

Development of a Preoperative Patient Clearance and Consultation Screening Questionnaire

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The optimal timing of the preanesthesia evaluation varies with the patient's comorbidities. As anesthesiologists assume a broader role in perioperative care, there may be opportunities to provide additional patient management beyond historical routine anesthesia services. This study was thus undertaken to survey our institutional perioperative clinicians regarding their perceptions of patient medical conditions that (a) need additional time for preoperative clearance by anesthesiology before actually scheduling the date of surgery and (b) warrant additional preoperative evaluation and management services by an anesthesiologist. These data were used to create a pilot version of a Preoperative Patient Clearance and Consultation Screening Questionnaire. (Anesth Analg 2016;123:1453–7)

According to the 2012 American Society of Anesthesiologists (ASA) Practice Advisory for Preanesthesia Evaluation, an anesthesiologist is responsible for medically assessing and optimizing a surgical patient.¹ This involves “(1) discovery or identification of a disease or disorder that may affect perioperative anesthetic care; (2) verification or assessment of an already known disease, disorder, medical or alternative therapy that may affect perioperative anesthetic care; and (3) formulation of specific plans and alternatives for perioperative anesthetic care.”¹

The ASA Practice Advisory for Preanesthesia Evaluation stratified patients on the level of surgical invasiveness (high, medium, or low) and severity of disease (high or low). The solicited consultant and ASA membership opinions regarding the timing of the preanesthetic interview and physical examination (before the day of surgery; on or before the day of surgery; or only on the day of surgery) were generally convergent.¹ However, the ideal timing of this preanesthesia evaluation was not clearly defined by this ASA practice advisory. Furthermore, it would appear optimal that patients with complex medical conditions be fully evaluated and optimized by an anesthesiologist well before the day of surgery.

The Perioperative Surgical Home is a new model of care that seeks to remedy the currently fragmented and costly

care in the United States by promoting greater standardization, integration, and shared decision making, thus improving clinical outcomes and decreasing unnecessary resource utilization.^{2,3} The Perioperative Surgical Home can broaden anesthesiologists' scope of practice with their participating in the more coordinated continuity of preoperative, intraoperative, and postoperative care.⁴

As anesthesiologists assume this broader role in perioperative care, there may be opportunities to provide additional clinical services beyond historical routine anesthesia services (ie, the global anesthesia fee).⁵ The ASA has thus also promulgated, “In some cases, a surgeon might request that the anesthesiologist determine *if* a patient's clinical condition is optimized to allow scheduling of a surgical procedure and, if not, request assistance in *managing* the preoperative care (eg, assessing and managing underlying clinical conditions, such as coronary artery disease, chronic obstructive pulmonary disease, asthma, diabetes mellitus, etc). These management services are beyond the scope of routine preoperative evaluation and are separately billable with appropriate documentation.”⁵ However, there is a need to efficiently and consistently identify patients who are appropriate candidates for additional preoperative evaluation and management (E&M) services by an anesthesiologist.

This preliminary, exploratory study was thus undertaken to survey our institutional perioperative clinicians regarding their perceptions of patients with specific medical conditions who may (a) need additional time for preoperative clearance by the anesthesiology service before actually scheduling the date of surgery and (b) warrant additional preoperative E&M services by an anesthesiologist. These data were then used to create a pilot version of a Preoperative Patient Clearance and Consultation Screening Questionnaire. This initial brief report is also intended to make this questionnaire available to others who might want to adapt it for their institutions.

METHODS

This study was approved by the University of Alabama at Birmingham (UAB) Institutional Review Board (E110311001). Written informed consent was obtained from

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all clinician study subjects before participation via their affirmative response on the initial page of the online electronic survey.

We administered an electronic, online clinician survey.⁴ This study survey assessed clinician opinions. This qualitative survey asked the study participants to list as free text up to 15 diseases or clinical conditions in surgical patients that they felt would indicate the need for a preoperative clearance from the anesthesiology service before scheduling an actual surgical date. No formal psychometric validity or reliability testing was performed on this qualitative survey.

Potential clinician study participants were recruited from the faculty in the UAB School of Medicine Department of Anesthesiology and Perioperative Medicine and Department of Surgery, as well as the cohort of certified registered nurse anesthetists and Preoperative Assessment, Consultation, and Treatment (PACT) Clinic nurse practitioners employed by UAB Hospital. These clinicians were invited to participate in this study via an e-mail from the principal investigator (T.R.V.). The e-mail described the purpose of the study and provided the recipient with a hyperlink to the online electronic qualitative survey through SurveyMonkey.com (SurveyMonkey®, Palo Alto, CA). To maximize the survey response rate, 2 additional survey e-mail invitations were sent at 7-day intervals to all potential study participants. The clinician survey responses were completely anonymous.

The clinician survey response rates were described using frequency counts and percentages. The raw survey responses were categorized by specific disease/clinical condition. A simple numerical count was determined for the frequency of each unique survey response.

Based on the qualitative clinician survey data, including prioritization by the frequency (numerical count) of each identified specific disease/clinical condition, a draft Preoperative Patient Clearance and Consultation Screening Questionnaire was created together by an experienced anesthesiologist who routinely works in our PACT Clinic (A.M.B.) and an experienced orthopedic surgeon (B.A.P.). The content and structure of this draft patient screening questionnaire was reviewed and revised by a second experienced anesthesiologist who is the medical director of our PACT Clinic (T.R.V.) and an experienced perioperative quality improvement nurse (S.J.C.). The final version of the patient screening questionnaire was reviewed and approved by all 4 clinicians, thus providing content validity.

RESULTS

Of the 72 recruited anesthesiologists, 31 (43%) completed the survey; of the 161 recruited surgeons, 41 (25%) completed the survey; of the 47 recruited certified registered nurse anesthetists, 23 (49%) completed the survey; and of the 13 preoperative nurse practitioners, 13 (100%) completed the survey in September and October 2015. This corresponded to an overall 37% survey response rate.

Based on the qualitative survey responses and the iterative effort of the above 4 clinicians, a final pilot version of a Preoperative Patient Clearance and Consultation Screening Questionnaire was created (Figure).

DISCUSSION

As noted in 2007 and 2014 by the American College of Cardiology/American Heart Association, the goal of a preoperative patient assessment is not to give perfunctory “medical clearance” for surgery but rather to provide comprehensive perioperative E&M, including risk stratification and optimization, as well as shared decision making among all clinicians, the patient, and family members.^{6,7}

“The timing of an initial preanesthetic evaluation is guided by such factors as patient demographics, clinical conditions, type and invasiveness of procedure, and the nature of the healthcare system.”¹ Based on a survey of our practicing clinicians, we generated a pilot version of a Preoperative Patient Clearance and Consultation Screening Questionnaire. The goal of the questionnaire is to provide greater clarity on the amount of time needed for preoperative clearance by the anesthesiology service before actually scheduling the date of surgery and the indication for additional preoperative E&M services by an anesthesiologist. This effort was intended to build on previous such reported efforts,^{8–10} while enlisting much needed input and buy-in from our local stakeholders.

In collaboration with our institutional health informatics team, we have created an electronic, tablet-based version of this Preoperative Patient Clearance and Consultation Screening Questionnaire, which will be self-completed by patients during their surgical clinic visit. The completed electronic questionnaire will be reviewed by a surgical clinic nurse, and its additional information will stream into the patient’s electronic medical record and be readily available for the surgeon and anesthesiology care team.

An affirmative patient response to any of the screening questionnaire items will result in a tentative 21-day advance surgery date and a priority PACT Clinic evaluation. The attending anesthesiologist in the PACT Clinic will then determine the actual required timeline for “clearance” (ie, the indicated preoperative management is completed), which will be conveyed to the surgical clinic within 1 business day. It is expected that some patients will not need 21 days for preoperative risk stratification (eg, cardiac stress testing) and optimization (eg, hypertension control), while others may need >21 days (eg, physiologic and psychological prehabilitation).

Selected affirmative patient response(s) to the patient screening questionnaire items will also provide the needed documentation for an additional, billable E&M consult/new patient evaluation by the PACT Clinic attending anesthesiologist.

The goal of this patient questionnaire is to improve patient care, enhance a positive patient experience, reduce inefficiencies from delays or cancellations, and eliminate unnecessary and promote necessary outside consultations. We will track a series of key performance indicators as we initially implement and subsequently scale-up the use of

⁴The administered survey is available as Supplemental Digital Content, Supplemental Appendix 1 (<http://links.lww.com/AA/B484>).

this preoperative patient questionnaire and clearance/optimization. This preoperative questionnaire and process will undergo iterative revisions based on a series of plan-do-study-act cycles. Their effects will be assessed using an interrupted time series design and a segmented regression analysis, which can be equally valid and more pragmatic

than a randomized controlled trial in evaluating such health care quality improvements.¹¹⁻¹³

Additional research is needed to better understand an observed substantial interhospital variation in preoperative consultation and to determine which patients benefit most from preoperative consultation.¹⁴ Our preliminary and



Patient Preoperative Consultation and Clearance Questionnaire

Patient Information

Patient Name: _____ **Today's Date:** _____

Patient Date of Birth: _____ **Surgeon:** _____

In order to provide the very best care for you during your surgical experience at UAB, we ask that you answer the following questions about your medical conditions. Certain conditions may need special care for you, or change the timing of your surgery. It is very important to your care that you please answer these questions carefully and as accurately as possible. There is no right or wrong answer. Your answers are confidential (private). If you need help with this questionnaire, feel free to ask clinic staff or allow a family member to assist you. Thank you.

Do you currently have or ever had any of the following?		
HEART OR BLOOD VESSEL DISEASE	YES	NO
• Too much fluid in your lungs (congestive heart failure)		
• Heart attack (myocardial infarction)		
• If you did have a heart attack, was it in the past 6 months?		
• Chest pain, shortness of breath while walking, or irregular, slow, or fast heart beat		
• Heart murmur or heart valve problem (aortic stenosis, mitral valve prolapse, etc.)		
• Any implanted devices in your heart (cardiac stents, heart valves, pacemaker or defibrillator)		
• Heart or blood vessel surgery (coronary artery bypass, valve replacement or carotid surgery)		
• High blood pressure in the lungs (pulmonary hypertension)		
• Blood clots in legs or lungs (deep vein thrombosis, pulmonary embolus)		
• Uncontrolled high blood pressure greater than 160/100 (160 over 100)		
• Are you taking blood thinners now? Examples: aspirin, Coumadin (warfarin), Plavix (clopidogrel), Effient (prasugrel), Pradaxa (dabigatran), Xarelto (rivaroxaban), Eliquis (apixaban)		
• Have you seen a heart doctor (cardiologist) within the last year?		
• Are you unable to walk up 2 flights of stairs or walk 4-6 blocks <i>without stopping</i> ? (Do not answer "yes" if the only reason that you are unable to do this is because of an orthopedic condition)		
LUNG DISEASE	YES	NO
• Severe lung disease (COPD, pulmonary fibrosis, cystic fibrosis, or frequent asthma attacks)		
• Do you use oxygen at home during the day or at night?		

Figure. (Continued)

Do you currently have or ever had any of the following?		
DIABETES	YES	NO
• Diabetes (Type I or Type II) that is difficult to control		
KIDNEY DISEASE	YES	NO
• Receive dialysis for kidney disease		
LIVER DISEASE	YES	NO
• Chronic hepatitis, cirrhosis or liver failure		
NERVOUS SYSTEM DISORDERS	YES	NO
• Stroke, transient ischemic attack (TIA), brain aneurysm, Alzheimer's or dementia, seizures, multiple sclerosis, or brain tumor		
MUSCLE DISORDERS	YES	NO
• Myasthenia gravis or muscular dystrophy		
BLEEDING OR BLOOD DISORDERS	YES	NO
• Hemophilia, sickle cell, or blood cancer		
• Do you bleed easily when cut or scraped?		
ORGAN TRANSPLANT	YES	NO
• Have you had an organ transplant?		
ALCOHOL OR STREET DRUGS	YES	NO
• Do you drink alcohol daily or heavily?		
• Do you take narcotic medications not prescribed for you?		
• Do you take street (illicit) drugs?		
If you answered YES to any of the 3 questions above about the use of ALCOHOL OR STREET DRUGS, please also answer the following 4 questions:	YES	NO
• Have you ever felt that you ought to cut down on your drinking or drug use?		
• Are you angry or annoyed when others criticize your drinking or drug use?		
• Have you ever felt bad or guilty about your drinking or drug use?		
• Have you had a drink or used drugs the first thing in the morning as an eye-opener?		
PREGNANCY	YES	NO
• Are you pregnant or do you think you could be pregnant?		
CHRONIC PAIN	YES	NO
• Do you take long-acting opioids like OxyContin (oxycodone), methadone, or Suboxone (buprenorphine)?		
ADVANCED AGE	YES	NO
• Are you 80 years of age or older?		
ANESTHESIA PROBLEMS	YES	NO
• Have you had any problems with having anesthesia in the past? Examples: Was it hard for them to get the breathing tube in place? Was it hard for you to wake up? Did you have an allergic reaction to the anesthesia drugs? Did you have a high fever because of the anesthesia drugs (malignant hyperthermia)?		
• Have any close family members had trouble with anesthesia?		

Figure. The created pilot version of a Preoperative Patient Clearance and Consultation Screening Questionnaire.

prototypic Preoperative Patient Clearance and Consultation Screening Questionnaire must thus ultimately be shown to accurately identify patients with conditions who can benefit most from cost-effective preoperative evaluation and optimization by anesthesiologist or anesthesiologist-directed processes/clinics. ■

DISCLOSURES

Name: Thomas R. Vetter, MD, MPH.

Contribution: This author created the study design, interpreted the data, revised the patient questionnaire, and helped write the manuscript.

Name: Arthur M. Boudreaux, MD.

Contribution: This author interpreted the data, created the patient questionnaire, and helped write the manuscript.

Name: Brent A. Ponce, MD.

Contribution: This author interpreted the data, created the patient questionnaire, and helped write the manuscript.

Name: Joydip Barman, PhD, MBA.

Contribution: This author created the online clinician surveys, extracted the data and helped write the manuscript.

Name: Sandra J. Crump, DNP, MBA, NP-C.

Contribution: This author interpreted the data, created the patient questionnaire, and helped write the manuscript.

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