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## Meet your surgical team: The impact of a resident-led quality improvement project on patient satisfaction

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### ABSTRACT

**Background:** Patients often have an incomplete understanding of the levels of training and roles of the various surgical providers in teaching hospitals, leading to patient confusion and dissatisfaction.

**Methods:** Pre-intervention discharge surveys were administered to gastrointestinal surgery inpatients (10/2016–02/2017) to evaluate sentiments regarding their surgical team. During the intervention period (02/2017–05/2017), patients at admission received “facesheets” containing team member profiles, photos, training level, and roles. These patients were evaluated using the survey, and pre- and post-intervention scores compared.

**Results:** 153 pre- and 100 post-intervention surveys were collected. There was a significant increase in patients reporting it was important to know the surgical team members and that they knew team member roles ( $p \leq 0.05$ ). Scores in every domain of the satisfaction survey improved in the post-intervention period, although not reaching statistical significance.

**Conclusions:** Improving how patients perceive their interactions with their surgical team has implications on patient satisfaction and hospital quality metrics.

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### Introduction

Academic medical centers frequently utilize a team-based approach in their care of patients, with attending physicians, resident physicians, interns, medical students, nurse practitioners, physician's assistants, and registered nurses contributing. Prior studies of emergency department and internal medicine patients have demonstrated limited patient understanding of the identity and functions of the providers caring for them.<sup>1–4</sup> Patient confusion and resultant frustration about the roles of multiple providers at various levels of training that are involved in their care impacts patient satisfaction and the ability of the physician and patient to establish a trusting relationship.

In recent years, the healthcare industry has intensified its focus

on patient satisfaction as a quality metric, and patient perception metrics are increasingly being linked to hospital reimbursements. Prior literature indicates that a patient's report of a positive hospital experience is related to the amount of information they perceive their physician has given them.<sup>5,6</sup> Santen et al. found that 80% of emergency department patients reported it was very important to them to know the level of training of the physician caring for them, although only 58% felt they actually did know the training level.<sup>1</sup> Moreover, 30% of patients incorrectly answered that an attending doctor requires supervision by a resident, and 31% incorrectly answered that a resident has not yet completed medical school.<sup>1</sup> Furthermore, a prospective study of 2807 general medicine patients revealed that the majority (75%) were unable to correctly identify a single inpatient physician in charge of their care.<sup>3</sup> These studies illustrate that patients and their families do not fully understand the roles, responsibilities, and hierarchy of the physicians caring for them, despite feeling it is important to know this information.

There is a paucity of literature regarding surgical patients' understanding of the identities and roles of the various members of a surgical team and how this impacts patient satisfaction. Beyond affecting patient-physician communication and satisfaction,

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studies of elective surgical patients have identified the patient-physician relationship as the most important factor influencing a patient's perception of safety, with miscommunication on the surgical ward as the most common negative influence.<sup>7</sup> Surgical patients who report better communication with and trust in their physicians are 30% less likely to report a complication when surveyed.<sup>8</sup> Therefore, improving how patients perceive their interactions with their surgical team could impact hospital quality metrics in a number of ways.

Few studies have investigated interventions aimed at improving patient knowledge of their hospital team. Internal medicine patients who had photographs of their medical team posted on their hospital wall were better able to correctly identify their physicians on a pre-discharge survey, which was associated with significantly higher patient satisfaction scores in physician responsiveness and handling of questions.<sup>9</sup> Our hypothesis is that a patient's understanding of their surgical team is the first key step in receiving adequate information and in having a better patient experience, and will be reflected in improved satisfaction scores. In this prospectively evaluated quality improvement effort, we assessed whether there was a difference in scores in knowledge and satisfaction domains following the distribution of a "facesheet" containing the names, photographs, level of training, and roles of surgical team members.

## Materials and methods

### Study design and population

This prospective pre-post intervention study was a resident-based quality improvement initiative targeting inpatients on surgical services at the Johns Hopkins Hospital between October 2016 and May 2017. We included patients admitted under one of six different gastrointestinal or surgical oncology services and located on one of four designated inpatient hospital units. We selected this focused patient population to minimize variations in care by including hospital units that contained predominantly abdominal surgical patients, had common patient admission and discharge education pathways, and had similar nursing and Clinical Customer Service Representative (CCSR) management. Nursing and CCSR leadership on the four hospital units were involved in project planning. We submitted this quality improvement project to the Johns Hopkins IRB for review and it was acknowledged (IRB00114165 PI: Sacks).

### Patient survey

From October 2016–May 2017, patients were asked to complete an anonymous online survey on the day of hospital discharge. This survey consisted of twelve questions, including four questions regarding basic demographic information and eight questions regarding patient's knowledge, perceptions, and feelings as they pertained to the members of their surgical team (Fig. 1). Patients responded on a 5-point Likert scale of strongly disagree (1) to strongly agree (5). The survey was reviewed by the Johns Hopkins Hospital Family Advisory Council and was administered to a small pilot patient population prior to broad distribution to assess understanding and readability of the tool. Surveys were administered by CSSRs on each hospital unit via iPad tablets that were already in use for standard discharge education.

### Facesheet intervention

From February 2017–May 2017, we provided patients and their families with a surgical service-specific "facesheet" on admission.

This single-page handout contained photographs and information about each surgical team member, including their hometown, where they studied, their level of surgical training (intern, resident, fellow, attending, nurse practitioner, and physician's assistant), and their daily role on the team (Fig. 2). When members rotated onto or off of a service, we provided updated facesheets to patients reflecting the changes. The facesheets also included an overall statement about the team model of surgical care at our academic institution. Facesheet design was reviewed by the Johns Hopkins Patient and Family Advisory Council and the Johns Hopkins Department of Surgery Quality Improvement Committee, and facesheets were administered to a group of pilot patients to assess for readability prior to project initiation. Facesheets were distributed by residents of the surgical teams during daily rounds to all patients who were not in the intensive care unit (ICU). ICU patients were excluded to reduce confusion regarding who their daily care provider was during their ICU stay, and these patients received facesheets when they were transferred to the floor.

### Sample size calculation

A power calculation was performed based on estimations of outcomes and what was believed to be a realistic sample size for collection. We anticipated, based on clinical knowledge and previous HCAHPS surveys, that responses would not be normally distributed and would be left skewed towards higher scores. Therefore, we targeted a minimum detectable difference of less than 0.5 points on the 1–5 Likert scale. We then determined a sample size that was achievable during the study period given the surgical volume on the services studied. We anticipated a total sample size of 200 would be achievable, and calculated the minimum detectable difference based on this. A two-sided alpha of 0.05 and 80% power would detect a minimum difference of 0.19 on the 1–5 Likert scale with 100 pre- and 100 post-intervention participants. These calculations allowed us to aim for a total study size of at least 200 participants with confidence that a difference between the two groups could be identified if it existed.

### Statistical analysis

For the purposes of our analyses, we split the data collected into two categories for comparison: "pre-intervention" describes the group of patients surveyed during the time period in which there was no distribution of facesheets (October 2016–February 2017) while "post-intervention" describes the group of patients surveyed after the distribution of facesheets (February 2017–May 2017). We compared categorical demographic variables using  $\chi^2$  tests. A skewed, non-normal distribution of Likert responses to study questions necessitated presenting median score and interquartile range (IQR) for each of the survey questions. Medians of pre- and post-intervention scores for each question were compared using Mann-Whitney tests. Additionally, we collapsed scores into binary categories of "Strongly Agree and Agree" vs "Neutral, Disagree, and Strongly Disagree" to better differentiate between positive and non-positive responses. These binary variables were compared using  $\chi^2$ . Statistical analysis was performed using Stata 14.0 (StataCorp, College Station, Texas). For all analyses, we considered a p-value of <0.05 to be statistically significant.

## Results

### Demographic composition of groups

There were 153 patients who completed surveys during the pre-intervention period from October 2016–February 2017, and 100

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