General workflow procedures within medical practice require the designation of disease with standardized coding which is then submitted as part of authorization requests for medical treatment. Coding is specified by the International Classification of Diseases, Ninth Edition (ICD-9). Within Radiation Oncology at UCSF, these entries are largely generated by residents, who do not receive formal training in ICD-9 coding. Accurate TNM staging is critical for appropriate management. Deficient coding can lead to delays in treatment and/or reimbursement for necessary radiation procedures.

The overall departmental baseline ICD-9 coding accuracy in 2010 was 82%, with lowest accuracy within head and neck (78%) and CNS (76%) subsites. We sought to achieve an ICD-9 and TNM coding accuracy of 90% or greater for the 2012-2013 academic year.

The MOSAIQ electronic health record (EHR) system (Elekta) was recently implemented within the department, and contains ICD-9 and TNM coding-assistance features, shown in Figure 1. Residents participated in a formal orientation with coding software features. Subsequent ICD-9 and TNM coding accuracy, was assessed by monthly chart review of a random sample of 20 patients undergoing radiotherapy.

Results / Progress to Date

- As shown in Figure 2, ICD-9 accuracy has been greater than 90% over the year, whereas TNM accuracy improved after orientation of coding features during the first quarter.

- Coding has been consistent across all anatomic subsites and with all radiation modalities (external beam and brachytherapy)

Moving Forward

Our experience supports the implementation of modern electronic health record (EHR) systems towards reducing errors and enhancing resident education by integrating references, including streamlined searchable coding databases, accessible within the patient documentation interface. We expect this system will greatly facilitate the upcoming transition to the ICD 10th edition in 2014, which will have greater complexity and specificity in disease coding. Moreover, coding accuracy will be paramount with evolution of pay-for-performance health care policy.