

## Medical billing training for resident physicians

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### A. Study Purpose and Rationale

The Associates of Internal Medicine (AIM) practice of Columbia University Medical Center is a resident physician clinic that serves the community of Upper Manhattan. While the medical education of the resident physicians is superb, the residents are never trained in medical billing. This leads to inappropriate visit codes to bill for services involving the evaluation of patients and the management of their care, which consists of not billing for each service rendered and for each medical issue addressed, and improper medical documentation to support billing. Proper medical billing allows for appropriate reimbursement from Medicaid for the patient services rendered by the medical staff at AIM. Since improper coding is a problem, a training seminar on medical billing for services would likely increase reimbursement. Thus, this would allow the AIM clinic greater revenue to expand its services to its community of patients.

### B. Study Design and Statistical Analysis

Resident physicians were randomized into 4 practice firms at the start of their residency. These firms have a similar number of internal medicine residents, serve the same patient population, and have identical access to all ancillary services, attending physicians, and clinic equipment. The only outstanding difference of the firms is the hallway off of which their clinic offices stand. Firms 1 and 2 have offices off the northern hallway. Firms 3 and 4 have offices off the eastern hallway. Firms 1 and 2 will be designated the intervention group. Firms 3 and 4 will be designated the control group. Resident physicians will remain in their assigned group throughout the study.

The study will run for 3 months, which should allot approximately 2000 patient visits, 1000 in each group. The patient visits included in the study will be restricted to the scheduled general medicine continuity patient encounters, which include any Medicaid patient scheduled in advance to see an internal medicine resident for a routine visit. These exclude any patient who is seen in "walk in clinic" for an acute condition.

The average patient encounter is reimbursed \$40. 68% of the patient encounters range from \$20-\$60. The standard deviation is \$20. Using an unpaired t-test and assuming 1000 patient encounters per group for 3 months, with a study power of 80%, we can expect to detect at least an increase in reimbursement of \$2.50 per patient visit.

### C. Study Procedure

The resident physicians will be divided into 2 groups as described above. The intervention group will receive a 3 hour seminar on medical billing in lieu of a clinic session at the start of the study. This seminar will discuss how to appropriately designate the level of the patient visit, which consists of the time of the visit in addition to the complexity of the patient's issues, the appropriate ICD-9 codes, how to bill for any procedures or patient education, how to code for split visits, how to write medical notes which support the billing codes, etc. The residents will be asked to sign an agreement that they will not share this information with the residents in the control group. This agreement and the separation of the clinics by location should help to eliminate cross-contamination of the groups.

The control group will also be exposed to a 3 hour seminar in lieu of a clinic session. However, this seminar will discuss the healthcare practices in the Dominican Republic. This will equalize exposure that both groups will have to the research team.

Both groups will be told that their billing statements will be reviewed by a study committee.

Prior to the seminar on medical billing, we will look at the baseline reimbursement per patient visit in both groups. We will retrospectively assess billing from both the intervention and control group over the past one month to account for variability.

Seasonal variations in illness should not affect this study, as we have excluded any non-scheduled visit for an acute indication.

#### **D. Study Drugs**

There will be no drugs used for the purpose of this study.

#### **E. Medical Device**

There will be no medical devices used in this study.

#### **F. Study Questionnaires**

There will be no questionnaires used in this study.

#### **G. Study Subjects**

The study subjects will be the internal medicine resident physicians who practice at AIM. The number of patient encounters the residents have over 3 months will be the number used per group in the statistical analysis to assess the effect in reimbursement that the billing seminar provided.

The inclusion criterion for the patient encounter is that the patient must be scheduled in advance for a general medicine continuity clinic at the AIM practice. These will include both new patients and returning patients. These are patients who are presenting for a routine general medicine visit or have chronic medical issues that require physician monitoring. The study will be limited to patients with only Medicaid to prevent variations in reimbursement by insurance carrier. Any patient encounter that occurs in "walk in clinic" for an acute indication, pre-operative assessment clinic, or other specialty clinic will be excluded from the study.

#### **H. Recruitment of Subjects**

All internal medicine residents in the AIM clinic will be asked to participate. The resident physicians in the intervention group will be required to attend the medical billing seminar in lieu of a clinic session.

#### **I. Confidentiality of Study Data**

Residents in the intervention group will be asked to sign an agreement that they will not disclose the information learned in the billing seminar with the residents in the control group. Those who work in the AIM clinic billing department and who calculate the reimbursements will be blinded to which residents have been exposed to the billing seminar. Those investigators reviewing the reimbursement information will be asked not to share this information with the medical residents.

#### **J. Potential Conflict of Interest**

It is in the interest of the AIM practice to increase reimbursement for the betterment of their facilities. Since resident physicians are not reimbursed per patient visit, and their salary is not dependent on reimbursement to the clinic, they will have no conflict of interest.

**K. Location of Study**

The study will occur at the AIM practice on the second floor of the Vanderbilt clinic of Columbia University Medical Center.

**L. Potential Risks**

There are no potential risks to either the resident or patient in this study.

**M. Potential Benefits**

If medical billing is found to increase reimbursement, there may be a potential benefit in that the additional revenue may be used for the betterment of the AIM practice and hence allow for better facilities for the patients.

**N. Compensation to the Subjects**

The resident physicians will not be compensated for their participation in this study.

**O. Costs to Subjects**

There will be no financial costs to the subjects.