

Developing a Medical Coding Curriculum for Surgery Students by Resolving Inconsistencies among Physician and Student Records

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Abstract

Proficiency in Medical Code (MC) is essential for operation. The research posited that primary surgery students possess insufficient trust in the MC and that introducing targeted didactics will enhance student trust and understanding. A medical curriculum was presented to significant surgery students encompassing the Global Procedure Phase (GPP), assessment and administration code, and Hospital Payments and Quality Measures (HPQM). A 20-item survey was created to evaluate student proficiency in coding skills. The effectiveness of the MC program was assessed by anonymized documentation-based Pre-assessment and Post-assessment questionnaires. Pre-assessment results ($n = 60$) indicated that students experienced discomfort with MC. After three MC classes, the post-assessment ($n = 25$) revealed substantial enhancements in student familiarity with MC ($p < 0.002$) and student achievement in the areas of GPP ($p = 0.017$), assessment and administration code ($p < 0.002$), and HQPM ($p = 0.030$). Families are apprehensive about the MC lacking proper schooling. This research advocates for a targeted curriculum to equip students for professional activity.

Keywords: Medical Coding, Surgery, Physician, Student Records.

1 INTRODUCTION

Precise medical documentation is essential in medical school and fundamental to practical surgery (Maier-Hein et al., 2022). Experienced medical coders utilize written material to determine a Current Procedural Taxonomy (CPT) Examination and Management (EM) code for all patient visits (Frank et al., 2022). The recording is utilized to identify a patient's condition, employing the International Classification of Diseases, 10th Revision (ICD-10) (Burkholder et al., 2022). The codes are established based on variables recorded in the individual's history, physical evaluation, and medicinal decision-making. The efficacy and coordination of care delivery and federal and private compensation for services rendered depend on the codes assigned to an interaction. Inaccurately categorized documents can lead to revenue loss and adversely impact care provision.

Proficiency in Medical Coding (MC) is essential for a successful future as a surgical professional, irrespective of whether one pursues a professorial, hospital-employed, or independent practice career

(Cigarroa et al., 2023). Prior research across other specialties has revealed no MC and billing teaching within student training programs. Insufficient knowledge of healthcare coding inadequately equips students for future freelance work, resulting in erroneous coding. The deficiency of MC expertise is widespread among general surgical instructors, constraining students' opportunities to acquire MC skills from professors during routine clinical rotations.

Program administrators in generic surgery schools acknowledge the necessity for specialized training, with 85.2% highly endorsing that students should get instruction in business and practice administration. Many program administrators encounter difficulties integrating MC and other elements of systems-based management into their educational material (Gharibi et al., 2023). However, systems-based management is a core skill mandated by the Accreditation Committee of Graduate Medicine Education (ACGME) for graduates.

In light of these results, the research asserts the necessity of implementing a systematic medical billing and recording curriculum. At the time of this investigation, the General Surgery students at the hospital had not received any formal education in coding or medical recording. This research aimed to examine general surgery students' comfort and comprehension of the MC and measure the enhancement of these factors following training interventions (Gabrysz-Forget et al., 2021). The study posited that general surgical students exhibit discomfort with MC and that implementing targeted instructions will enhance student assurance and augment understanding of MC across various areas.

2 METHODS

The research received Institutional Review Board approval. The broad surgery inhabitants and instructors created a medical billing syllabus and an associated 20-question unidentified survey with the hospital's Division of Surgery Revenue Cycle Supervisor and the Clinical Documenting Enhancement project coordinator (Weber et al., 2022). The objective was to address fundamental principles of office- and hospital-based code while emphasizing frequent errors students commit in daily recording within ambulatory and inpatient environments.

The coding program comprised three 50-minute interactive PowerPoint classes, accompanied by multiple-choice, short-response, and open-ended inquiries, delivered during 80-minute sessions over the designated educational period of 6 months. A PowerPoint lecture style was selected owing to the substantial group dimensions (75 categorized general surgical students and unspecified preparatory surgery students) and the teacher-to-learner ratio for the training sessions. The initial workshop was on EM coding, facilitated by the Income Cycle Administrator of the Department of Surgical Sciences, a Chartered Personal Coder (CPC). The subsequent session concentrated on Hospital-Based Transcription and was conducted by the Medical Coordinator of the Medical Transcription Enhancement Project. The third period, which summarized the key themes from the preceding two lectures and presented the Global Procedural Phase (GPP), was conducted by two experienced surgical students trained at the Academy of Surgery Code and Billings course (Carvalho, 2023). Courses were

enhanced with laminating reference boards for EM grading standards and prevalent surgical problems and co-morbidities. Owing to temporal and staffing limitations within the annual student instruction, procedure-based grading was not covered and functioned as the baseline for the questionnaire.

The questionnaire comprised five Likert-scale inquiries gauging student ease with medical records and seventeen multiple-choice inquiries covering the MC fields, including GPP, EM, Procedural Records (PR), and Healthcare Payments and Quality Metrics (HPQM). A confidential questionnaire was provided in paper format to a random group of general surgical students during designated instructional time in November 2022. The characteristics comprised solely the medical levels. After the three-session MC instruction, the same survey was conducted as a post-assessment in paper format roughly seven months afterward, in May 2023, a few days after the final educational event. The anonymized character of the surveys precluded the tracking of workshop attendance.

Information was inputted and preserved in a password-protected computer using an Excel spreadsheet. The collected data before and after the treatment was analyzed using either a Mann-Whitney or chi-square assessment. The alpha significance threshold was established at < 0.05 . A subgroup study was conducted to compare the performance of junior students (years 1 to 2) with senior students (years 3 to 5).

3 RESULTS

Fifty out of seventy-seven surgical general students answered the Pre-assessment questionnaire. Thirty junior students (ear 1 to 2), seventeen senior students (years 3 to 5), and three individuals who weren't sure of their level participated in the questionnaire. In a 5-point Likert scale poll, students indicated that MC expertise is significant during training and deemed essential in private practice (Figure 1).

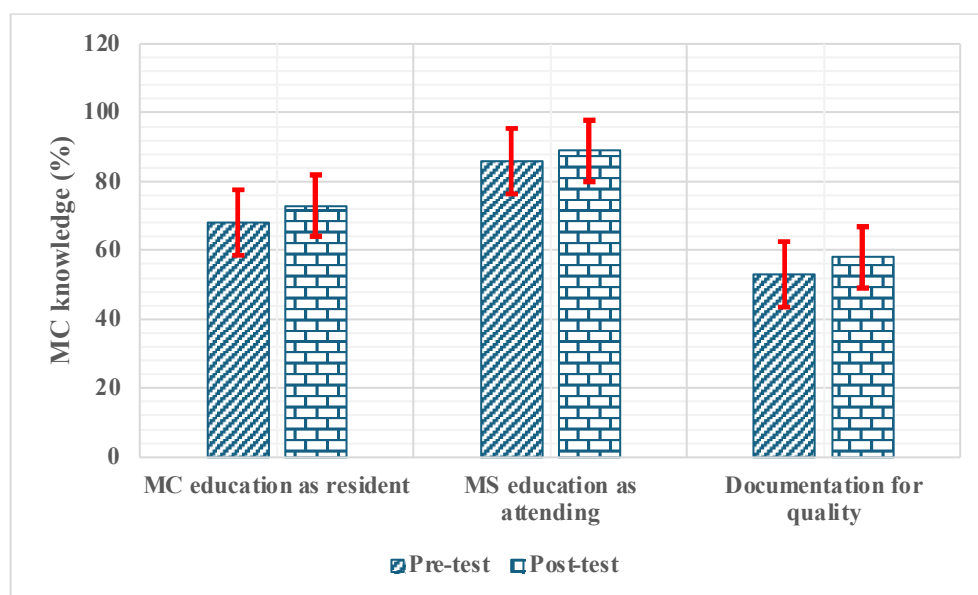


Figure 1: Student MC Knowledge Analysis

Students expressed significant discomfort with the medical billing procedure and their capacity to enhance documenting for quality metrics (Figure 2). Students' achievement on 16 multiple-choice exams spanning all four coding categories was subpar. The mean proportion of precise answers was 34.2% for GPP, 61.5% for EM, 67.2% for PC, and 53.7% for HPQM subdomains.

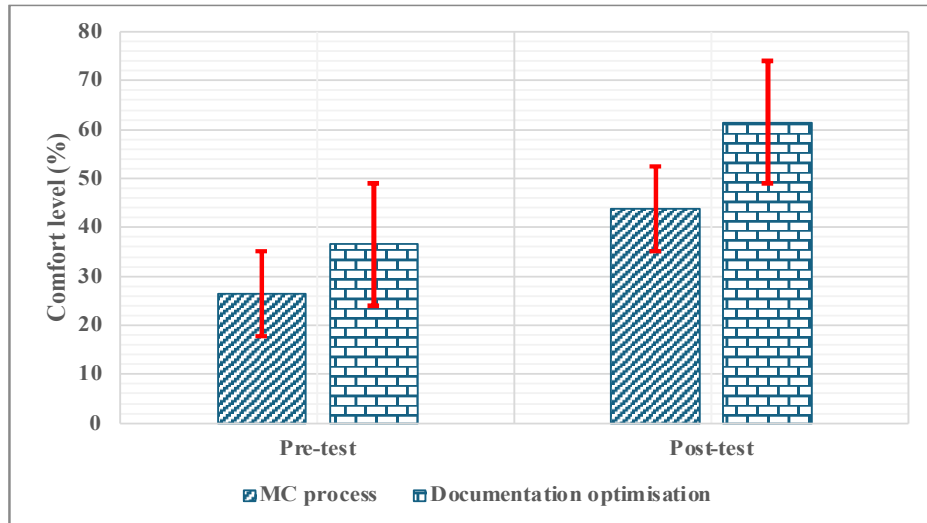


Figure 2: Student Comfort Analysis

The subgroup examination revealed no statistically noteworthy variations among junior and older students regarding any 5-point Likert scale questions related to student values and familiarity with MC. The results of junior and senior students were comparable on the 15 multiple-choice problems about the MC areas of GPP, EM, PR, and HPQM. After three 50-minute concentrated instructional sessions on medical billing, 25 general surgical patients, comprising 12 younger and 15 elderly patients, performed the Post-assessment.

Respondents indicated comparable student perspectives on the significance of MC proficiency during residency and operation. The Post-assessment replies indicated a notable enhancement in residency comfort regarding the MC procedure ($p < 0.002$) and documentation to enhance quality measures ($p = 0.005$).

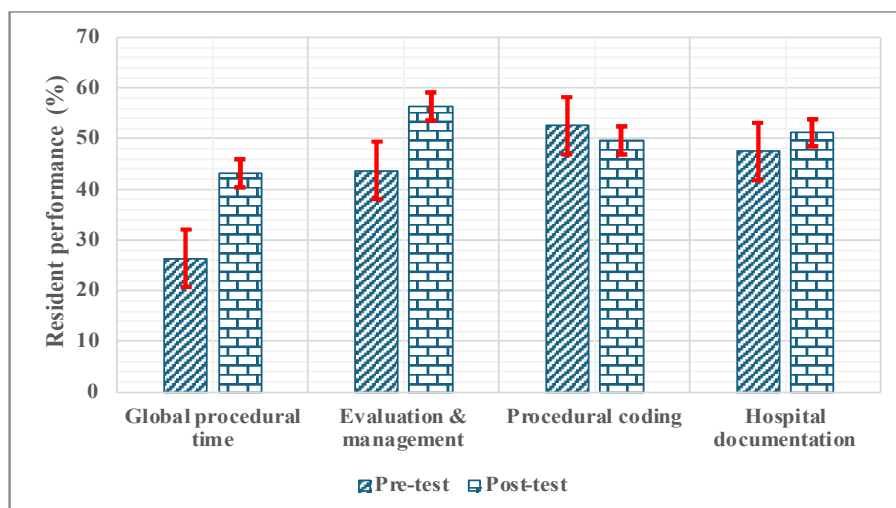


Figure 3: Student Performance Analysis

Compared to the Pre-assessment, there was a decline in student efficiency on the 16 multiple-choice inquiries in areas of GPP ($p = 0.015$), EM ($p < 0.002$), and HPQM ($p = 0.025$). The students' effectiveness in the operational coding areas on the Post-assessment was comparable to the Pre-assessment ($P = 0.58$). (Figure 3). Sub-group research revealed no substantial variations in poll responses about comfort or the proportion of accurate answers to multiple-choice items between younger and older students on the Post-assessment.

In 85 comprehensive trips, the ICD-10 code designated for student documenting corresponded with the ICD-10 code given to faculty documenting in merely 31% of instances. It presents cases exemplary of the ICD-10 codes assigned to professor and student reporting for identical patient interactions, illustrating that student reporting exhibited less specificity generally.

Conditional logistic regression revealed that malignancies are an essential indicator of discordance among pupil and teacher documentation. In assessments of patients with benign conditions, 42% of documentation by students and professors received identical ICD-10 diagnosis codes. In assessments concerning malignancy, hardly 24% of the data from students and staff reflected a consistent evaluation. Neither the final-year nor the third-year medical students substantially predicted the absence of congruence between instructor and pupil reporting.

Compared to faculty evidence, pupil documentation was more likely to be assigned secondary (32.5% versus 18.4%) and tertiary (16.2% against 3%) ICD-10 assessments. Pupil evidence was more frequently assigned an ICD-10 code belonging to the "other" group than faculty material (18.3% vs. 6.3%) (Figure 4).

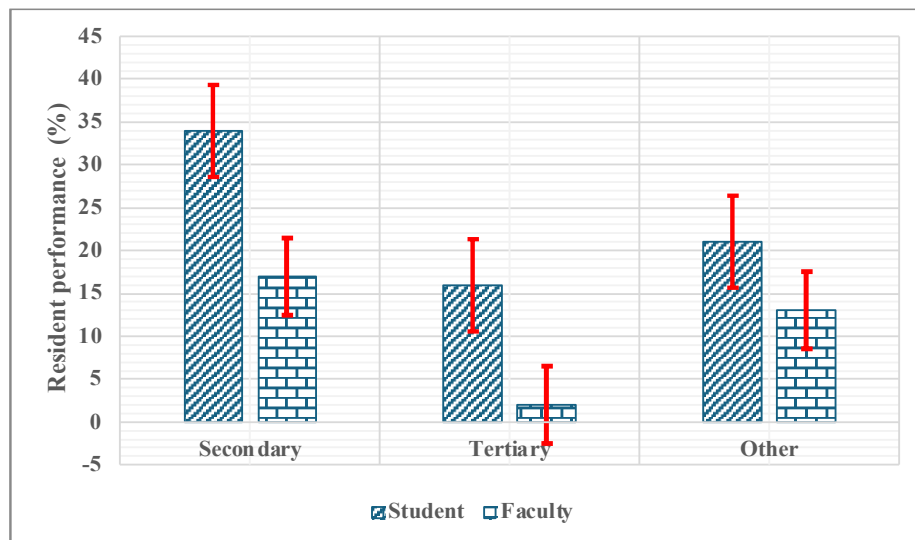


Figure 4: Student Documentation Analysis

4 CONCLUSION

The present research reveals students are discomfort with MC without formal schooling. This study demonstrates the effectiveness of a targeted program in enhancing students' comfort and understanding of MC across several areas. The school has implemented supplementary MC education for students and

professors at the academic and organizational levels. There is a necessity for the uniformity of practice administration curricula to rectify shortcomings in students' understanding regarding MC and billing, along with other areas like negotiating contracts, accounting, and reimbursements. Formal instruction in practice administration encompassing MC will better equip students for future autonomous practice.

The study's shortcomings encompass its single-institution approach. Students' comfort level and knowledge of the MC vary between organizations. The analysis reveals data on student comfort levels consistent with prior published research. A further constraint of the present investigation is sampling biases. The anonymity of the questionnaire precluded identifying students who finished the pre- and post-assessments. Likewise, it was impossible to ascertain if the students who completed the post-assessment had participated in the three MC classes. These biases would diminish the likelihood of observing distinctions between pre- and post-assessment questionnaires. It could be that the impact of the educational program was more than determined by the procedures in the present investigation.

In subsequent research, the research aims to demonstrate the efficacy of MC curricula by assessing the service's proficiency quality and catch rate before and after the educational program. Enhancing students' documentation substantiates the educational time allocated for the MC program during residence. It increases organizational financial backing and assets for executing such a program.

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