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A Novel Use of Web-Based Software to Efficiently Triage Presurgical Patients Based on Perioperative Risk: A Pilot

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Approximately 40 million surgical procedures are performed annually in the United States. To ensure the safety of patients undergoing these procedures, it is imperative to identify and mitigate perioperative risk. Unfortunately, the process used by most hospitals and surgical centers to evaluate presurgical patients falls short on two fronts. One is a failure to identify risk factors in a timely fashion, as most preoperative evaluations occur the day before or day of surgery. The second is a failure to properly identify risk factors due to incomplete or inaccurate preoperative evaluations. These shortcomings increase morbidity and mortality, increase healthcare costs, and lower patient satisfaction. Therefore, a standardized preoperative assessment delivered in a timely fashion is needed.

To address this need, we have developed Web-based software that utilizes a patent-pending algorithm to generate a customized patient survey based on the patient's medication profile and successive responses to the survey. The survey output takes the form of a comprehensive medical history, triages patients based on health status, and provides the patient-specific information required by healthcare providers to identify and mitigate perioperative risk.

To test the feasibility of using our Web-based patient survey software to accurately assess a patient's perioperative risk, we administered the survey to a representative group of 100 patients scheduled for surgery at a 250-bed community hospital. We evaluated three primary end points:

- (1) Ability of patients to complete the Web-based survey
- (2) Accuracy and completeness of the output generated by the Web-based survey
- (3) Patient satisfaction.

Results from our pilot were overwhelmingly positive. 95% of patients were very satisfied/satisfied with the survey; 92% rated the survey very easy/easy to use; the median time to complete the survey was 14 minutes; and the mean percent agreement between the survey output and the "gold standard" (in-person interview) was greater than 90%.