAE) for support of mandated testing. In a *review* of the ASA position on the topic in the American Society of Anesthesiologists Monitor, Stephen Jackson MD clarifies that the PAE in fact recommends that Pregnancy Testing should be offered (not mandated) for females of childbearing age and that informed consent should be obtained for the testing. He further clarifies that the ASA Task Force believes that the literature is inadequate to inform patients or physicians on whether anesthesia causes harmful effects in early pregnancy.

Health System Executive Interview: Mark Penkhus, HCA

Mark L. Penkhus is a Vice President of the Physician Services Group for HCA overseeing several hospital-based physician services, including anesthesiology for the organization since 2007. Mark has extensive healthcare experience, previously serving as CEO for both community hospitals and academic medical centers. He was also a former managing partner with Ernst & Young where he focused on Performance Improvement. Mr. Penkhus spoke with Enhance Healthcare Consulting's Anesthesia & OR Review in December 2018:

EHC: How do you track operating room performance throughout y our organization?

MP: *HCA tracks OR performance via service, quality and cost metrics which offer comparison points across our organization. Examples of metrics include first case on-time starts, turnover time, OR Utilization, case cancellations and documented surgical time-outs. There is a significant benefit to having a large number of hospitals tracked with "apples to apples" data. Trends are followed, and performance considered on a relative basis among our facilities which allows us to identify those which offer the greatest opportunities for improvement and implementation of best practices.*

EHC: How do you evaluate anesthesia services at facilities in your organization?

MP: Anesthesia performance is monitored through a similar, organization-wide anesthesia dashboard. Unlike OR Metrics, there are many anesthesia specific metrics which hospitals do not track on a consistent basis. Therefore, as part of our partnership with vendors across the country, HCA has groups report some common quality metrics on a regular basis. Although group reporting capabilities vary based on size and infrastructure, many of the metrics again allow us to compare certain aspects of anesthesia performance across our hospitals on a relative basis. Certain metrics, such as surgeon and patient satisfaction, are monitored by the hospitals and identified opportunities for improvement are

addressed through regular meetings and creation of corrective actions with the anesthesia group leadership.

In today's environment most anesthesia groups require financial support from their hospitals. Physician Services Group provides internal consulting services (supported by outside subject matter experts) during contract negotiations for our hospitals which assess comparative metrics for subsidy, including subsidy per anesthetizing location, adjusted for other variables which determine anesthesia cost such as OR Utilization, payer mix, and sub-specialty coverage needs. Despite the impact of anesthesia subsidies across a large organization like HCA, we always consider the net impact of growth initiatives to the entire organization, not simply the incremental cost related to anesthesia coverage.

EHC: Are the majority of your anesthesia services provided by large national firms, smaller local firms or employed?

MP: HCA currently does not employ any anesthesia providers. With 180 hospitals across the country, we get a real-time, national perspective of the shifting dynamics in anesthesia practices and trends. We partner with a mix of local, national and regional groups and feel that in general we have good relationships with all these group types in various locations. Recent trends in anesthesia including increased compensation, payer pressures, and requests for additional coverage locations are putting financial pressure on both groups and hospitals. As the industry consolidates with public and private investor support, we anticipate escalating upward pressure by investors for financial return to result in further requests for financial assistance. I believe that in 2019 and 2020, due to a combination of factors already mentioned, we will see rapidly increasing subsidy requests. From my perspective, large organizations such as HCA will need to have various coverage options available to ensure access to required anesthesia capacity in the future.

EHC: What are your key strategic objectives for anesthesia services for the next two to five years?

MP: First I think it is important that we work increasingly closely with our partner groups to identify mutual opportunities for growth and improvement. As new perioperative services are added which require additional coverage and issues identified by individual facilities, they must be met proactively. In certain large markets we have developed anesthesia governance councils (composed of the anesthesia group and hospital leaders) to monitor provider capacity and resource allocation in an organized, data driven fashion. We anticipate being able to expand this model to more markets over the next few years. We have seen and will likely continue to see significant growth in specialty lines such as trauma, neurosurgery, pediatrics, stroke and cardiac/EP. Each of these areas has unique anesthesia coverage and cost implications for which we have improved our oversight over the past few years. I expect this oversight and coordination as well as consistency of service delivery in these complex areas will continue to develop in conjunction with our anesthesia partners.

EHC: How do you expect the anesthesia services market will evolve over the next few years?

MP: I expect large for-profit and not-for-profit hospital operators will consider employment of anesthesia providers in certain situations to control cost, quality and integration. Many systems and hospitals will support, where operationally feasible, more aggressive leverage of mid-level providers and aggressive use of technology to ensure coverage at a more reasonable cost.

Request For Proposal's (RFP's) have been effective tools for evaluation of anesthesia coverage options in the past decade, but we have seen more inconsistent results recently. With larger groups dominating RFP responses, we see vendors who are less willing to take on risk and add significant overhead costs, all of which drive up proposed subsidy support. As these large anesthesia provider groups continue to consolidate or are resold, I expect these cost imbalances to continue to escalate.

Finally, over my 12 years in this role, we have seen requests for financial support and demand for action coming much more quickly from vendors. Anesthesia provider groups of all sizes have recently begun exercising termination notices to force the renegotiation issue with their hospital. I believe that hospitals and health systems will need to become more proactive in monitoring, managing and developing mechanisms for alignment with their anesthesia relationships. Having said that, I believe that with flexibility, alignment of incentives and application of technology, health systems and anesthesia provider groups will be able to work together to continually drive efficiency and improve the quality of patient care.

EHC: Thanks Mark, we appreciate your time today.

JAMA Study Shows That Very Low Volume Surgeons Have Worse Outcomes and Longer LOS For Several Vascular Procedures

A study published in JAMA in August 2017 shows that for over 75,000 Abdominal Aortic Artery (AAA) repairs and Carotid Endarterectomies (CEA), outcomes of very low volume surgeons were significantly worse. The study was for all cases in NY state from 2000-2014. Very low volume surgeons were defined as those averaging one or less of these cases per year. Despite this low threshold, approximately 50% of surgeons met this description. For these surgeons, mortality and major complications was higher than for other surgeons. In addition, length of stay (for AAA) and 30-day readmission rate (for CEA) was higher for the low volume surgeons.

EHC NOTE: *As with any other complex, process-oriented endeavor, surgical outcomes are likely to improve with repetition and experience. The fact that about 50% of the surgeons in the referenced study average one or less of these complex procedures should shine a light on this issue for all providers and facilities. In our opinion, this issue extends also to OR and floor nursing as well as other support staff. Repetition reinforces, refines, and perfects processes. If you are a "very low volume institution" for any complex procedures, take a close look at risk adjusted outcomes. It may make sense to focus on surgical areas where your facility has adequate volume to maintain the skill set and expertise of your providers.*

5 Areas Standardization Can Be Used to Create High Value In the OR

In a *letter* published in the Anesthesia Patient Safety Foundation newsletter, a physician leader affiliated with a large national anesthesia company suggests five areas that can be standardized in the OR to promote patient safety, patient satisfaction and efficiency.

1. The Preadmission Testing Process. Tailoring PAT preparation to the specific patient and their comorbidities while following a standardized process will reduce costs and complications associated with unnecessary testing.

2. Scheduling. Implementation of a system to double-check equipment and personnel prior to the day of surgery will reduce delays and cancellations.

3. Pain Management. Establishing and teaching multimodal methods to manage perioperative pain can reduce patients' exposure to opioids and other addictive drugs.

4. Patient Handoffs. Positive patient outcomes can be increased by having every provider complete a standardized and thorough handoff when transferring the care of the patient.

5. Prioritizing Efficiency and Patient Safety. Creating checklists and other tools to be used by all providers can ensure that all steps related to patient safety are being completed without decreasing the efficiency of the OR.

EHC NOTE: *While this list was created by a member of a large national health care organization, the concepts described may be put into effect in operating rooms of all sizes and by anesthesia groups of all sizes. In fact, standardization of both the OR and anesthesia processes is a common opportunity at facilities we visit across the country.*

UCHealth Adopts Innovative Method of Scheduling Surgery That Results In an Increased Revenue of $10M

UCHealth's University of Colorado Hospitals have adopted a machine learning system for their operating room (OR) that has resulted in an increase in revenue of $10 million. In an *article* describing the results in Rev Cycle Intelligence, UCHealth's Chief Operating Officer Tom Gronow and Chief Information Officer Steve Hess partnered with LeanTaaS, a software that uses lean principles and predictive analytics. The system creates a machine learning queuing system that analyzes recent OR data to help inform decisions regarding surgery scheduling.

Their system uses predictive analytics to build a schedule that caters to the block utilization practices of the hospital's surgeons. It analyzed how well surgeons used their block times to create improved surgery schedules. The queuing platform strays away from traditional block scheduling by giving surgeons the ability to add and release blocks on their own. With this system UCHealth noticed a 4% increase in OR utilization. Gronow notes that predictive operations will be a part of successful hospitals in the future and UCHealth will be on the forefront of it.

ASA Expands Resources for Sedation Education for Non-Anesthesiologists

The American Society of Anesthesiologists has expanded its suite of educational offerings for non-anesthesiologists to now include resources for providing deep sedation. The original offering in 2015 provided simulation-based training for non-Anesthesiologist physicians and care team members in moderate sedation. It was designed to teach the pharmacological basis of moderate sedation and provide a basis for documenting adequate training to support the CMS requirement that anesthesia directors oversee sedation throughout the hospital. This original module was supplemented by a version teaching deep sedation launched in 2017 and updated in 2018. An *article* by David Martin M.D. et al in the November 2018 American Society of Anesthesiologists Monitor overviews the educational offerings and pricing for these valuable tools.

EHC NOTE: *With the rapidly expanding demand for anesthesia services in Non-OR Anesthesia (NORA) settings, we regularly see demand for sedation of patients in a variety of clinical settings exceed the capacity of anesthesia departments. From the perspectives of OR and hospital leadership, access to the educational resources from the ASA to train non-anesthesiologists in moderate and deep sedation should support safe expansion of the pool of clinical providers who can meet this demand while supporting patient safety, hospital throughput and clinical consistency. From the perspective of anesthesia groups, these tools provide professionally created resources to support meeting of CMS requirements by ensuring that all non-anesthesiologists providing sedation services are appropriately trained and that the training they receive is documented.*

EHCdata Shares Impact of OB Services on Hospital Subsidy

EHCdata is Enhance Healthcare Consulting's growing database of over 100 hospitals and anesthesia practices. This database provides real-time impactful information on anesthesia services across the United States, including information on hospital subsidies, provider compensation and more.

Multiple variables impact anesthesia subsidy calculations including types of subspecialty coverage required at the hospital. For example, EHCdata looked at the impact of obstetrics (OB) on subsidy. The date show that those facilities requiring OB coverage have slightly over a 10% increase in average subsidy per anesthetizing location. This highlights only one variable and is meant to point out the importance of anesthesia groups and hospitals understanding the impact of service requirements on subsidies during contract negotiations. With a clearer understanding of the factors that contribute to a hospital subsidy, better informed negotiations can be conducted between hospitals and groups.

February

Automated Text Messaging and Video System Shows Impressive Results in Total Joint Replacement Patients

A randomized, controlled trial performed at Rush University medical center tested the impact of an automated text and video "bot" on patients undergoing hip and knee replacements. The *study* published in the Journal of Bone and Joint Surgery, randomized 159 patients to receive traditional perioperative education vs. support via text and video through the specially designed bot. The bot reinforced discharge instructions communicated personal messages from their surgeons and offered access to instructional videos. Patients receiving the electronic support received 93 messages over a six-week period and showed meaningful increase in daily exercise, discontinued use of narcotics 10 days earlier on average, called the surgeon's office less often and had an improved range of motion as compared to the group receiving traditional perioperative education. The authors conclude that this messaging tool represents an easy-to- implement, patient and provider-friendly mechanism to improve outcomes in patients undergoing total joint replacements.

EHC NOTE: *While the current study focused on a relatively small group of patients at a single facility, the concept of using technology to communicate postoperative care plans warrants further attention and possible application to an expanded list of procedures. The ability of surgeons to customize educational tools, delivering their own expectations for postoperative care to guide the patient during recovery is attractive from a cost and time allocation perspective. One striking result from the study is the ability to discontinue narcotics an average of 10 days earlier. Given the current focus on narcotic reduction as well as efficient use of resources, we would not be surprised to see this technology expand to other procedures associated with extensive postoperative recovery.*

Interview with Dr. David Bergman – CEO of EPreop

David E. Bergman is the CEO and co-founder of ePreop. He practiced as an attending anesthesiologist at St. Jude Medical Center in Fullerton, California, where he also served as chairman for two years.

Dr. Bergman co-founded ePreop in 2008 to address the problems anesthesiologists experience related to patient care optimization, and daily administrative tasks surrounding their practice. Dr. Bergman spoke with Enhance Healthcare Consulting's *Anesthesia & OR Review* in January 2019:

EHC: Describe your product(s) for the perioperative environment

Dr. Bergman: The ePreop software was created to make anesthesiologists' lives easier. The reality is that we see patients every day and need to decide if it is safe to proceed without further intervention or optimization. The pressure to keep the OR moving is a factor, and there is no reason we should be put in that situation when we have so much data available to help guide patient readiness. Administrative

burdens have also gotten so great that they take away the joy of practice. The software suite now has three platforms: SurgicalValetTM, AnesthesiaValetTM and Surgical CDITM that work to increase efficiency, reduce waste, improve surgical outcomes and increase quality scores. We are currently integrated into almost every major EHR system, including Cerner, Epic, Meditech, and Allscripts. This helps us provide services within the provider workflow.

EHC: How many facilities or groups utilize your product?

Dr. Bergman: We have around 400 clients today, and over 15,000 total users practicing in nearly 2,000 facilities. We have another approximate 15,000 users that submit their quality data through us for formatting and compliance. The majority of these users are anesthesiologists when using the quality improvement platform, and PAT RNs when using the full surgical care coordination suite.

EHC: How does the product benefit anesthesia groups?

Dr. Bergman: We don't view groups purely as clients. ePreop partners with anesthesia groups when providing the AnesthesiaValetTM suite. We help them comply with MIPS and MACRA requirements through our quality application, capture patient experience data, streamline their billing capture and tracking, help them prepare for and compete in RFP processes, and support them when they need to show their value to contracting facilities. Our software allows them to take a more active role in managing perioperative care coordination and in capturing data to generate valuable reports, giving them a seat at the value-based table. With all of the group consolidation taking place in the market today, it is important for providers to show their value to ASC and hospital executives before a competitive evaluation takes place.

We are also formally partnered with the American Society of Anesthesiologists (ASA). This gives us direct insight into the regulatory environment changes and competitive market shifts. We are working together on multiple initiatives to ease the general administrative burden around practice, while positioning quality as part of a comprehensive strategy for group payments and negotiations that extend well beyond CMS.

EHC: Can you elaborate on how the ePreop software is able to capture comorbidities to improve Case Mix Index?

Dr. Bergman: ePreop's Surgical CDITM platform supports comorbidity capture with point-of-care guidance and a full document management module. Case Mix Index is very important to surgical facilities today, and to anesthesia groups as well. The shift to value-based care drives greater reliance on risk stratification, and use of ePreop's Surgical CDITM platform puts anesthesiologists in a unique position of being able to support accurate capture of comorbidities. Today, what frequently happens is that coders use their coding system, and then they query the surgeons asking for input after patients are already discharged. Surgeons find this process to be a nuisance, and things are regularly dropped. ePreop software reduces the number of queries the surgeons get, allowing the anesthesia group to take some of the workload off their hands. We also believe the anesthesiologist is more well-suited to review

and document accurate clinical descriptions. This leads to more appropriate reimbursement and better-quality scores. Helping hospitals capture revenue that would otherwise have been lost is a great way to solidify a relationship and position the group as a partner.

We are partnered with Cerner, and they support our integrated solution as part of their model experience. We are also integrated with Epic, and work within their App Orchard program. Whether in an ASC, stand-alone environment, or embedded into the existing EHR, the goal is to provide everything they need for documentation, patient readiness, and quality all in one place. We typically see groups start off with quality, and we help them expand into other areas.

EHC: Since this information is captured as part of the preoperative preparation process, it is not always the anesthesiologist who is gathering the information. Who else would be involved in this process?

Dr. Bergman: If it is a full care coordination model, it is almost always the PAT nurses that are being actively engaged. We do have a lot of tight integration with EHRs, so data is being pulled from there as well to help triage patients, prepare them for surgery, and provide them with the right tests and patient education.

EHC: Who pays for the product?

Dr. Bergman: It's a mixture. Usually, the group pays for the quality application, starting with AnesthesiaValetTM and then the hospital pays for the full SurgicalValetTM care coordination suite or Surgical CDITM application. That being said, we have seen groups take on the costs, and this can make a lot of sense in risk-sharing agreements, or just when the group wants to maintain more control around processes. We have also had some health systems that have purchased the AnesthesiaValetTM Quality Improvement platform. It is in both the surgical facility and the anesthesia groups' best interest to make sure they coordinate and get it right. We help facilitate this coordination as part of our standard service.

EHC: What are the costs for use of the product?

Dr. Bergman: Anesthesia groups usually start with AnesthesiaValetTM and our MIPS/MACRA components, which typically start around $500 per provider per year. We have a lot of services that can impact cost, including patient experience surveys, integrated access to the schedule, EHR clinical integration, secure messaging, billing capture, revenue cycle support tools, and a simple HIPAA-compliant case tracker which eliminates sticker books or unencrypted mechanisms of tracking. We work to ensure the group is getting value, and this is our primary concern.

This quality platform participation also provides modular access for add-ons to the full SurgicalValetTM care coordination platform. The costs are dependent on EHR, case volume, and modules contracted. The full care coordination suite used in ASCs or hospitals may include online intake forms, patient portal integration, surgeon office scheduling, patient readiness tracking, documentation management, clinical decision support tools, enhanced recovery pathways, readmission prevention services, and surgical CDI.

EHC: Do you track and link the readmission module with actual data, and can you benchmark measures such as Length of Stay within your database?

Dr. Bergman: We try to, and it is not always easy because patients sometimes go to outside facilities, making it hard to track with 100% accuracy. We have seen some of our clients do a good job tracking, and they have gotten significant results after implementation. Length of Stay is typically a bit easier to track. We do collect a wide range of data, including LOS, post-op labs, medications, comorbidities, discharge diagnosis codes, and discharge disposition. With all the data mapping we have been doing over the past decade, we now are able to report very meaningful outcome metrics.

We have a large number of metrics we can benchmark nationally. We have one of the larger benchmarking databases in the country right now. We also recently were given the Anesthesia Quality Institute contract for their database management. We are doing some exciting things with the ASA to really help groups succeed in the value-based environment. Data and analytics are at the center of this approach.

EHC: What do you calculate as the ROI for your product?

Dr. Bergman: For anesthesia groups, there is a competitive need to capture and report data. We also help them avoid large penalties, and frequently get them bonuses through MIPS and MACRA that justify the ROI. Providers using our case tracking platform have paid for the entire system with the capture of lost revenue. Groups that are in ACOs are using us more and more after recognizing they have no say without their own access to data. Seeing anesthesia groups get left out despite being part of these bundled payments and ACO programs is a serious issue. They can take control of their groups' message by owning the data and reports. These things become increasingly important when an RFP or stipend discussion comes up.

With the hospitals, ROI is based on standard types of metrics, like postoperative outcomes, decreasing delays, cancellations, time in the PACU, Case Mix Index, Length of Stay and readmission rates.

EHC: Do you have plans for any new products or upgrades to existing products that readers should be aware of?

Dr. Bergman: We have such a large volume of data now that we are really focused on our analytics and tying in some real machine learning tools and AI. We have been doing great things with using machine learning and procedure mapping. The next phase is looking at predictive modeling around outcomes based on patient risk factors. It is a really exciting time, and I am hoping we help lead a new way to deliver patient care in the perioperative arena.

EHC: What do you see as the shifting needs for technology in the perioperative environment over the next 2 to 5 years?

Dr. Bergman: I do think in the next two to five years, it is going to be all about access to data — how we are using the data, and what type of value we are providing these organizations, whether it is a group,

hospital or ASC. Right now, machine learning and artificial intelligence (AI) is about 90% hype in healthcare. Everybody is claiming they have it, but what they are really describing is core analytics. In two to five years, processes will truly be driven around machine learning and AI. It is already impacting the way most healthcare IT executives are approaching their long-term growth strategy. Hospital executives are currently more focused on tangible things, as they have to worry about near term financial performance. In the future, though, everything is going to be driven by machine learning and AI. We are trying to make sure that we are positioned properly for this transition.

EHC: Thank you, Dr. Bergman. We greatly appreciate your time.

Providers Caught in the Crossfire in Pennsylvania Management Company Transition

In a concerning turn of events in a hospital-based physician service, Emergency Department coverage has been disrupted at three Pennsylvania hospitals and providers left without pay for months. The situation, detailed in the *Philadelphia Inquirer,* relates to an emergency department management company which filed for bankruptcy, leading to an inability to pay malpractice premiums and an abrupt contract termination. Providers were left without pay, and another management company was brought in with offers of pay reductions of 20% for physicians and PA's. This has led to significant provider turnover, dissatisfaction and a potential for legal action. A labor attorney representing the providers offers the opinion that "This is an unconscionable business practice. It's inconceivable to me, particularly the sort of carrot-and-stick behavior on part of both Prime (*the Health System*) and Progressive (*the new management firm*),"

EHC NOTE: *Physicians and mid-level providers instability in a contracted management company may rarely cause major disruption in the continuity and stability of the service line. Anesthesia providers and OR/hospital leaders who are involved with an anesthesia management firm or are considering a new firm should evaluate the stability of the entity and look to the story above from Pennsylvania as a cautionary tale.*

Skills for a Successful Transition into Clinical Nurse Management

The American Association of Nurse Anesthetists (AANA) found that there was two times more turnover among nurse managers than with clinical nurses. They conducted a *study* involving 18 CRNA's to determine why turnover was so high and what knowledge, skills, abilities (KSAs) and resources could help support a CRNA's success after transitioning into a management role. The study participants were asked several open-ended questions regarding their role and experiences as CRNA managers.

The results showed that the most common barriers to transitioning into management were lack of defined responsibilities, lack of preparedness in conflict management and lack of training. 61% of interviewees had no previous management experience and "fell" into the role – this group was less likely to have received adequate training and organizational support. Interviewees, of whom 89% had over 6 years of clinical experience, stated that the most valuable resource was mentorship, and the most important skill was people skills. Overall, study participants shared that a successful nurse manager can clearly define their role, has support from their organization and mentors and is able to spend the majority of their time devoted to managerial duties. Despite this perspective, 76% of managerial CRNAs spend at least 50% of their time devoted to clinical duties.

ACS Updates Patient and Procedure-Specific Risk Calculator

The American College of Surgeons has updated a free, internet-based *Risk Calculator* which may be used by surgeons and/or patients to determine the risks associated with an anticipated procedure. The calculator, which incorporates data from 3.2 million procedures done between 2011 and 2015, uses 20 patient predictors (e.g., age, ASA class, BMI, HTN) and the planned procedure (CPT code) to predict the chance that patients will have any of the 15 different outcomes within 30-days following surgery.

Just Like a Baseball Star? Arbitration Proposed as a Solution for Out-of-Network Bills

The focus on "surprise" or out-of network bills continues, with many potential solutions being considered and implemented in a number of states. *Bloomberg* reports on a solution based on a Major League Baseball style arbitration which is in effect in several states including New York. In this construct, disputed bills place the doctor and the insurer into arbitration. Each side submits a price for services delivered and the arbitrator must choose one of the offers. This model in theory requires both parties to moderate their price request since the arbitrator must pick one or the other. Outrageous pricing by either party will likely lead to a ruling for the other.

EHC NOTE: *The spotlight on out-of-network billing will clearly have an impact on the leverage of anesthesia and other hospital-based physician groups in payer contract negotiations. Some state rules are in place, and more are under consideration, many of which place a limit on payments to "in-network" levels. The definition of in-network is often open to interpretation and as most anesthesia providers are aware, in-network rates vary significantly even in the same city or state. Ultimately, these changes shift negotiating power to payers and will likely lead to a flattening of the rates among groups toward the average. This will result in relative winners and losers, with those negatively impacted likely to approach hospital leadership for increasing levels of support to maintain provider compensation.*

Review of Financial Incentive Programs for Anesthesiologists

Dr. David Lubarsky et al. provides a detailed review *article* in the January 2019 issue of Anesthesiology. They look at financial incentives for physicians in general, with many specific examples related to anesthesiologists. Utilizing the framework of behavioral economics as well as a number of supporting studies, the authors describe issues to consider when designing and implementing incentive programs. The review details many of the premises of behavioral economics and links them to incentive program attributes. This article may be used for anesthesia (and other specialty) groups and facility administrators as they work to design performance metrics and associated financial benefits in a way to "maximize effectiveness and minimize unintended consequences."

EHC NOTE: *In the process of contract negotiations, we are frequently involved in the design and implementation of performance metrics linked to some portion of anesthesia subsidy. Sometimes designed as a withhold, sometimes as a "bonus", the vast majority of hospitals and health systems expect metrics to delineate targets and expectations. The concepts detailed in the review article by Lubarsky et al. offers an excellent resource as to how incentive measures are designed. On a lighter note, much of the information contained in the article was presented by Dr. Lubarsky at the 2017 ASA Practice Management Conference. During the presentation, he was discussing the potential pitfalls in offering different compensation for the same work (this may relate to an Anesthesiologist, CRNA, OR Nurse etc.) There is apparently a fair amount of research in this area, and he played a video highlighting one part of that body of work which is both informative and entertaining. If you have a minute (or 2 minutes and 43 seconds to be exact), check it out here.*

Can You Imagine…Uber Anesthesia?

In the Winter 2019 Communique from Anesthesia Business Consultants, Jody Locke offers an *article* considering the possibilities of an Uber-type service in anesthesia. The entertaining article draws the analogy between consumers' appetite for on-demand transportation to the desire of hospital administrators wanting on-demand 24/7 coverage for anesthesia but only wanting to pay when service is needed. Rather than hard-wiring coverage for the busiest possible day, Mr. Locke suggests that there may be an opportunity to look at things differently. To create an on-demand "Uber Anesthesia".

EHC NOTE: *While many obstacles to creating an on-demand framework of anesthesia providers exist and may seem insurmountable, certainly the concept of connecting strangers to each other as a reliable mode of transportation seemed just as unlikely several years ago. In the gig economy, perhaps healthcare may be ripe for some gig solutions. As Mr. Locke closes his article, he asks readers to imagine if someone figures out how to better match supply with demand and figures out how to make hospital-anesthesia group relations more closely resemble a win-win. It's interesting to imagine.*

Artificial Intelligence Shows Strong Early Predictive Capabilities for LV Dysfunction

A CNBC *interview* with Dr. Paul Friedman, the Chair of Cardiovascular Medicine at the Mayo Clinic, describes his work with Artificial Intelligence as an early predictor of Asymptomatic Left Ventricular (LV) Dysfunction. Using only EKG readings, the computer system has been "trained" to read the signals and identify abnormalities. Dr. Friedman tested the systems' capability to evaluate unknown EKG's and asked it to identify if the patient had Asymptomatic LV Dysfunction or as Dr. Friedman describes a "weak heart pump". The AI system was a very accurate test of patients having this condition (who may benefit from early treatment) and is also a powerful predictor of patients who will actually develop the condition over the next few years. Dr. Friedman reports that since these AI neural networks are trained on hundreds of thousands of examples, they can see subtle patterns in a EKG that a human is unable to interpret.

EHC NOTE: *Although the application discussed on the video is not designed for perioperative care, the potential for adaptation is evident. Similar technology may be used to scour preoperative data and test for high-risk patients, or to signal early warning signs intraoperatively by constantly evaluating the anesthesia data feed. It may be that over the next few years we may add an AI member to the Anesthesia and OR care teams.*

March

Ochsner is Named Walmart's 12th Center of Excellence for Joint Replacements

Retail giant Walmart has named Ochsner Health System their 12th Center of Excellence for Joint Replacements. In a press *release*, the organizations indicate that "Walmart chooses Centers of Excellence locations through a selective process, which requires hospitals to demonstrate an ability to provide excellent care, a dedication to addressing the root-cause of a patient's condition and an outstanding patient experience." Walmart offers their employees various incentives to receive their care at a designated Center of Excellence. The Walmart/Ochsner arrangement expands on an existing health insurance plan available to approximately 6,600 Walmart and Sam's Club employees in New Orleans and Baton Rouge, LA which utilizes Ochsner Health Network's physicians, hospitals and care providers to improve care and reduce costs.

EHC NOTE: *Multi-faceted partnerships involving insurance components and incentive for directed specialty care between large corporations and specific health systems hold obvious allure for both parties. Reduced cost for volume, the experience which comes with that volume and consistency in intraoperative and postoperative process and protocol should yield strong outcomes at a more manageable cost. The question for other facilities competing with such centers of excellence is how do they level the playing field? In our experience, facilities of almost any size can compete in specific specialties in their local markets by focusing efforts on a certain set of procedures and devoting resources to optimize cost, quality and outcomes. All stakeholders involved in the procedures must be integrated, and current protocols must be used – such as the perioperative surgical home, minimally invasive surgical techniques when appropriate, advanced pain control techniques and concepts of ERAS. Create partnerships with local businesses or payers using your track record as a key differentiator. While you may not be able to partner with the largest employer in the country, smaller, local partnerships can be profitable for facilities and beneficial to your communities.*

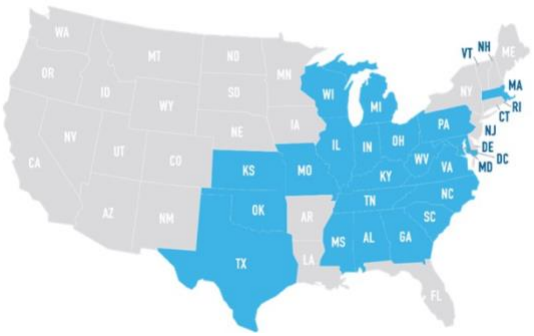
Interview with Dr. Brian Woods, President & CMO, NorthStar Anesthesia

Known as a resourceful, strategic, and inspirational executive leader, Brian Woods, MD seeks to add value to any endeavor or relationship he enters. He graduated with his medical degree from the University of Texas Health Science Center at San Antonio and completed his anesthesiology residency at UT Southwestern Medical Center at Dallas. Dr. Woods also spent seven years in the United States Air Force, where he served as Chief of Aerospace Medicine and Flight Surgeon for the 28th Bomb Squadron, receiving the Meritorious Service Medal for his reengineering of the 7th Bomb Wing's programs and services related mobility and manpower processing following 911.

In 2007 he joined NorthStar Anesthesia in Dallas Texas and has helped lead and grow services in the company to over 1,000,000 anesthetics delivers per year in over 140 hospitals and ambulatory surgery centers across 21 states. As a passionate visionary and innovative problem solver, he has led the changes required for clinical engagement of nearly 2,500 medical professionals and taken the lead on the development of innovative computer systems and technological projects that help NorthStar maintain its leading edge in the healthcare market.

EHC: How many facilities does your group cover, including hospitals and ASCs?

Dr. Woods: NorthStar Anesthesia's experience includes more than 180 transitions of anesthesia services at individual hospital and surgery center locations. Currently, the NorthStar footprint includes contracts at 143 facilities—approximately 36 of these are ASCs, with the rest being community-based hospitals.



EHC: How many physicians and CRNA's/AA's are in your group? What types of models are used at the facilities that you are involved in – CRNA-only models, medically directed or mixture of every type of model?

Dr. Woods: NorthStar's provider team includes approximately 560 physicians, 1640 CRNAs, and 30 AAs. We are experienced in operating a variety of anesthesia practice models including: 1) physician only models; 2) CRNA only models; 3) physician and care team mixed models; and 4) medical direction models. The vast majority of our facilities currently use a pure medical direction model, a select few use physician-only or CRNA-only models, while the remaining use a model including some form of medical supervision.

EHC: Have you seen an increase in the practices that are under medical supervision?

Dr. Woods: We really haven't seen a shift in facilities moving to a medically supervised model. Our mantra has always been "local law prevails." A common misperception for NorthStar and other anesthesia management groups is that we come in, fire a bunch of physicians and hire a bunch of CRNAs to stretch the models. In reality, that has never been our approach. We work with each facility to identify and implement the model that optimizes patient outcomes, improves efficiencies, reduces costs, and adheres to applicable regulations. This usually results in our matching what the facility had before our partnership. Our average supervision rate across all of our facilities is 1:2.8, and we normally employ a medically directed model.

EHC: You use a lot of physician extenders. How do you manage the relationship with them and establish alignment with group objectives, whether they are efficiency objectives and/or clinical objectives?

Dr. Woods: I think this is a key differentiator between NorthStar and all other major groups. Our national focus is not on policy or authority, it is culture. As is commonly described in the business world,

"culture eats strategy for breakfast." At NorthStar, we make sure that our culture is inclusive of both physicians and CRNAs, who are both meaningful members of the team and must both be fully utilized and respected in the process. We are not perfect at this, but that is what we work toward—and when we succeed, the best results follow. It is about establishing mutual respect and inviting great clinical providers, CRNAs and Anesthesiologists, to contribute to the best of their abilities in communication, leadership and clinical care. That is how we focus our teams on the right results in order to get the best patient outcomes.

EHC: When you compare yourself to the other large vendors across the country, what do you view as your competitive advantage?

Dr. Woods: I would put it in this order – Number one: Aligned leadership. Number two: Measuring and managing our patient outcomes. We call it the perioperative continuum, and it is our clinical quality focus. Number three: Being privately held. I think one of the things that sets us apart from all the major groups that are publicly traded is that we are still privately held. In 2018, a long-term capital partner, The Cranemere Group, purchased a majority ownership in NorthStar Anesthesia. What Cranemere has done is shift our thinking from how we move the needle on a quarterly finance report or how we move earnings to a certain point for investors over the next 24 or 36 months to asking what investments we need to make now to have a long-term, sustainable growth company over the next 20 years. That conversation in the board room, at local leadership meetings, and with our partners at local facilities changes the game. We are focused on talking about leadership investments, technical IT investments, and infrastructure for reporting and taking care of patients. The nature of the conversation is radically different when you are talking about a 20-year run versus a two-year run. In our new model, return on investment isn't required to show up two years from now—it can come in six years, as long as it planned and projected.

EHC: So NorthStar has no plans to go public in the future?

Dr. Woods: Vincent Mai, founder of The Cranemere Group, and Jeff Zients, a former Chief Economic Advisor for President Obama and Director of the Office of Management and Budget, now steer the direction of NorthStar. Cranemere operates with a long-term vision in mind, that "good companies should be held, not sold." With this new roadmap, our expectation is that NorthStar will focus on long-term sustainable growth and achievement of strategic goals.

EHC: Is NorthStar Cranemere's first foray into hospital-based physician groups or have they been involved in other specialties?

Dr. Woods: They certainly come from a long history of healthcare investment and healthcare management positions. Jeff Zients was one of the early leaders of the Corporate Executive Board and the Advisory Board, a healthcare think-tank. Through this experience, along with his time with the Obama administration, Zients has a keen appreciation of and expert knowledge in the healthcare

industry. NorthStar is Cranemere's first healthcare investment—in the short time with this relationship, we have already begun to initiate many positive changes within our organization.

EHC: Describe the use of technology in your practice.

Dr. Woods: We leverage technology as much as we can for clinical and documentation purposes but of course we are beholden to the local facilities for their choice of whatever electronic health records they want to employ. Some of the biggest systems right now are Cerner, Epic, All Scripts, etc. What we've done is chosen to be AIMS agnostic – meaning we don't care as much about what the AIMS is in place, we care more about the post-case reporting abilities. As a result of this initiative, we've gone enterprise-wide with an ePreop solution called Anesthesia Valet. We've been partnering with them for about eight years and this partnership facilitates our quality collections on the backside of case performance. We are now beginning implementation of the SurgicalValet™, suite which is the front-end of perioperative care via PAT improvements and coordination at several of our facilities. In addition to our primary technological investment through vendors and partnerships we also have our own proprietary scheduling and manpower utilization systems, as well as our analytics and practice management suites that we've been building for the last 14 years.

In the clinical space, we now play with a lot of different clinical monitoring processes specifically around hemodynamics, enhanced recovery, and goal-directed therapies. This adds to our ability to monitor and be accountable to our inputs to patient care paths, so we can measure the output and outcomes.

For our providers, over the past few years we've moved most of our CRM and our relational connectivity to the providers to mobile platform applications. Just about everything you need to do to interact with the company, with HR and with all the other departments like payroll and benefits has been moved into these mobile applications platforms so that it is easy for them when they are in between cases or moving around their busy clinical facilities.

EHC: What metrics do you use to track performance (for example – AQI, hospital quality dashboard, surgeon satisfaction, patient satisfaction, on time starts, post op pains scores etc.)

Dr. Woods: We measure most of the common metrics in the clinical environment that everybody else is chasing. Most of those are tied to what we are doing with our submissions through the ePreop QCDR, and then up to the AQI where we follow the same ASA recommendations that everybody else does. In addition, we usually have between six and ten individual performance or outcome metrics in our facility contracts, which are chosen by our facility partners. These range from first case on-time starts (FCOTS) to turnover times (TOT) to post-documentation of the 48-hour follow-up required by CMS.

We are also building out a new expansive look at our manpower utilization and productivity for physicians, CRNAs and AAs and looking at the best ways to monitor how we are doing managing our people and their time in the facility. This one is very important for us long-term and for the good of our people to be able to document the amount of hard work that's being done and use that as a leverage point in our provision of care for growing surgical volumes.

EHC: Another issue especially for a group that works in so many facilities and has such a wide geography, is maximizing your revenue cycle performance. How do you monitor and track that, and get it back on track if there are ever deviations?

Dr. Woods: We've had tremendous improvement in our RCM process management and output. We've raised our blended unit rate collected per unit by almost 21% over the last year and a half. That is attributable a lot to Ashwini Kotwal, our CFO. She has been magnificent working with our major revenue cycle vendors and has helped our billing companies become more efficient in their own processes and made our processes more efficient in getting the information to them. Because of that, negotiation of rates has shown tremendous improvement. This year our focus is on two fronts – One: using our scale and geographies in various areas to align and drive our discussions with our third-party payors. And two: measurement in our reporting data for performance and production at the individual provider level. We are trying to aid our providers through education and more individual accountability for what they're documenting in their care and what they may be missing.

EHC: What are your strategic objectives for the next 2 to 5 years?

Dr. Woods: Our strategic objectives surround a continued focus on our RCM rate negotiations and processes, reestablishing our organization's culture, and smart sustainable growth. Our growth will largely be organic in nature (with which NorthStar has a long-standing history). Additionally, we look forward to a renewed focus on growth related to strategic mergers and acquisitions.

EHC: Thank you very much Dr Woods. We appreciate your time and insight today

Expanding the Role of the Anesthesiologist to Include Hospitalist

An *article* in Anesthesiology News discusses a pilot project at the Loma Linda University Medical Center in California. The Departments of Anesthesiology and Urology teamed-up to establish a perioperative program using anesthesiologists, who are known to be experts in all aspects of the perioperative process, as hospitalists for major urological procedures between 2015 and 2017.

The project produced many positive results including a reduction in recovery time and length of stay for patients and decreased costs. Specific length of stay analyses revealed that LOS fell from a mean of 2.0 days to 1.0 day after prostatectomy (P=0.009), from 4.0 to 3.0 days after nephrectomy (P<0.001), and from 9.0 to 7.0 days after cystectomy (P=0.009). Of note, the service – which was launched as part of a quality improvement initiative – was covered by a selected group of anesthesiologists who had received training on the core competencies for hospitalist medicine. While the success of the program has resulted in Loma Linda attempting expansion to other service lines, the article concludes by asking whether anesthesiologists nationwide will seek the additional responsibilities which come along with an expanded perioperative role.

***EHC NOTE**: Incorporating anesthesiologists into the perioperative process as hospitalists is an interesting idea with positive results from this and other studies. Fulfilling this role could result in an increase in demonstrable value to hospitals and can serve as a positive point during contract renegotiations or RFPs discussions. However, in many institutions across the country anesthesiologists already find themselves juggling daily OR call coverage, governance, practice management and other responsibilities. In many cases it may be challenging to incorporate an additional "hospitalist-like" responsibility – for which it is unclear the level of reimbursement – without also increasing anesthesia staffing and thus the net anesthesia subsidy requirements.*

Comparing Apples to Apples – A Deep Dive into Anesthesia Productivity

A review *article* by Dr. Amr Abouleish et. al. in the February 2019 issue of Anesthesiology offers an in-depth analysis of anesthesia group productivity. Their focus is only on surgical anesthesia (non-obstetric care) and points out the nuances of comparing across facilities and areas of care. Anesthesia billing data may be broken down to generate many data points including hours worked, ASA units generated per hour worked, and ASA units per staffed anesthetizing site. These data points may be used to compare facilities within health systems or across different systems and to answer questions such as:

- Are we as productive as we should be?
- Do we work longer hours than other groups?
- Why has our productivity changed?
- Why do anesthesiologists at one hospital produce more than another hospital?

The most valuable and actionable information should be applied among like facilities – ASC's to ASC's, academic center to academic center etc. Using hypothetical examples, the authors demonstrate how ASA unit data can be properly (and improperly) be applied to questions like those above.

***EHC NOTE**: This study offers an in depth look into the measurement and interpretation of anesthesia operating room productivity. In our work, individual provider productivity is often proposed as a measure of relative workload. In reality, such measures are difficult to apply across groups, staffing models (all physician vs Care Team) and facility types. While the review article discussed is a relatively long read, it does a good job highlighting many common misconceptions. Productivity is complex, and depending on how it is measured, the results may not reflect reality. If you have a few minutes, take a brief comedic flashback to the "Productivity Expert" Lucille Ball in this brief clip.*

Subscription may be needed to view full article.

Anesthesia Revenue Cycle for Groups and Hospitals

Whether you are a hospital paying an anesthesia subsidy or a group trying to maximize profitability, it is in your best interest to monitor and optimize anesthesia revenue realized from payers and patients. Read the full article *here.*

The Hierarchical Nature of the Operating Room and its Consequences

The operating room (OR) team consists of nurses, surgeons, anesthetists, respiratory therapists, scrub techs and more. Oftentimes, hierarchy and fear discourage junior (or lower hierarchical level) members of the team from speaking up when they notice something wrong. A *narrative synthesis* published in the February 2019 *British Journal of Anesthesia* evaluated several studies that focused on how effective communication is crucial in the OR for efficiency and most importantly for patient safety. A negative outcome caused by lack of communication can lead to serious complications or even the death of the patient. Crisis Resource Management (CRM) is a set of non-technical skills that are required for effective communication in the operating room. It emerged from the airline industry's Crew Resource Management which was created to train junior pilots on the non-technical skills needed to ensure a safe flight. CRM consists of a set of competencies, including effectively challenging authority, and is used to train OR teams and other specialties.

The synthesis concluded that hierarchy, organizational culture and education were the top three barriers to effective communication in the OR. Addressing these barriers requires a consistent, multi-faceted approach that includes simulated scenarios that present OR teams with opportunities to speak up, training on the CRM method and incorporating tools such as a surgical safety checklist. Other barriers to speaking up in the OR include age, gender and interpersonal skills.

How Does Your Hospital Stay Profitable?

A *study* released in December 2018 by Juniper Advisory analyzed audit data from 90 independent hospitals throughout the US. They found that 61% of these facilities had operating margins under 3% which is the threshold for the ability of a hospital to sustain services, fund debt obligations and support capital growth. Equally concerning, the study reveals that in the sample group, almost half of the operating margin was due to investment income. This reliance on market returns is tenuous for any business, and the report states that portfolio losses are a real threat to many hospitals, with recent stock market declines underscoring the volatility and potential for decline. The report concludes that while "Juniper's analysis focused on standalone hospitals, health systems have also been bolstered by investment income". The findings reaffirm the need for hospitals to improve efficiency, cut avoidable costs and partner in order to operate sustainably in the near and long term.

EHC NOTE: *This study highlights an area of potential concern for all perioperative stakeholders. With 80% of hospital-based anesthesia provider groups receiving financial support to maintain services from their facilities, and with a seemingly endless list of capital requests for OR equipment and personnel, the operating room is an area with substantial cash requirements. While it is not intuitive to link the environment for investment returns to the fulfillment of these cash needs, this study implies that negative returns may drive some hospitals to critically low margins at which point cash requirements for all items including those for the OR and anesthesia may be pressured.*

"Overlapping Surgeries" Generally Sade, with Two Important Exceptions

Researchers from Harvard Medical School and Stanford University analyzed outcomes in over 65,000 patients in a *study* designed to evaluate the impact of the common practice of overlapping surgery. They found that for most patient groups and procedures the practice of overlapping did not increase mortality or complications in the immediate perioperative period. However, exceptions were found. Specifically, patients deemed high risk – those with a high predicted probability of complications (due to age and preexisting medical conditions) as well as patients undergoing coronary artery bypass experienced higher mortality and complication rates during overlapping surgeries. The lead author of the study, Eric Sun of Stanford University concluded that "While the overall findings of the study suggest that overlapping surgeries appear to be safe, we found evidence that this may not be true for all patients and all procedures," and that "Improving efficiencies and providing training opportunities should never come at the cost of patient safety."

CMS Mandatory Bundled Payment Program for Joint Replacements Yield Early Cost Savings

An *article* in the New England Journal Of Medicine looked at results from the first two years of the Comprehensive Care for Joint Replacement (CJR) program by comparing results for joint replacements in large data sets. The study compared data from hospitals participating in the bundled payment program (280,000 patients) to those not participating (377,000). Financial results showed that facilities in the CJR decreased institutional spending by 3.1% relative to those not participating. Most of the savings were driven by a 5.9% relative decrease in the rate of transfer to post-acute care facilities. Importantly, there were no significant differences in the rate of complications between the two test groups.

Robotically Assisted Surgery Risky for Certain Cancer-Related Procedures

Robotically Assisted Surgical Devices are being used at an increased rate in operating rooms for minimally invasive surgeries. They are said to reduce scarring, bleeding, infection and recovery time. According to an ***article*** in NBC News, these devices may be linked to a decrease in long-term survival for cancer-related surgery, specifically for breast and cervical cancer. The FDA warns that there is a lack of evidence regarding the benefits of robotically assisted surgery for any cancer related surgery and that devices have been used for uses not granted by market authorization by the FDA. As Doctors and patients decide which procedures to use robotic assistance, they should be aware of the lack of evidence regarding the safety and effectiveness of this form of cancer treatment so they can make the best clinical and personal decision.

ABOUT THE AUTHORS

Robert Stiefel, MD is a board-certified anesthesiologist and co-founder of Enhance Healthcare Consulting. Dr. Stiefel was a co-founder of a large anesthesia practice management company operating 27 separate facilities, a management service organization, and an internal billing and collections operation. He has over 20 years of experience as a clinical, consultant, and strategist, which allowed him to lead numerous initiatives addressing a wide variety of issues including assisting anesthesia groups re-design of governance, subsidy negotiations, policy/procedures, compensation methodology, and implementation.

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