Development of a Brochure for Patients Describing a Hospitalist Service

Amy M. Knight, MD, Paula J. DeRuntz, MSN, and Scott M. Wright, MD

Abstract
Hospitalized patients want to know what to expect during their admission. This desire for information may be even greater for patients cared for by hospitalists, particularly those cared for by a multidisciplinary or shift-based hospitalist service. We developed a brochure for patients to orient them to our hospitalist service and its members. The utility of the brochure was evaluated by surveying patients before and after it was introduced. There was a significant improvement in patients’ reported understanding of the hospitalist service after brochure implementation. The approach used to develop the brochure may be viewed as a model for how to create printed materials for patients explaining the organization of other complex medical services.

Many patients are cared for by someone other than their primary care provider when they are hospitalized. This care may be provided by someone from the primary care provider’s practice doing a hospital rotation, a dedicated hospital-based provider or hospitalist, or a team of hospitalists who work in shifts to provide 24-hour coverage. While studies have shown that overall patient satisfaction does not suffer when hospitalists are used [1–3], patients and their caregivers may be more likely to report communication problems when their outpatient physician is not involved in their care [4,5]. Hospitalized patients often claim that they have not been seen by a physician, and as many as 45% report being unclear about the hospital routine and whom they should ask for help [6].

The Collaborative Inpatient Medical Service (CIMS) at Johns Hopkins Bayview Medical Center is a nonteaching service composed of 10 inpatient providers: 4 hospitalist physicians, 5 nurse practitioners (NPs), and 1 physician assistant (PA). CIMS providers work in shifts to provide coverage for their patients 24 hours a day, 7 days a week. Patients cared for by the CIMS often see a different provider from one day to the next.

Brochures and other printed materials have been used effectively to educate patients about vaccinations, back pain, prostate cancer screening, and other topics [7–10]. We developed a brochure to introduce CIMS patients to the organization of the service and its members. The approach used to develop the brochure can serve as a model for the development of information for patients describing other types of complicated medical practices.

Brochure Development
1. Identifying the characteristics and needs of the target audience
The population served by the medical center is largely low-income and English-speaking. According to our Patient Education Office, our patients on average read at an 8th-grade level. The majority of the patients cared for by the CIMS have had limited exposure to the medical system. Based on informal conversations with patients, the nursing staff, and CIMS members, we generated a list of the information needs of CIMS patients. The CIMS team then met to identify which topics were of the highest priority given the anticipated space limitations of the brochure. CIMS members believed that patient confusion about whom was responsible for their care on any given day, how to contact that person, and the roles and capabilities of NPs and PAs were the most important needs to be addressed. Others developing brochures may wish to conduct a more formal needs assessment of their patients using structured focus groups or surveys of patients and staff.

2. Defining the goals of the brochure
We developed goals for the brochure that were aimed toward addressing the information needs that had been given the highest priority. These goals were (a) inform patients about the organization of the service, (b) familiarize patients with the members of the service and their roles, (c) orient patients to the ways CIMS providers coordinate care and communicate with each other about patients, and (d) instruct patients how to reach the provider responsible for their care on any given day.

From the Johns Hopkins Bayview Medical Center, Baltimore, MD.
3. Exploring resources available for brochure production
Design. A staff member from the medical center’s Office of Communications and Public Affairs was enlisted to help coordinate the design and printing of the brochure. With the availability of desktop publishing software such as Page-Maker, others may choose to develop brochures without professional assistance.

Photography. A professional photographer on staff at the hospital was commissioned to take individual photographs of each CIMS provider. Including photographs meant the brochure would become outdated more quickly, but patient satisfaction has been shown to be correlated with patients’ ability to identify their providers from photographs [11]. Because CIMS is shift-based, it seemed particularly important to have a way to show patients pictures of the providers who had already cared for them and who would be caring for them.

Printing. A professional printing service was used, despite the availability of high-quality laser printers, because of the inclusion of photographs. The cost for printing 600 copies of the brochure was $480. We estimated that this was the number of brochures that would be used within 6 months, after which new providers would be joining the service.

4. Writing and revising the text of the brochure
Often the readability of educational materials is not appropriate for the patients receiving them [12]. There are many articles available describing how to write effective patient education materials [13–15]. Three-syllable words, medical jargon, and longer phrases were avoided. It is written at an 8th-grade reading level (generally the highest level recommended for patient literature); this was determined using the readability calculator available with Microsoft Word. The Web sites of the American Academy of Physician Assistants, American College of Nurse Practitioners, and National Association of Inpatient Physicians were helpful information resources. CIMS members had several opportunities to review drafts of the brochure and make suggestions for changes.

The text of the brochure is divided into 6 sections:
- About the CIMS Team
- Coordination of Your Care
- Contacting a CIMS Member
- What is a Nurse Practitioner?
- What is a Physician Assistant?
- What is a Hospitalist?

5. Selecting brochure design and style
The brochure was printed on a 9” x 12” sheet of 20-lb glossy white paper that was folded into thirds. The body text is set in 12-point type, the minimum size recommended for patient education materials. Other design issues considered included layout, typeface, and the use of color and graphics. The result was a brochure that was high-quality, attractive, and professional in appearance (Figure).

6. Distributing the brochure
CIMS providers give the brochure to patients at their first encounter on the medical floor. Patients are not assigned to CIMS until they reach the floor; thus, it would be costly and confusing to include it in a standard admission packet given to all patients.

Program Evaluation
Survey Methods
We conducted a survey of consecutively discharged patients both before (December 2000) and after (April 2001) the brochure was introduced in March 2001. Patients were excluded if they met any of the criteria listed in Table 1. Surveys were distributed at or near the time of discharge by CIMS members. Patients were instructed to seal the completed survey in a provided envelope and give it to any staff member prior to leaving the hospital. The surveys were marked with a survey number but had no other identifying information on them. Patients’ age, gender, and length of stay were recorded separately. The survey asked patients to respond to 5 statements using a 5-point Likert scale (“strongly agree” to “strongly disagree”). The pre-brochure survey also included a question about whether or not a brochure describing the CIMS service would be helpful. The post-brochure survey included questions about whether or not the brochure had been received and solicited comments about how it had or had not been helpful. Comparisons of patient responses before and after brochure implementation were made using t tests (SPSS Version 9; Chicago, IL).

Findings
Nineteen patients before and 32 patients after brochure implementation met exclusion criteria (Table 1). Eleven (5%) eligible patients refused to participate; for 49 (21%) eligible patients a completed survey was not collected. Seventy-five patients before and 97 patients after brochure implementation were surveyed (74% of eligible patients). Forty percent of the patients surveyed before and 51% surveyed after brochure implementation were men ($P = 0.33$). The mean age of pre-brochure patients was 57.1 years, and that of post-brochure patients was 58.9 years ($P = 0.21$). The mean length of stay was also no different (3.0 versus 3.3 days, $P = 0.06$). There was no significant difference between patients surveyed and those not surveyed with respect to gender, age, and length of stay.
Collaborative Inpatient Medicine Service (CIMS)

A guide for patients

About the CIMS Team
The Collaborative Inpatient Medicine Service (CIMS) is a skilled team of healthcare providers who specialize in the care of hospitalized patients. Our members include physicians, nurse practitioners and physician assistants. We work together to oversee your care. A healthcare provider is always in the hospital, available for you.

Coordination of Your Care
A healthcare provider from the CIMS team will see you daily. Most visits are in the morning, with additional visits as needed. You may not see the same provider from one day to the next. However, be assured that we will keep each other well informed about your medical conditions and needs. Daily team meetings and a confidential computerized database help us deliver high quality care without interruption.

Communication with your primary care provider is important to us. When possible we care for you along with your primary provider or with another physician from his or her practice. If additional expertise is needed, we will consult other Johns Hopkins specialists.

Contacting a CIMS Member
Please have questions ready for us when we come to see you. It may be helpful for you to write down your questions as you think of them. If you or a family member would like to speak with one of us at other times ask your nurse to page the CIMS provider responsible for your care that day.

After you are discharged, most questions can be directed to your primary care provider. If you need to reach a CIMS provider after discharge, please call and leave a message at 410-550-5020. Someone will return your call within 24 hours. In case of an emergency after discharge, please call 911.

What is a Nurse Practitioner?
Nurse practitioners (NPs) are experienced registered nurses who have completed Master’s level training, enabling them to diagnose and manage most illnesses independently and prescribe medications. Our NPs have additional certification in Acute Care and pursue ongoing continuing education. They also have teaching, research and leadership roles in the Department of Nursing and at the Medical Center.

What is a Physician Assistant?
Physician Assistants (PAs) are healthcare professionals whose education complements physician training. After graduation they have ongoing continuing education requirements and a recertification exam every six years. They evaluate and treat patients in collaboration with a physician. They also participate in teaching, research and leadership opportunities at the Medical Center.

What is a Hospitalist?
Hospitalists are physicians whose primary professional focus is the general medical care of hospitalized patients. All hospitalists on our service are board certified in Internal Medicine. They also have teaching, research and leadership roles in the Department of Medicine and at the Medical Center.

Meet the Members of Our Service

<table>
<thead>
<tr>
<th>Evelyn Booth Blaemire, CRNP</th>
<th>Anitx Kurek, PA-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Practitioner</td>
<td>Physician Assistant</td>
</tr>
<tr>
<td>Patty Bonn, CRNP</td>
<td>Jodi Rennert-Ariev, M.D.</td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Paula DeRuntz, CRNP</td>
<td>Philip Seo, M.D.</td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>Hospitalist</td>
</tr>
<tr>
<td>Eric Howell, M.D.</td>
<td>Deborah Starr, CRNP</td>
</tr>
<tr>
<td>Hospitalist</td>
<td>Nurse Practitioner</td>
</tr>
<tr>
<td>Amy Knight, M.D.</td>
<td>Nancy Wilson, CRNP</td>
</tr>
<tr>
<td>Hospitalist</td>
<td>Nurse Practitioner</td>
</tr>
</tbody>
</table>

Figure. The CIMS brochure.
Seventy-three percent of patients completing the pre-brochure survey indicated that a brochure describing the CIMS service would be helpful. Patients who received the brochure were more aware that they were being cared for by the hospitalist service and more often reported that they understood how the service runs (Table 2). Eighty-eight percent of patients surveyed after brochure implementation reported that they had received a brochure and 92% of these patients said they had found the brochure to be helpful. Among the 7 patients who received the brochure but did not indicate that it was helpful, 6 of them wrote in the comments section of the survey that they had not read it.

Written perceptions about the brochure were received from 21 patients. No negative impressions were recorded. Some representative comments are listed below:

- It introduced the term “CIMS,” plus it listed the mechanisms and personnel of the service.
- It helped explain how the CIMS team works together to help me get the best care possible.
- The pictures were helpful since I forget names but not usually faces.
- Now we know what each of the different titles mean: PA, hospitalist, etc.
- I feel that this was one of the most informative stays I’ve ever had at any hospital.

Some additional benefits resulted from implementing the brochure. CIMS members enjoyed having a tool to use when orienting patients to the service and its providers. While the intended audience of the brochure was patients, several members of the hospital staff reported that they finally understood how the service worked after reading the brochure. Additionally, a community provider informed us that his patient had brought the brochure to her first post-hospital visit and pointed to the photograph of a CIMS provider so that he would know who had cared for her.

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### Table 1. Number and Characteristics of Excluded Patients

<table>
<thead>
<tr>
<th>Reason for Exclusion</th>
<th>Pre-Brochure</th>
<th>Post-Brochure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transferred to another service</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Eloped from the hospital</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Died in hospital</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Non-English speaking</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Not fully oriented</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Unable to read</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Previously surveyed</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total excluded</td>
<td>19</td>
<td>32</td>
</tr>
</tbody>
</table>

### Table 2. Percent of Patients Indicating That They “Strongly Agree” or “Agree” with Survey Statements Before and After Brochure Implementation

<table>
<thead>
<tr>
<th>Survey Statements</th>
<th>Pre-Brochure</th>
<th>Post-Brochure</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>I knew I was being cared for by the Collaborative Inpatient Medicine Service.</td>
<td>70.7%</td>
<td>82.5%</td>
<td>0.032</td>
</tr>
<tr>
<td>I am satisfied with the care</td>
<td>93.3%</td>
<td>93.8%</td>
<td>0.311</td>
</tr>
<tr>
<td>I have a good understanding of how the Collaborative Inpatient Medicine Service runs.</td>
<td>58.7%</td>
<td>71.1%</td>
<td>0.032</td>
</tr>
<tr>
<td>I knew how to contact the health care provider overseeing my care during my hospitalization.</td>
<td>68.0%</td>
<td>75.3%</td>
<td>0.074</td>
</tr>
<tr>
<td>I know who to contact if I have questions after I am discharged, and how to contact them.</td>
<td>76.0%</td>
<td>79.4%</td>
<td>0.305</td>
</tr>
</tbody>
</table>

### Discussion

Several publications have described development of a brochure for a dental practice [16–18]; however, there has only been one publication about a brochure describing a medical practice [19] and none about a brochure for a hospitalist service. Providing patients with clear information about complicated health care systems may help alleviate confusion and reduce apprehension about their medical care.

We found significant improvement in patients’ reported awareness of being cared for by our team and understanding of the service after brochure implementation. All but one patient who read the brochure reported that it was helpful. In addition, the comments received support our belief that patients appreciate having a printed explanation about the service, pictures of its providers, and descriptions of the different provider types.

We had expected to find more differences between patient responses before and after survey introduction in the Likert-scale portion of the survey. Several factors may have limited the differences. First, the sample size was relatively small and this may have affected our ability to detect subtle differences. Second, high baseline scores limit the possibility of seeing an effect. The project may have heightened the awareness of the team about the complexity of the service such that they spent more time than previously allocated educating patients about it both before and after brochure deployment, resulting in
elevated scores. Additionally, the survey was distributed by members of the service, and patients may have felt obliged to report that they understood the service well. This method of distribution and data collection was driven by limited resources. We attempted to minimize this potential for bias by instructing patients to put their completed survey in the sealed envelope that was provided and to return it to any staff member, rather than just CIMS members.

Special populations might have needs that are not met by a single brochure. We did not survey patients who were vision-impaired or unable to read; these patients may benefit from an alternative form of communication, such as a videotape. Our population is predominantly English-speaking; others may need to have their brochure translated into one or more other languages.

Creating a brochure provided an opportunity for the CIMS to come together in order to define its structure and mission. Utilizing the comprehensive approach described in this manuscript ensured that the brochure would meet the information needs of patients, that it would be acceptable to all members of the service, and that it would portray the service to patients in a professional and understandable manner. Attention to the information needs of all patients encountering complex medical services should be a high priority.

The authors are grateful to the CIMS members for suggestions about and review of the brochure’s text and design and for survey distribution. We also would like to thank Sandy Reckert for assistance with brochure design and printing, and Bill Klosicki for photographic services.

This research was presented at the 5th annual meeting of the National Association of Inpatient Physicians on 9 April 2002 and the 25th annual meeting of the Society of General Internal Medicine on 3 May 2002.

Funding/support: Dr. Wright is an Arnold P. Gold Foundation Associate Professor of Medicine.

References