

The impact of a patient education bundle on neurosurgery patient satisfaction

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Abstract

Background: As reimbursements and hospital/physician performance become ever more reliant on Hospital Consumer Assessment of Health Care Providers and Systems (HCAHPS) and other quality metrics, physicians are increasingly incentivized to improve patient satisfaction.

Methods: A faculty and resident team at the University of California, San Francisco (UCSF) Department of Neurological Surgery developed and implemented a Patient Education Bundle. This consisted of two parts: The first was preoperative expectation letters (designed to inform patients of what to expect before, during, and after their hospitalization for a neurosurgical procedure); the second was a trifold brochure with names, photographs, and specialty/training information about the attending surgeons, resident physicians, and nurse practitioners on the neurosurgical service. We assessed patient satisfaction, as measured by HCAHPS scores and a brief survey tailored to our specific intervention, both before and after our Patient Education Bundle intervention.

Results: Prior to our intervention, 74.6% of patients responded that the MD always explained information in a way that was easy to understand. After our intervention, 78.7% of patients responded that the MD always explained information in a way that was easy to understand. "Neurosurgery Patient Satisfaction survey" results showed that 83% remembered receiving the preoperative letter; of those received the letter, 93% found the letter helpful; and 100% thought that the letter should be continued.

Conclusion: Although effects were modest, we believe that patient education strategies, as modeled in our bundle, can improve patients' hospital experiences and have a positive impact on physician performance scores and hospital ratings.

Key Words: Hospital Consumer Assessment of Health Care Providers and Systems neurosurgery, patient satisfaction, patient education, quality improvement

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EDITOR'S NOTE

It is no longer enough to be a clinically competent doctor. Physicians are expected to be clinically proficient as well

as are being graded and even rewarded for also being kind, considerate, compassionate, timely, responsive, and apologetic when appropriate. The following article provides a template for a letter that physicians at

University of California, San Francisco (UCSF) send to their clinic patients prior to a hospital admission for surgery. The letter's goal is to inform patients as to what to expect in terms of who, how, and when they will be treated. In addition to being informative, it is also meant to set realistic expectations that hopefully can be met. This article also shows the utility of providing patients with a photo brochure of their medical team so that they can know and track who is actually taking care of them. Not only do these interventions make sense, but data on patient satisfaction before and after implementation

is presented that suggests that patients actually appreciate and benefit from these efforts. This article showcases how physicians can humanize interactions with their patients with simple, considerate actions that can serve as an antidote to the depersonalization of medicine engendered by financial imperatives pressuring physicians to see more patients in a more timely and efficient manner while paying homage to the electronic medical record.

Michel Kliot MD.

INTRODUCTION

Although a national program to measure hospital quality was initiated by the Joint Commission in 1998,^[7] it was not until very recently that the first national, standardized, and publicly reported patient survey to evaluate hospital care and patient satisfaction was developed. This is called the Hospital Consumer Assessment of Health Care Providers and Systems (HCAHPS), and includes questions about a wide range of issues, including communication with nurses and doctors, responsiveness of hospital staff, cleanliness and quietness of the hospital, pain management, communication about medicines, and discharge planning.^[4] Under the Patient Protection and Affordable Care Act of 2010, HCAHPS has become one of the measures used to calculate value-based incentive payments in the Hospital Value-Based Purchasing program.^[3] This has led to increasing hospital and physician efforts to improve patient satisfaction.^[1]

In addition to its effect on reimbursement, patient satisfaction may also be a marker of clinical quality and patient-centered approaches. In a study of 2429 patients discharged from hospitals across the U.S., Jha *et al.* showed that higher HCAHPS scores were associated with better clinical quality, as measured by the Health Quality Alliance (HQA) scores for treatment of “acute myocardial infarction, congestive heart failure, and pneumonia – with respect to the prevention of complications of surgery.”^[5] They also found that patient-centered infrastructure such as higher nursing-to-patient-day ratios were associated with higher HCAHPS scores. This further highlights the importance of both systems-wide and individual efforts to improve patient satisfaction.

Efforts to improve patient satisfaction at other hospitals have included performing handoff procedures in front of patients,^[2] providing patients with essential information upfront,^[6] and implementing face-cards at patients' bedsides.^[8] In a study of 258 hospitalized patients with myocardial infarctions, Larson *et al.* found that patients

whose information needs regarding myocardial infarctions were met (e.g., what are the chances of another heart attack, and the ability to recognize another heart attack), reported higher satisfaction, perceived health status, and quality of life than patients who reported their information needs were not met.^[6] In another study, Simons *et al.* reported that using physician team face-cards on a medical service improved patients' knowledge of the names and roles of physicians.^[8] Although such projects may play a role in developing a strong physician–patient relationship, their impact on patient satisfaction and clinical outcomes is not yet clear.

In the UCSF Department of Neurosurgery, we first evaluated our HCAHPS scores to determine potential areas for improvement in patient satisfaction. From July to December 2013, fewer than 80% of neurosurgical patients reported that the MDs explained things in a way that they could understand, that they got information in writing about what symptoms to look out for after they left the hospital, and that hospital staff talked to them about whether they would have the help they needed after they left the hospital. In written comments, several patients also expressed frustration that they oftentimes did not know who their doctor was. Patients were unclear who was making medical decisions, because they were cared for by a large team of different medical professionals, including attending physicians, residents, nurse practitioners, and other hospital support staff.

We addressed several of these issues by (i) writing and distributing preoperative expectation letters and (ii) creating a trifold brochure with names, photographs, and specialty/training information about the care team on the neurosurgical service. The purpose of our Patient Education Bundle was to set clear expectations for the hospitalization, thereby avoiding frustration and confusion due to uncertainty (When is my doctor going to see me? Who is my actual doctor?) and to clarify the identity and roles of the different members of the neurosurgical team.

In this paper, we present the results of our Patient Education Bundle by comparing HCAHPS scores before and after our intervention (which began on January 1, 2014), as well as the results of a brief patient survey specifically regarding the bundled intervention.

MATERIALS AND METHODS

Our resident and faculty team first worked together to write preoperative expectation letters for every neurosurgery attending. Each letter included the following information: Who will see the patient while they are in the hospital (attending, resident, and/or nurse practitioner), what time the resident will round in the morning, how the patient can contact the on-call resident or attending if needed, what other hospital support staff will see the patient daily (nurses, physical therapists, pharmacists), when the patient will be allowed to eat after surgery, how to prepare for discharge home, how to care for their surgical incision, and whom to contact for a follow-up appointment (see Appendix 1 for a sample letter). These letters were distributed to all neurosurgery clinic coordinators who were instructed to give patients the preoperative expectation letter at the time they were scheduled for an elective neurosurgical procedure.

We also created a trifold brochure with pictures and brief descriptions of all of the neurosurgery attendings, residents, and nurse practitioners at the University of California, San Francisco, Parnassus campus [Figure 1]. We met with nursing supervisors on all the units that care for neurosurgical patients, and instructed nurses to distribute this brochure to all neurosurgical patients upon admission to their floor.

To evaluate the effectiveness of these two strategies, we analyzed the UCSF neurosurgery department HCAHPS scores 6 months before (July–December 2013) and 6 months after (January–June 2014) implementation of the Patient Education Bundle. We specifically selected the following three questions from the HCAHPS survey as most relevant to our study: “Did the MD explain things in a way you could understand?” ($n = 308$ July–December 2013; $n = 258$ January–June 2014); “Did you get information in writing about what health problems or symptoms to look out for after you left the hospital?” ($n = 310$ July–December 2013; $n = 268$ January–June 2014); “Did hospital staff talk to you about whether you would have the help you needed after you left the hospital?” ($n = 312$ July–December 2013; $n = 262$ January–June 2014). Chi-squared tests were performed and P values calculated for all comparisons using SPSS (IBM Corp. 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.).

We also created a brief “Neurosurgery Patient Satisfaction Survey” that was distributed by nursing staff on our neurosurgical floor to 69 randomly

selected (nonconsecutive) neurosurgical patients who agreed to participate on the day of discharge during January, February, and August of 2014. This survey had four questions: (i) Do you remember receiving the preoperative letter? (Yes/No); (ii) Was it helpful to you to have the preoperative letter? (Yes/No); (iii) How was it helpful? Respond freely; and (iv) Should we continue this practice? (Yes/No).

RESULTS

Analysis of the neurosurgery department HCAHPS scores before and after our Patient Education Bundle showed a modest trend in improvement in meeting patient information needs, although this was not statistically significant. Specifically, in the 6 months prior to our intervention (July–December 2013), 74.6% of patients responded that the MD always explained information in a way that was easy to understand. After our intervention (January–June 2014), 78.7% of patients responded that the MD always explained information in a way that was easy to understand ($P = 0.194$) [Figure 2].

Similarly, prior to our Patient Education Bundle, the percentage of patients who responded that they always got information in writing about symptoms/health problems to look out for after leaving the hospital increased from 90.9% to 94.4% after implementation of our intervention ($P = 0.103$). The number of patients who responded that hospital staff always spoke to them about help that they would need prior to discharge was nearly identical before and after implementation (90.4–90.6%, $P = 0.924$) [Figure 2].

Given that the HCAHPS scores provide an indirect measure of our intervention’s effect, we also performed our own brief “Neurosurgery Patient Satisfaction survey” to directly measure the effect of the preoperative letters. Of the 69 patients who responded to at least one question on the “Neurosurgery Patient Satisfaction survey,” 83% remembered receiving the preoperative letter; of those, 93% found the letter helpful; and 100% thought that the preoperative letter should be continued [Table 1]. Patient’s written responses included that the letter was “very informative” and that the “recommendations were very helpful.” Another wrote, “It answered questions I hadn’t thought to ask yet. Thank you and keep up the wonderful work you all do!” The results from our “Neurosurgery Patient Satisfaction survey” indicate that patients appreciate the extra information provided by our Patient Education Bundle.

DISCUSSION

Our work suggests that a Patient Education Bundle can provide a modest trend in improvement in HCAHPS scores related to communication and patient

UCSF Neurosurgery Faculty

 Professor & Department Chairman Director of Brain Tumor Research Center Specialty: Brain tumors, neuro-oncology, brain mapping, glioma, tumor resection	 Associate Professor Co-Director Center for Minimally Invasive Skull Base Surgery Specialty: Skull tumors, skull base, neuro-otology, otology, skull base	 Professor, Director of Spine Tumor & Spinal Cord Injury, Co-Director UCSF Spine Center Specialty: Spinal tumors, spinal deformity, scoliosis	 Associate Professor Director of Pediatric Spine Surgery Program Specialty: Pediatric neurosurgery, epilepsy
 Associate Professor Co-Director of Center for Head Engineering Specialty: Skull tumors, skull base, spine, trigeminal neuralgia, pain	 Associate Professor Specialty of UCSF Spine Center Specialty: Spinal tumors, complex spine disorders, minimally invasive spine surgery	 Associate Professor Director of Pediatric Neurological Surgery Program Specialty: Pediatric Neurosurgery	 Professor, Director of Center for Management and Surgery of Pituitary Neuroendocrine Disorders Specialty: Pituitary neuroendocrine disorders
 Associate Professor Surgeon Director of California Center for Pituitary Disorders Specialty: Pituitary tumors	 Associate Professor Vice Chair, Chief of Neurosurgery, Director of Skull Base Medical Center Specialty: Functional and reconstructive neurosurgery	 Professor, Vice Chairman, Director of UCSF Spine Program Specialty: Functional Disorders of the Spine	 Professor, Vice Chairman, Director of UCSF Spine Program, Neurological Program Specialty: Neurological, Neurosurgery, Radiology
 Professor & Vice Chair, Co-Director UCSF Spine Center Specialty: Spinal tumors, minimally invasive spine surgery, degenerative disease	 Professor Specialty: Pediatric Neurosurgery	 Professor, Co-Director Neurosurgery Program Specialty: Functional neurosurgery, Audiology	 Professor, Vice Chair, Director of Skull Base Tumor Program Specialty: Skull base tumors, minimally invasive endoscopic surgery

Nurse Practitioners

 Specialty: Brain Tumors Works with Dr. Berger, Theodosopoulos	 Specialty: Communicable Diseases Works with Dr. Lawton
 Specialty: Spine Works with Dr. Ames, Chou, Mumtaz, Chou, Kibbi	 Specialty: Pediatric Patients Works with Dr. Auguste, Gupta, Kibbi, Shih
 Specialty: Brain Tumors Works with Dr. McDermott	 Specialty: Epilepsy and Neurology Works with Dr. Chang
 Professor Specialty: Spinal disorders, minimally invasive spine surgery, and brain preservation	 Specialty: Brain Tumors Pediatric neurosurgery Works with Dr. Aguiar, Hart

Residents

 Medical School: Washington University in St. Louis Undergraduate: Washington University in St. Louis	 Medical School: University of California, San Francisco Undergraduate: Harvard University	 Medical School: University of California, San Francisco Undergraduate: Stanford University	 Medical School: University of California, San Francisco Undergraduate: Stanford University	 Medical/Graduate School: Virginia Commonwealth University College of Virginia Undergraduate: University of California, San Diego	 Medical/Graduate School: Stanford University Undergraduate: Stanford University
 Medical/Graduate School: Yale University Undergraduate: University of Scranton	 Medical School: University of California, San Francisco Undergraduate: University of California, Los Angeles	 Medical School: University of California, San Francisco Undergraduate: Cornell University	 Medical School: University of Michigan Undergraduate: University of California, Berkeley	 Medical/Graduate School: Health & Sciences University Undergraduate: University of Philosophy	 Specialty: Brain Tumors Works with Dr. Berger, Chang Residency: University of Michigan
 Medical/Graduate School: University of California, San Francisco and Berkeley Undergraduate: University of California, Irvine	 Medical/Graduate School: Emory University Undergraduate: Columbia University	 Medical/Graduate School: Emory University Specialty: Minimally Invasive	 Medical School: University of California, Los Angeles Undergraduate: Brown University	 Medical School: Emory University Undergraduate: Furman University	 Specialty: Functional Neurosurgery Works with Dr. Lawton, Chang Residency: University of Michigan
 Medical/Graduate School: Tufts University Harvard MIT Division of Health Sciences & Technology Undergraduate: Georgia Institute of Technology	 Medical/Graduate School: University of California, San Francisco Undergraduate: Massachusetts Institute of Technology	 Medical/Graduate School: University of California, San Francisco Undergraduate: Massachusetts Institute of Technology	 Medical School: Harvard Medical School Undergraduate: California Institute of Technology	 Specialty: Spine Works with Dr. McDermott Residency: Louisiana State University Health Science Center	

Fellows

 Specialty: Communicable Diseases Works with Dr. Lawton Residency: University of Michigan	 Specialty: Brain Tumors Works with Dr. Berger, Chang Residency: University of Michigan	 Specialty: Functional Neurosurgery Works with Dr. Lawton, Chang Residency: University of Michigan	 Specialty: Spine Works with Dr. McDermott Residency: Louisiana State University Health Science Center
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Figure 1: Neurosurgery Trifold Brochure

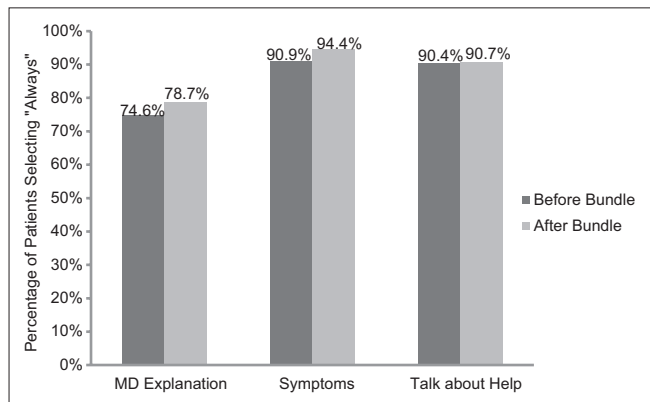


Figure 2: HCAHPS Scores Before and After Implementation of a Neurosurgery Patient Education Bundle

Table 1: Results of the neurosurgery patient satisfaction surveys

Question	n	Yes (%)
Do you remember receiving preoperative letter?	69	82.6
Was it helpful to you to have the preoperative letter?	59	93.2
Should we continue this practice?	56	100

information. However, limitations of Chi-squared test include the assumption that the two populations are independent and that it does not account for any existing trends over time. It is important to consider that the improvement in HCAHPS scores is not necessarily only attributable to our intervention, as other systems-wide

efforts (including simultaneous nursing efforts) may have also contributed to the improvement in HCAHPS scores observed during this time period. We also need to follow our HCAHPS scores for a longer period of time after our initial intervention (January 2014) to determine if there truly is a sustained, statistically significant improvement.

The “Neurosurgery Patient Satisfaction survey” provides a more direct measure of our specific intervention’s effect and shows that our preoperative expectations letter is a promising way to improve the patient experience. Although the survey sampled only a small percentage of the population, the responses were overwhelmingly in favor of our intervention, with $\geq 95\%$ of patients stating that the letter was helpful to them and that we should continue this practice. In fact, one patient stated: “*I have had many surgeries and never before did I get something like this. I wish I had gotten this helpful letter in all my other surgeries. Keep me and my family informed.*”

We believe that patients responded so positively because the preoperative expectations letter allowed medical professionals to communicate more clearly with patients and set appropriate expectations before their hospitalization. These letters provided insight into an otherwise ambiguous and nerve-wracking process (i.e., the hospitalization for a neurosurgical procedure). The trifold brochures complemented this intervention by clearly defining the roles of an otherwise large, and confusing, group of medical professionals rounding and interacting with the hospitalized patient every day.

APPENDIX I: SAMPLE PREOPERATIVE EXPECTATIONS LETTER

Dear Patient,

My medical team and I want to thank you for allowing us to take care of you. We view your choice as providing us with a great privilege and opportunity. We will do our best to give you the very best medical care while trying to be attentive and responsive to your wants and needs.

During your hospital stay, you can expect the following from us:

You will be seen on a daily basis by [attending physician name]. I will let you know the day before, what time to expect to see me the following day. You can have the medical staff page me as well or contact me at any time via email.

You will also be seen each day by our medical team which includes neurosurgery residents, who are physicians in training, as well as members of the nursing staff and a

We believe that similar Patient Education Bundle interventions would benefit patients in other specialties and hospitals outside UCSF. We continue to look into the relationship between patient satisfaction and clinical outcomes. Our preoperative letters and trifold brochures are a low cost way to address a patient’s information needs, and may lead to improved patient satisfaction. Next steps include tracking patient satisfaction over longer time periods for more robust time series analysis and investigating the association with improved patient neurosurgical outcomes.

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pharmacist. The neurosurgery resident rounds very early each morning to make sure there are no urgent medical problems that need to be addressed immediately. You will be seen and examined briefly which may unfortunately involve awakening you. These rounds are brief out of necessity and design so that the team can see all patients on the neurosurgery service. Any non-urgent issues that you have will be dealt with in a timely manner later in the day.

You will also be seen by my Nurse Practitioner each week day. She has taken care of many neurosurgery patients and is available during the daytime (8 am- 5 pm Mon-Friday) to answer questions and address issues.

In order to make the most of each visit, it may be helpful for you to write down a list of questions ahead of time. In addition, you may find it useful to use the White Board in each room with provided magic markers.

If you have any concerns and need to speak to a physician immediately at any point during your stay, please ask the nursing staff to page the neurosurgery on-call MD.

During your stay, you will also be seen by several other health care professionals who are important parts of our neurosurgery team. A nurse will be assigned to your care daily. A clinical pharmacist will assist with your medication management and will review all new medications with you prior to discharge. A physical and/or occupational therapist may work with you daily during the week, and will determine whether you will benefit from a rehab stay after surgery. A case manager will arrange rehab placement or home services (such as home physical therapy or nursing services) if necessary.

Prior to your discharge from the hospital, you will also be seen by other members of the team to facilitate your transition from inpatient to outpatient care.

Please anticipate your home needs for after surgery: For example, assign a relative, neighbor or friend to help you change your dressing or help with meals at home. Some people may want someone to be home with them for the first few days after leaving the hospital. Another suggestion is to prepare a space in a common area for you to rest. This is particularly important especially if you have to walk up and down stairs to access bathrooms, kitchens, etc.

Designate someone to transport you home from the hospital. We typically discharge patients at 10 am the day of your discharge so plan in advance for your transportation needs.

We will do our best to tell you when to expect to be discharged as soon as we can. At the time of discharge, you will receive a letter from me with specific instructions regarding wound care, follow-up clinic visits, and activity limitations and recommendations. You will also receive a hospital discharge summary that will be reviewed with you by a member of the nursing staff. In general, we would like you to keep your surgical incision clean and dry for 2 weeks from the day of surgery. The nurse practitioner and I would like to see you back in our outpatient clinic within a week if feasible. You will either be given a date and time for your next follow-up clinic appointment by the time of your discharge from the hospital, or you will be contacted shortly by one of us with this information. If you have any questions regarding your next clinic visit, please call 415-353-2241.

We will do our very best to make your hospital stay as comfortable and helpful as possible. If you have any questions or issues, please let us know so we can address them as soon as possible.

Again, we want to thank you for the opportunity to take care of you.

Sincerely,

[Attending Physician Name] and staff.