Teaching Resource and Information Management Using an Innovative Case-based Conference

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Physicians play a critical role in controlling resource use in medicine. This paper describes an innovative, interdisciplinary conference that teaches housestaff and medical students about resource and information management in the hospital setting. The objectives are to help foster communication between physicians and other members of the health care team, to improve the understanding of hospital reimbursement, and to influence attitudes toward practicing cost effectiveness. The conference structure includes the following components: case presentation by the treating physician and follow-up information provided by the primary care physician, a review of the itemized hospital bill, discussion of coding issues, discussion of hospital reimbursement comparing case data to institutional and state averages, and a summary of key take-home points and lessons.

**KEY WORDS:** cost; information; multidisciplinary; training; education.


Physicians play the most critical role in controlling resource use in medical practice but are often unaware of the fiscal impact of their clinical decisions. The Joint Commission on Accreditation of Hospital Organizations has provided a framework for institutions to define, manage, and measure the information needed to better utilize resources. The key to success is the integration of patient-specific, aggregate, comparative, and knowledge-based information. Physicians have expertise in patient-specific data, such as clinical history and exam, and are also skilled in using their medical knowledge to generate differential diagnosis and treatment plans. However, it is the nonclinical personnel who manage information in aggregate and who generate an institution’s comparative data.

The Accreditation Council for Graduate Medical Education endorses the teaching of managed care principles, including resource management and cost containment, to house officers. Educational and institutional interventions have demonstrated positive impact on cost and length of stay. Evidence suggests, however, that managed care educational objectives are not being universally attained in residency training programs.

Bringing together health care professionals with different areas of expertise in an educational forum could result in a rich learning experience for all. At Johns Hopkins Bayview Medical Center such an interdisciplinary case-based conference was created for physicians (faculty members and housestaff) and medical students. Invited guests have included hospital vice presidents, clinical and administrative nurses, pharmacists, laboratory directors, finance directors and staff, quality assurance staff, risk managers, utilization reviewers, record coders, and librarians. The educational goals of the conference are to improve the learner’s (especially physician’s) understanding of reimbursement in hospital medicine; improve the learner’s (especially physician’s) attitude toward managing resources, and emphasize the importance of collaboration among the entire health care team in providing efficient, effective health care.

**MONTHLY CONFERENCE STRUCTURE**

The conference is offered monthly in place of standard morning report and is facilitated by one of the authors (SK). Cases selected for the conferences have been discharged from the hospital long enough for the finance department to generate a bill and for the medical records department to complete the coding. Common, rather than unusual cases, are chosen to represent routine practice. The facilitator works with the chief residents to find cases that emphasize 1 or more core fundamental topics such as documentation, coding, resource use, and reimbursement. These core topics are covered over the course of the year by varying the content and themes of each conference. While most attendees contribute their perspective spontaneously, the facilitator will occasionally ask an attendee with particular expertise to prepare a brief presentation on a relevant topic. The following description includes the presentation of a case to help the reader understand the flow of information during the conference. Just as in the actual conference, the purpose of the case is to set a clinical tone for the discussion that will focus predominantly on resource and information management.

**Case Presentation**

The case is presented briefly and includes a summary of the hospital course. The presenter is the house officer or
attending physician who cared for the patient during their hospital stay. This physician addresses any clinical questions including quality of care and outcomes before this segment is completed. Lastly, ambulatory follow-up from the primary care physician is incorporated, as this valued component is often lacking in traditional medical conferences. Lengthy debates about clinical management are discouraged to allow time for a focus on financial and administrative aspects.

A 62-year-old female presented to the emergency department with a complaint of hemorrhoidal pain and rectal bleeding for 1 day. While in the emergency department, she complained of 10 minutes of substernal chest pain. She was admitted for assessment of the bleeding and chest pain.

Her past medical history included previously stable exertional angina. She suffered a non-Q wave myocardial infarction 2 months prior to admission. A myocardial perfusion scan postinfarction was positive for a small reversible inferior defect and preserved ejection fraction. Other history included hepatitis C, gastroesophageal reflux disease, alcoholism, and tobacco use.

Physical exam was unremarkable except for a nontroubled, distended abdomen without evidence of ascites or hepatosplenomegaly, and a tender rectal exam with stool positive for occult blood.

The patient was ruled out for myocardial infarction with normal cardiac enzymes. Her electrocardiogram remained unchanged. Her hematocrit fell to 25%, and she was transfused 2 units of packed red cells. A cardiologist considered cardiac catheterization. A decision was made not to pursue catheterization at that time, as the patient remained symptom-free after the transfusion.

Review of the Itemized Hospital Bill

The patient-specific focus is maintained as the itemized hospital bill is reviewed. The itemized bill is available through the patient accounts department of the hospital. It shows the individual facility charges for the patient’s hospitalization. Elements of the bill are selectively reviewed and learners are given opportunities to ask questions and comment on specific charges. Charges are compared for different medications, procedures, and laboratory tests. Charges for room rates and service items such as occupational and physical therapy, anesthesia time, and emergency department time are also highlighted (see Table 1). Professional physician fees are occasionally obtained separately from the billing office and reviewed during the conference.

<table>
<thead>
<tr>
<th>Table 1. Select Charges from the Patient’s Itemized Hospital Bill</th>
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<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Complete blood count</td>
</tr>
<tr>
<td>Troponin I</td>
</tr>
<tr>
<td>Electrocardiogram</td>
</tr>
<tr>
<td>Packed red cell unit</td>
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<tr>
<td>Ward room and board, per day</td>
</tr>
</tbody>
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* Total charges of $406.20 include charges for typing and matching blood products.

The distinction between symptoms and diagnoses is repeatedly raised. The importance of clear and thorough documentation is emphasized. Physicians are taught the complexities of coding cases and how poor communication handicaps the professional coders.

The opportunity to teach about the International Classification of Diseases and Diagnosis Related Group systems usually presents itself during this portion of the conference. These systems are used to aggregate similar cases into a common language. Consensus is reached for the most appropriate DRG for the case in question. For each conference, a coder prepares a table that lists the selected DRG and other potential DRGs that had the case been slightly different or the documentation less or more specific (see Table 2).

Hospital Comparisons

Comparative data is compiled by submitting the applicable DRGs to the director of hospital finance or his/her designee. The final charges for the presented case are compared to both institutional and state averages for the assigned DRG and potential comparison DRGs (see Table 3). Attendees are taught that individual cases fit into a broader context and that institutions are held accountable for variances from benchmarks.

With this as a background, mechanisms for hospital reimbursement are reviewed. The facilitator directs a discussion about prospective payment and charge-based reimbursement. The financial impact on the hospital of documenting severity of illness, improving utilization, and minimizing denied payment days is emphasized. Periodically, discussions centered on capitation, managed care, and inpatient risk share emerge. Administrators, nurses, utilization managers, attending physicians, students, and housestaff have the opportunity to see how each of their individual roles effects the final product, the episode of care.

Take-home Points

At the end of the conference, the most important lessons brought forth by the case are summarized. In this example, the attendees learned about the costs involved in