Distribution of Services and Compensation in Multidisciplinary Head and Neck Cancer Care

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Abstract: Distribution of services and compensation in multidisciplinary head and neck cancer care

Objective: Multidisciplinary head and neck cancer treatment demands the coordinated services of several specialties. The reimbursement for services to these patients was analyzed in order to develop a plan for cost sharing of infrastructure expenses.

Study Design: Retrospective Billing Review

Methods and Subjects: Facility, professional, laboratory and other charges and reimbursements from typical patients was analyzed for revenue stream.

Results: There were 251 median charges per patient for acute malignancy care (range 224-435 charges). Infrastructure reimbursement represented 68.1% of collections and professional fees represented 31.9%. The average reimbursement to the otolaryngology department was $2012/patient. The average reimbursement per patient to the system was $53,861.

Conclusions: The head and neck team receives small amounts of total reimbursements. Protocol treatment generates significant downstream revenue for the health care system easily offsetting the “up front” costs of clinical trial infrastructure.
Introduction

Squamous cell carcinoma of the head and neck will affect 45,600 patients in the U.S. in 2007, by American Cancer Society estimates. For advanced malignancies, combined modality chemoradiation therapies for organ preservation are utilized with increasing frequency for treating lesions of the larynx, hypopharynx, and oropharynx. An increasing amount of this complex care requires additional resource utilization. We found that head and neck surgical oncology collections are roughly equivalent to the infrastructure cost of enrolling a patient on a national cancer cooperative group clinical trial (ECOG, RTOG, SWOG, etc.) which acts as a huge disincentive to participating in these programs.
Methods

For the present analysis, we asked our billing supervisor to anonymously pull the billing records of 7 patients from a list of approximately 150 typical patients (2004-06) who received multimodal care. Patients were required to receive full course chemotherapy (3+ cycles) and radiation therapy (> 6000cGy), in addition to surgery for their malignancy. Next, the treatment duration was defined as beginning with their first visit to the otolaryngology clinic and ending at the conclusion of their therapy for their acute cancer. We terminated the analysis at 2000 separate patient charges, which occurred by the seventh patient on the list. The reimbursements were not adjusted for inflation.
Results

Seven patients receiving multidisciplinary care consisting of surgery, radiation therapy, and chemotherapy were analyzed. There were 2001 individual charges for services and studies performed. The number of charges per patient ranged from a low of 224 to a maximum of 435 charges, with a median of 251 and a mean of 285.9. This is depicted in Table I. The term “reimbursable charges” refers to those charges not included in surgery globals, or other areas of payer “bundling”.

Next, we analyzed the reimbursement of the infrastructure, versus the professional fee (CPT) based reimbursements to physicians caring for these patients. Infrastructure reimbursement (facilities, chemo infusions, laboratory, linear accelerator treatments, etc.)
represented 68.1% of the reimbursed charges. The CPT based professional fee reimbursement, as a % of total patient care reimbursement, was 31.9% of the total reimbursements as follows: Medical oncology 8.2%, Otolaryngology 11.3%, Radiation Oncology 38.9%, and other physician services (Interventional radiology, general medicine, radiology, pathology, med subspecialty, etc) 41.6 % (Figure 1).

The total combined billing for our 7 typical head and neck comprehensive patients was $1,011,595.00 or an average of $144,513.57 per patient. The total reimbursement to the health care system for these patients was $377,027.13 or an average of $53,861.02 per patient. Department otolaryngologists received $2012/patient. This amount represents 4% of the total reimbursements for the care of each patient.
Conclusions

1) Contemporary management of advanced head and neck cancer is highly complex and involves cutting edge medical technologies from a variety of service lines at a large medical center. The infrastructure costs for this venture are very expensive.

2) The cost of enrolling patients on large clinical trials is revenue neutral, meaning that surgeons only difficultly obtain income from this service.

3) Large amounts of system revenue from this effort should allow for cost shifting of infrastructure costs from departments to health care systems.
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Table I. Number of Reimbursable Charges for Multidisciplinary Head and Neck Cancer Care

<table>
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<tr>
<th>Patient</th>
<th>Number of Reimbursable Charges</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>224</td>
</tr>
<tr>
<td>2</td>
<td>435</td>
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<tr>
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<td>6</td>
<td>305</td>
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<td>7</td>
<td>251</td>
</tr>
</tbody>
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Total Number of Charges: 2001
Median: 251
Mean: 285.85
Infrastructure: 68%
- Professional: 32%
- Other MD: 42%
- Rad Onc: 39%
- Otolaryngology: 11%
- Medical Oncology: 8%
- Medical Oncology: 8%
- Other MD: 42%
- Rad Onc: 39%