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Development and Evaluation of Students' Skills Critiquing Clinical Documentation

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Key Words: SOAP, documentation, teaching laboratory

Abstract

Objectives: *The main objective is to evaluate students' ability to critique simulated clinical documentation containing intentional errors. Exploratory objectives include comparing student performance on two note critique activities and comparing performance of two consecutive student cohorts.* ***Methods:*** *Students are introduced to the skills of clinical documentation in the second professional year. To uniquely develop students' ability to identify challenges that may be present with notes in their future practice, students were taught specific skills in critiquing documentation, with an emphasis on the errors and omissions commonly seen in different sections of the note based on the previous literature. Students were assessed on their ability to correctly critique two notes containing intentional errors in two teaching laboratory courses.* ***Results:*** *A total of 159 students completed two note critique activities, identifying 87.0% of intentional errors built into both activities. On the individual note components, students identified 97.9%, 73.0%, 78.8%, and 95.5% of the intentional errors in the subjective, objective, assessment, and plan (SOAP) sections, respectively.* ***Conclusion:*** *Students perform fairly well when identifying errors in poorly written SOAP notes. They seem to struggle most with identifying intentional errors in the objective and assessment sections. Future instructional efforts will target improving students' abilities critiquing these sections.*

Introduction

Pharmacists are expected to provide high-quality and effective health care, and documentation is a key component of this care. Documentation should be done in a systematic matter in order to produce a complete, consistent, and organized note. Furthermore, proper documentation helps demonstrate the evidence of the pharmacists' contributions to patient care.[1]

Pharmacy education includes the expectation of training students in the skills of documentation, as evidenced in Standards 2016 from the Accreditation Council for Pharmacy Education (ACPE) and the Educational Outcomes 2013 from the Center for the Advancement of Pharmacy Education (CAPE).[2,3] Key Element 11.1 of Standards 2016 describes the need for students to learn effective interprofessional communication, including documentation. Key Element 3.6 of Standard 3 outlines the expectation that students learn to effectively communicate nonverbally, including documentation. Furthermore, the Educational Outcomes 2013 provides Example Learning Outcome 3.6.9, which states that students should be able to "Document patient care activities clearly, concisely, and accurately using appropriate medical terminology."[3]

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Documentation skills fall into two broad categories: 1) writing one's own documentation and 2) reading and interpreting other providers' documentation. The pharmacy education literature provides many examples of assessments of students' ability to write documentation.[4,5,6,7,8] This literature has demonstrated that while learning to write documentation is challenging and takes both repetition and experience, as students develop skills and become more comfortable writing clinical notes, the quality of their notes improve and they make less errors or omissions in their notes.[4,5,6,7,8] Student perception of their skill development is also consistent with this finding. When students were given an opportunity to write SOAP notes for complex patient cases in a capstone course, 80.5% of students stated that this opportunity improved their clinical writing skills.[7] Peer evaluation of clinical notes has also been demonstrated to lead to improvement of SOAP note writing skills.[8]

In contrast to the amount of literature that has described students' development in writing clinical notes, very little literature exists examining students' development of reading, interpreting or critiquing other providers' clinical notes. Certainly this skill is equally important, as efforts in collaborative care rely in part on effective use of the health care team's documentation. Providers need to be able to recognize that a note is poorly written because it is missing required elements or seems to include inaccurate or incomplete information. In the current literature, it is unclear to what extent the profession engages students in this skill development. An article by Planas and Er describes an activity during which students critiqued a simulated provider note and provided recommendations for improvement.[9] However, this

activity was not the sole focus in the manuscript and no results for this specific activity were reported. Consequently, the Applied Patient Care teaching laboratory course series at the Concordia University Wisconsin School of Pharmacy undertook the development of such learning activities. The main objective was to evaluate students' ability to critique simulated clinical documentation containing intentional errors, including descriptions of the components of the note students do well identifying and components where they struggle. Exploratory objectives included comparing performance on the two sequentially graded critique activities and comparing performance of two cohorts of students who completed the activities in two consecutive years.

Methods

The Applied Patient Care (APC) course series at Concordia University Wisconsin School of Pharmacy is a 6-semester sequence, each subsequent course building on knowledge from the previous semesters. During APC III and APC IV, in the second professional year, students learn how to practice as part of the health care team, focusing on assessing and caring for patients returning for follow-up visits with additional practice with plan development, delivery, and patient education. Students also learn how to perform case-related physical assessments, how to best communicate with other health care providers, how to write clinical (SOAP) notes, and, with the initiative described in this manuscript, how to critique others' clinical notes.

To develop their baseline knowledge of clinical notes in APC III, students were introduced to clinical notes in a lecture that focused on the SOAP note format and described the expectations for each of the four components (subjective, objective, assessment and plan). The lecture included a review of a well-written SOAP note example that included all required elements and a review of the rubric used to evaluate students' future SOAP note submissions (Appendix A). (This rubric was adapted from previously published work.[5,6]) For subsequent writing activities, students were evaluated on the appropriate structure of their notes and their ability to ensure all parts of a note are present and in the right place. Evaluation of the students' clinical decisions as part of SOAP documentation begins in the third year as part of the remaining APC course series and the Pharmacotherapy series.

Students participated in five documentation writing activities in APC III and IV. There were four pharmaceutical care follow-up encounters for which students worked in pairs to write SOAP progress notes, incorporating chronic kidney disease, hyperlipidemia, hypertension and diabetes. There was also one lab where students developed and wrote the assessment and plan after being provided the subjective and objective section for a simulated encounter with a patient with chronic kidney disease, hyperlipidemia and hypertension.

Critique Activities

Table 1 provides a summary of the SOAP critique activities in APC III and APC IV, including the objectives, basic design, timing, and grading structure. Students' first experience actually critiquing SOAP notes themselves was in the first lab activity, the Documentation Basics lab. During this lab students critiqued two intentionally poorly written notes using the electronic SOAP Progress Note Rubric (Appendix A) and then compared them to the corresponding well-written notes that included all required elements and accurate information. Poorly written notes had structural errors, such as missing elements (e.g., missing social history, allergies, etc.), misplaced elements within the subjective, objective, assessment, or plan portions of the note or inaccurate/inconsistent information based on the rest of the note. No literature was identified to aid in classifying SOAP note critiquing errors. Therefore, the error types included in the simulated provider notes were selected based on previous scholarship and published literature on the areas common associated with challenges when students *write* clinical documentation.[5,6] Students' notes often contained more errors in the assessment and plan sections, therefore there were more errors to find in those same sections in the SOAP note critique activities. Later in this same lab, students wrote a SOAP note documenting a simulated patient encounter and then evaluated a peer's SOAP note. In addition to providing students opportunities to practice critiquing SOAP notes, this activity allowed the students to use the rubric and be familiar with expectations for future documentation activities.

Additional activities to increase exposure to critiquing notes occurred during the process of writing a note with a partner, as partners had to hold each other accountable for writing a complete and accurate note together and would evaluate their note for completeness and accuracy. In recognition for the need for additional practice with critiquing SOAP notes, students in the 2013-14 cohort participated in an additional SOAP note critique activity during a separate lecture period in APC III.

The APC III Objective Structured Clinical Examination (OSCE) at the end of the fall semester consisted of four stations. One of the stations assessed the students' ability to critique a simulated provider SOAP note to identify the errors and omissions, as they did formally in the Documentation Basics lab and informally in working with their peers evaluating each other's writing. This OSCE critique activity is referred to as "APC III graded critique activity" for the remainder of the manuscript.

The simulated provider SOAP note for the APC III graded critique activity consisted of six different intentional errors or omissions, including one each in the subjective and objective sections, and two each in the assessment and plan sections.

This number was thought to be reasonable to identify in the eight minute time limit. For the purposes of the OSCE, there were two different simulated provider notes used to provide variety among the different student groups. This was done in an effort to reduce the potential consequence of students being familiar with the activity from peers who had already completed it. In the 2012-13 note, there was only one difference. In the 2013-14 note, more differences were created to further differentiate the two notes. Table 2 outlines the different errors included on the two notes in each of the two years.

The Documentation Review lab, held early in the spring semester in APC IV, incorporated two more SOAP note critique activities. One of these was completed individually and discussed in class and the second one was completed individually without discussion. The latter critique was graded. The second critique activity will be referred to as "APC IV graded critique activity" for the remainder of the manuscript. The simulated provider SOAP note for the APC IV graded critique activity consisted of nine intentional errors or omissions, including two each in the subjective, objective and assessment sections and three in the plan section. Students had 15 minutes to complete the note critique so the number of errors was increased compared to the APC III graded critique activity. The same errors and omissions existed in the note for both the 2012-13 and 2013-14 cohorts.

Evaluation of Students' Critique Activities

Students received grades for the APC III and APC IV graded critique activities. This manuscript reports the analysis of student performance on these two activities for the academic years 2012-2013 and 2013-2014.

The Student Critique of Simulated SOAP Progress Note rubric (Appendix B) was used by instructors to evaluate whether the students identified the correct intentionally wrong/omitted information (e.g., they checked the correct box on the rubric indicating the error). The Student Critique of Simulated SOAP Progress Note rubric was patterned off of the SOAP Progress Note rubric, but rather than listing the expected elements and the appropriate ratings for any errors or omissions, it provided the rating expectations for when these intentional errors or omissions were missed by the students' when critiquing the notes. It also provided rating expectations for when students erroneously identified omissions or errors that did not actually exist. As with the SOAP Progress Note rubric, ratings for each component include Needs Significant Improvement, Needs Improvement and Acceptable and are based on the severity of the error made by the student.

For both activities, an overall rating was given based on students' performance and ability to correctly identify the errors or omissions on each component of the SOAP Note Critique rubric. The overall rating took into consideration the ratings earned on each component, which were given based on specific errors a student made in that component, if any. Graders were instructed in use of the rubric to evaluate the students' critique of the poorly written note. The rubric ensured objectivity, as the grader determined whether the student checked the correct checkmark or not. Students were able to view their performance on the APC III critique activity in the rubric system following the completion and instructor review of the OSCE activity. The rubric evaluation for the APC IV critique activity was emailed to students immediately upon the grader's submission.

Data Analysis of Student Performance

The results of the two graded activities for both academic years were analyzed using IBM SPSS Statistics Version 22 (Armonk, NY 2013). Descriptive statistics were used to summarize the students' ability to critique the notes including: 1) proportions of all intentional errors students correctly identified, 2) proportions of intentional errors students correctly identified by note section, 3) the proportion of students who successfully found all intentional errors, 4) the proportion of intentional errors correctly identified for each course (APC III and APC IV), and 5) the commonly missed intentional errors. Exploratory analyses included: 1) proportion of students correctly identifying all intentional errors on the note used for the APC IV critique activity relative to the APC III critique activity and 2) annual cohort differences in the mean number of intentional errors correctly identified. These data were analyzed with McNemar and t-test, respectively. Exemption from full review was granted by Concordia University Wisconsin Institutional Review Board.

Results

There were 78 students who completed both graded activities in academic year 2012-13 and 81 students who completed both graded activities in 2013-14, for a total of 159 students over the course of two years. There were six intentional errors to find on the APC III note and nine intentional errors for students to find on the APC IV note for a total of 15 errors for each student to find during their critiques, or a total of 2385 total errors. In total, the 159 students found 2075 (87.0%) of the 2385 intentional errors. Comparing the APC III and IV critique activities, student performance was similar on both notes, with 847 (88.8%) of the 954 intentional errors identified on the APC III graded critique activity and 1228 (85.8%) of the 1431 intentional errors identified on the APC IV graded critique activity.

On the individual note components, students correctly found 97.9% of the 477 intentional errors in the subjective section, 73.0% of 477 errors in the objective section, 78.8% of 636 errors in the assessment section, and 95.5% of 795 errors in the plan section (Figure 1). Student performance by

intentional error type is shown in Figure 2. Overall, students performed well, identifying more than 90% of the intentional errors for eight of the 13 error types, including finding all the intentional errors for three of the error types. The objective and assessment sections demonstrated the largest challenge to the students. Students struggled most with identifying intentional errors related to: 1) missing laboratory information when applicable (objective section) and 2) missing rationale for plan to address drug therapy problem(s) (assessment section). These two intentional errors alone accounted for 189 (61.0%) of the 310 total intentional errors missed by students. Students also erroneously found issues when in fact no error was present, the most common of which are shown in Figure 3. There were a total of 235 erroneously identified issues (almost 10% more than the intentional 2385 errors), with a reasonably even dispersion across the subjective, objective, assessment, and plan sections, each having 56, 64, 59, and 66 respectively.

Fewer than half of the students were able to find all the intentional errors on either the note used for the APC III graded critique activity or the note used for the APC IV graded critique activity. On the APC III graded critique, 77 students (48.4%) found all six intentional errors, 61 missed one intentional error, 17 missed two, and four missed three intentional errors. On the APC IV graded critique, 38 students (23.9%) found all nine intentional errors, 57 missed one, 47 missed two intentional errors, 16 missed three, and one student missed four intentional errors. The proportion of students finding all the intentional errors on the APC III graded critique versus the APC IV graded critique was statistically significant ($p < 0.001$ McNemar).

The students completing the activities in the 2013-2014 academic year performed better than the previous year's class. The APC III note identified intentional error mean was 5.48 versus 5.17 out of six possible for the 2013-2014 (second) and 2012-2013 (first) cohorts respectfully ($p=0.009$). Similarly on the APC IV note, the second cohort did better with an identified intentional error mean of 8.00 out of nine possible versus 7.43 ($p< 0.001$). In the second cohort, 47 (58.5%) identified all intentional errors on the APC III note compared to 30 (38.5%) from the first cohort ($p = 0.014$). In the second cohort, 28 (34.6%) identified all intentional errors on the APC IV note compared to 10 (12.8%) from the first cohort ($p = 0.001$).

Discussion

Completing these two graded activities demonstrated that students do quite well overall when critiquing simulated providers' SOAP notes, but tend to be challenged in a few specific areas of the critique, specifically identifying whether laboratory information, the rationale for the plan, and the assessment of whether goals are met. It is important that students are able to recognize a poorly-written note that is missing pertinent information. If a note is missing information that supports the plan, it is difficult to trust that the plan provided is the best option. The note should include subjective and/or objective information, such as laboratory information, to describe the problem that indicates a change in the patient's medical therapy is necessary. The patients' health care goals and their assessment of whether they're being met should be included. The reader of the note will be able to determine the reason the provider made a change or recommendation, when their rationale is included in the assessment section. These three items are imperative to include as they provide the support for the plan. If missing, it requires the inefficient task of searching further into the patient's chart to find the pertinent information to support the plan and to therefore feel comfortable carrying it out.

The three challenges noted above are consistent with pharmacy students' challenges when writing SOAP notes as reported in the literature including: (1) significant data omitted necessary for the assessment and plan (including laboratory information), (2) does not include any discussion of therapeutic options or rationale of eventual diagnosis or plan, and (3) identification of the problem(s) is missing or incomplete.[5,6] This is not isolated to pharmacy, as these three challenges parallel medical students' struggles as described in the literature, including documenting correct and complete physical examination findings[11,12] and providing rationale for differential and final diagnoses.[13]

These three challenging areas in critiquing and their parallel challenges in writing documentation are noteworthy for two reasons. First, documentation includes at least two steps, including 1) understanding or recognizing what should be included and then 2) actually writing it effectively. Considering this manuscript's and previous works' findings together suggest that future instructional efforts need to more strongly target students' understanding and recognition of quality documentation before the quality of students' written work, be it critiquing or writing, can be maximized. Second, the three items students struggle with the most also require some clinical knowledge, although students' clinical knowledge is not a focus of these critiques. This may be seen as a limitation to this project which is focused on identification of structural issues. As an example, a student would need some clinical knowledge to realize that specific laboratory information should be provided in the objective section, if an assessment section is discussing whether a goal that is based on laboratory information is met or not. The same applies to making the assessment of whether goals are met, especially if it is not a simple comparison of numerical goals versus patient's laboratory information or vitals. This may be further complicated by conditions without quantitative goals. With that said, about two-thirds of students successfully identified when laboratory information was missing

and three-quarters of students were successful in identifying when a note did not state whether a patient's goals are being met, as demonstrated in Figure 2.

When general performance on the APC III and APC IV graded critiques were compared, there was not a significant overall difference between intentional errors found compared to possible number of intentional errors. About 49.4% more students found all the intentional errors on APC III note compared to the APC IV note which may be explained by the fact that there were 50% more errors on the APC IV note (six vs. nine, respectively). It was not expected that students' performance would be markedly different. The activities occurred an average of eight weeks apart: before Thanksgiving and middle of January. There wasn't additional instruction between the two activities, but students could reflect on their feedback on the APC III graded critique activity and strive for improvement on the next activity.

As noted above, students completing the activities in the 2013-2014 academic year did better on the SOAP note critique activities than the previous year's class. This wasn't an expected result but may be due to the fact that there was an additional opportunity during a lecture period for SOAP note critique practice. Instructors' previous experience may enhance instruction, which may play a part in improving student performance. Additionally, these two SOAP note critique activities did not include all possible errors in the note, so it is not possible to determine whether a student can correctly identify the potential errors that were not included. Previous literature suggests that the most common errors were included in the critiques, minimizing but not eliminating the potential impact of this on the findings.[5,6] It is important to recognize that while students may miss the problems discussed above, the problems vary in severity. For example, it may be more detrimental, or potentially harmful, to miss including pertinent laboratory information or whether the patient is meeting their goals than is it is to omit the rationale. If the former two problems are missing, students were given a Needs Significant Improvement (NSI) rating, whereas if they miss including the rationale, it is a Needs Improvement (NI) rating. The same applied to critiquing a note. Ultimately, student skill in both documentation and critiquing notes has implications for practice, and the variance in types of problems means there would be variance in the potential practice outcome. In some instances, in fact, the outcome may still be acceptable in practice.

Implications and Future Direction

The focus of this project was the development of students' ability to critique clinical documentation, but it opens up a more general opportunity for scholarly inquiry – what is the role of and opportunity for students' critiquing simulated provider work products, be they live, recorded, static, or dynamic, in the process of developing and mastering the skills necessary to be a pharmacist? Both the CAPE outcomes and the accreditation standards put an appropriately substantial emphasis on skills development in both didactic and experiential learning environments.[2,3] They also emphasize self- and peer- evaluation as an educational and assessment tool. Yet, this concept of developing simulated provider products with known deficiencies potentially provides a unique educational niche in student development, that being an increase in error-intentionality and error-control relative to self- and peer- reviews. Neither are optimal and both may well demonstrate to have their place, but to be sure they meet different educational goals.

The goal of development of critiquing skills was not and should not be aimed at typecasting the pharmacist as the "critiquing member" of the health care team. The skill is not valuable if it is put to use solely to point out flaws that the literature describes are most likely to exist.[5,6,10,11,12] On the contrary, development of the skill in a broader curricular application needs to include both identification of the critical challenges with a work product, be they from fellow pharmacists or other health care professionals, along with the recommendations of adapting the individual's and system's expectations to improve the care from all team members. It also requires education on the cultural concepts of teamwork, accountability and vulnerability.

This current project lends itself to three specific areas of future work. First, this work incorporated only two evaluated critiquing activities. These two activities were necessary to demonstrate a successful proof of concept. Yet, from an educational and assessment design perspective, additional activities, likely with stepped complexity, need to be developed and integrated to robustly examine the development of critiquing skills. Second, future work needs to attempt to answer whether critiquing skills improve an individual's own patient care skills. It is reasonable to hypothesize that improving students' ability to see the most common errors in a skill would result in their improved ability to maximize the correct completion of the skill and minimize the occurrence of errors. While this study was descriptive and exploratory, future scholarship opportunities will need to examine whether developing students' critiquing skills improves students' performance. Third, students' perceptions of the critiquing activities and their perceived utility in students' learning and growth needs to be explored.

Summary

Students were successful in critiquing SOAP notes that contained intentional errors although a few areas present significant challenges. The areas of including pertinent laboratory information, the patient's goals and the rationale for the plan are important for students to identify in providers'

notes as they pertain to the provider's plan for the patient. The student pharmacist needs to be able to determine whether the plan is reasonable using the information provided or whether additional information is needed. Writing and critiquing clinical documentation continues to be an important and challenging area of instruction and assessment.

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Table 1. Summary of clinical documentation critiquing activities in Applied Patient Care III and IV

Activity	Semester & Week	Learning Objectives	Educational Design	Grading
Documentation Basics Lab (APC III)	Fall Weeks 6 & 7	Read and evaluate two SOAP progress notes, determining if they include the required elements and appropriate structure.	1. Students receive a poorly written simulated provider note and evaluate it using the electronic SOAP Progress Note rubric in 5-10 minutes, working individually. 2. Students discuss findings in this note with the instructor and receive the good version of the note. 3. Students repeat steps 1-2 with a second note.	Participation in the discussion, given by instructor
SOAP Note Critique Review and Practice (APC III)	Fall 2012: N/A 2013: Week 11	1. Read and evaluate a poorly written SOAP progress note, determining if it includes the required elements and appropriate structure. 2. Correct the note by adding the missing required items.	1. Work with a partner to evaluate a poorly written note in 10-15 minutes. 2. Work as a large group to correct each section of the SOAP note to include the missing items.	There was no grade associated with this activity.
OSCE Station: SOAP Progress Note Critique (APC III)	Fall 2012: Week 14 2013: Week 15	Read and evaluate a SOAP progress note, determining if it includes the required elements and appropriate structure.	Evaluate a brief simulated provider SOAP progress note for errors and/or omissions using a paper version of the SOAP Progress Note rubric in 8 minutes.	Evaluation is graded using the electronic Student Critique of Simulated SOAP Progress Note rubric to ensure all errors and omissions were identified; graded by course coordinator
Documentation Review Lab (APC IV)	Spring 2013: Week 2 2014: Weeks 2 & 3	Read and evaluate two SOAP progress notes, determining if they include the required elements and appropriate structure.	1. Evaluate a simulated provider SOAP progress note using the electronic SOAP Progress Note rubric in 15 minutes. Discuss evaluation with instructor. 2. Evaluate another simulated provider SOAP progress note using the electronic SOAP Progress Note rubric in 15 minutes. This one is graded.	Students' evaluation of Note 2 is graded using the electronic Student Critique of Simulated SOAP Progress Note rubric to ensure all errors and omissions were identified; graded by student instructors

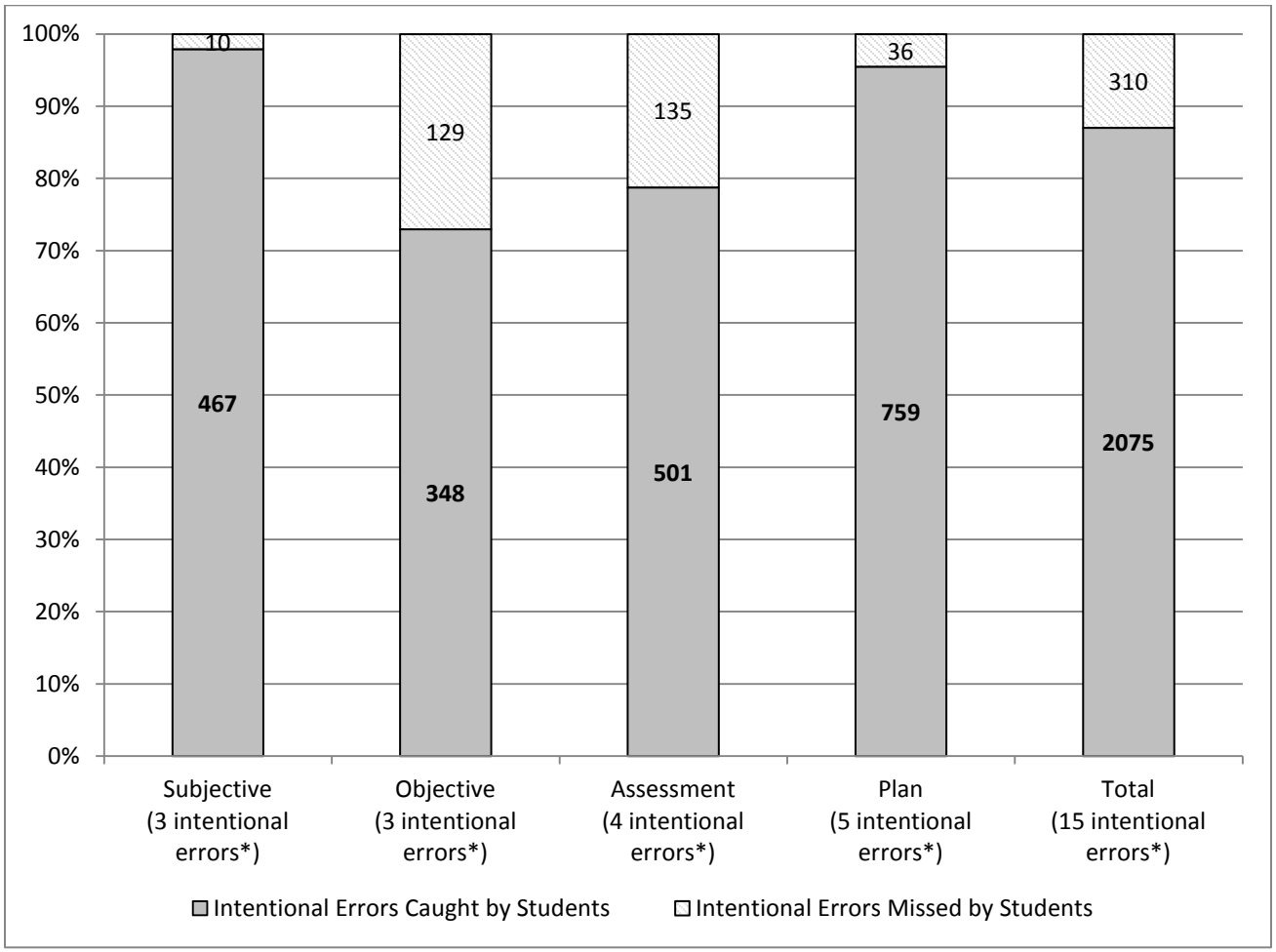
Abbreviations: APC=Applied Patient Care; SOAP=subjective, objective, assessment, plan; CKD=chronic kidney disease; HTN=hypertension; OSCE=Objective Structured Clinical Examination

Table 2: Differences of intentional errors on the 2012-13 and 2013-14 APC III SOAP Notes

	2012-13		2013-14	
	Note 1	**Note 2**	**Note 1**	**Note 2**
Subjective	Missing tobacco, alcohol, caffeine, illicit drugs	Missing allergies and/or ADR information	Missing tobacco, alcohol, caffeine, illicit drugs	Missing allergies and/or ADR information
Objective	Missing laboratory information		Missing VS or other PE information	Missing laboratory information
Assessment	-Missing goal(s) -Missing assessment of whether or not goals were met and drug therapy problem(s)		-Missing goal(s) -Missing assessment of whether or not goals were met and drug therapy problem(s)	
Plan	-Missing required elements for new/changed therapies: drug, dose, route, frequency, duration (if applicable) -Missing specifically WHAT to follow-up		-Missing required elements for new/changed therapies: drug, dose, route, frequency, duration (if applicable) -Missing specifically WHAT to follow-up	-Missing required elements for new/changed therapies: drug, dose, route, frequency, duration (if applicable) -Missing specifically WHEN to follow-up

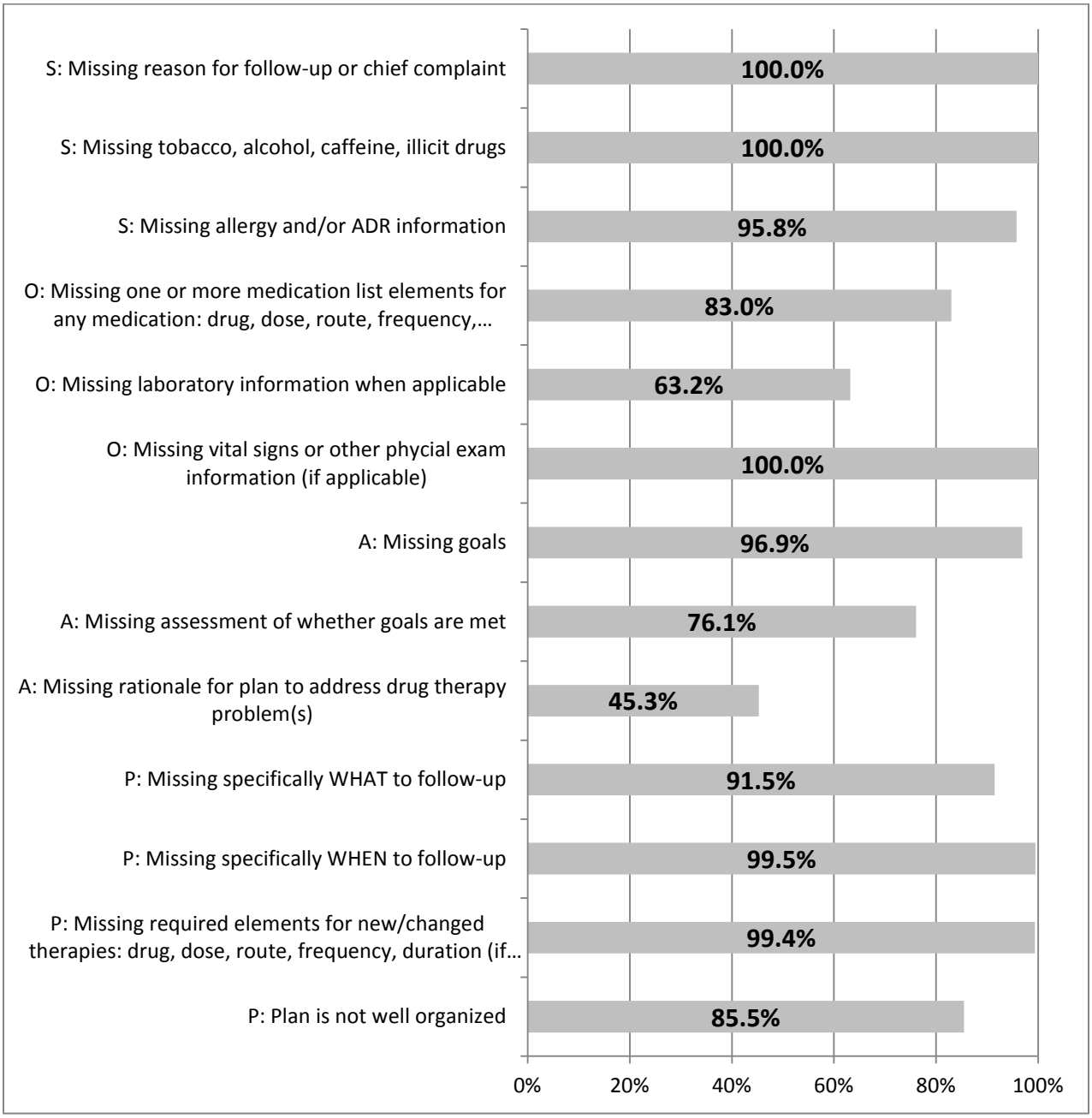
Abbreviations: OSCE=Objective Structured Clinical Examination; SOAP=subjective, objective, assessment, plan; ADR=adverse Drug reaction; VS=vital signs; PE=physical exam

Figure 1. Frequency and percent of intentional errors caught by students on SOAP Progress Note critique activities



*Number of intentional errors on the critique activities that were completed by a total of 159 students

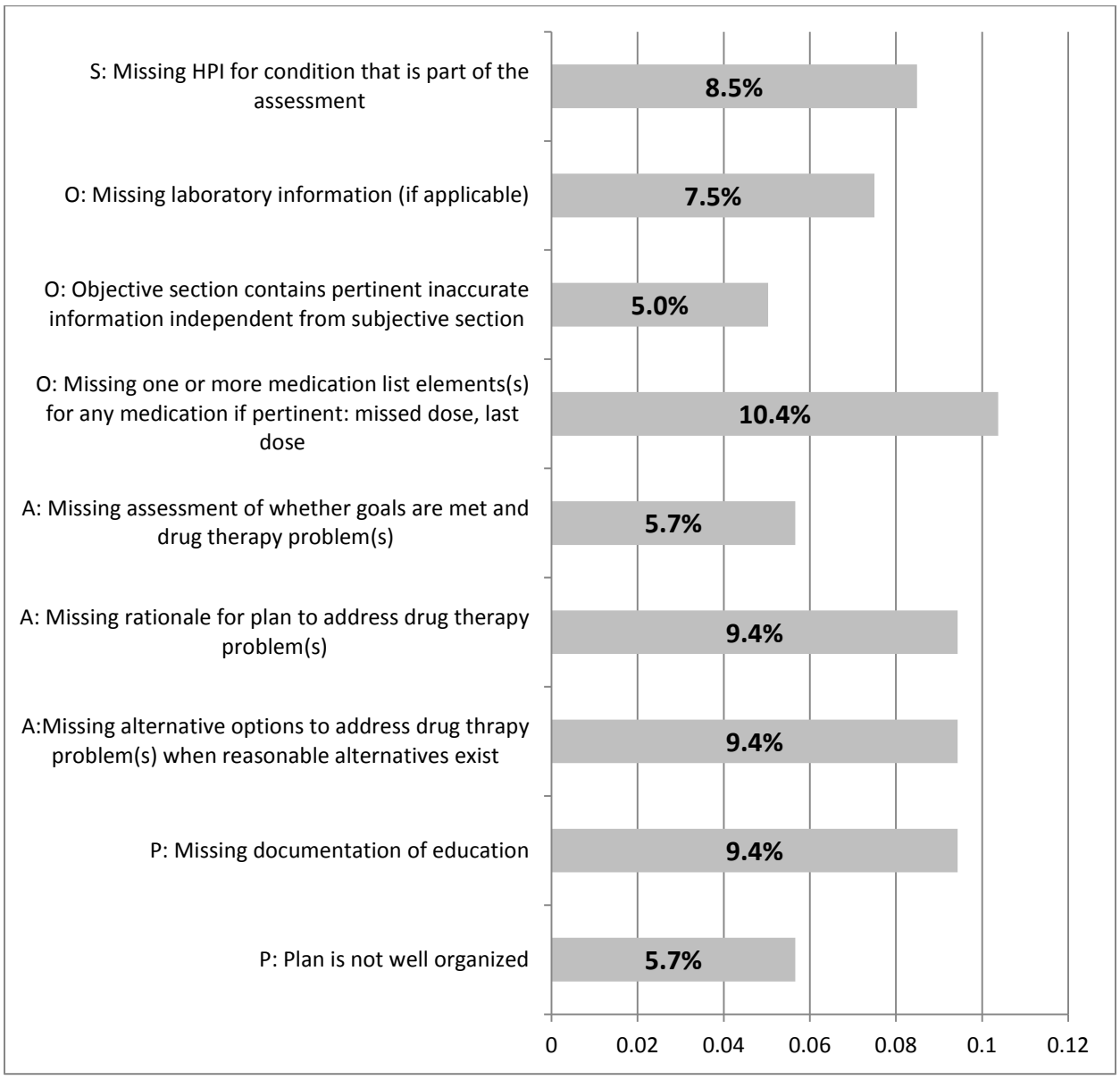
Figure 2. Percent of intentional errors found by students by type*



Abbreviations: S=subjective; O=objective; A=assessment; P=plan; ADR=adverse drug reaction

*Figure shows intentional errors *found by students*; larger percents represent better student performance.

Figure 3. Percent of errors that were erroneously identified by students by type*



Abbreviations: S=subjective; O=objective; A=assessment; P=plan; HPI=history of present illness

*Figure shows errors that were erroneously identified at least 5% of the time. Larger percents represent poorer student performance.

Appendix A: SOAP Progress Note Rubric

	Ratings and Comments		
Evaluation Component	**Needs Significant Improvement (NSI)**	**Needs Improvement (NI)**	**Acceptable**
Subjective	□ Missing Reason for Follow-up or Chief Complaint □ Missing tobacco, alcohol, caffeine, illicit drugs □ Missing allergy and/or ADR information □ Missing HPI for condition part of the PC Follow-up Assessment □ Subjective section contains pertinent inaccurate information	□ Unnecessarily redundant with rest of chart or previous note □ Subjective section brevity does not provide enough evidence for the Assessment and Plan □ Subjective is unnecessarily long	□ Subjective section is complete and well organized
Objective	□ Missing medication list □ Missing one or more medication list element(s) for any medication: drug, dose, route, frequency, indication □ Missing laboratory information (if applicable) □ Missing VS or other PE information (if applicable) □ Objective section contains pertinent inaccurate information independent from subjective section	□ Missing one or more medication list element(s) for any medication if pertinent: missed dose, last dose	□ Objective section is complete and well organized
Assessment	□ Missing goal(s) □ Missing assessment of whether goals are met and drug therapy problem(s) □ Assessment section contains pertinent inaccurate information independent from subjective and objective sections	□ Assessment not organized as prioritized in subjective section □ Assessment includes information that should appear in the subjective or objective section □ Missing alternative options to address drug therapy problem(s) when reasonable alternatives exist □ Missing rationale for plan to address drug therapy problem(s)	□ Assessment section is complete and well organized
Plan	□ Missing required elements for new/changed therapies: drug, dose, route, frequency, duration (if applicable) □ Missing discontinued therapies □ Missing specifically WHAT to follow-up □ Missing specifically WHEN to follow-up □ Plan section contains pertinent inaccurate information independent from SOA sections	□ Missing documentation of education □ Plan is not well organized	□ Plan is complete and well organized

Abbreviations: HPI=history of present illness; PC=pharmaceutical care; VS, vital signs; PE=physical exam; SOA=subjective, objective, assessment

Appendix B: Student Critique of Simulated SOAP Progress Note Rubric

	Ratings and Comments		
Evaluation Component	**Needs Significant Improvement (NSI)**	**Needs Improvement (NI)**	**Acceptable**
Subjective	□ Student missed checking when simulated error existed: Missing Reason for Follow-up or Chief Complaint □ Student missed checking when simulated error existed: Missing tobacco, alcohol, caffeine, illicit drugs □ Student missed checking when simulated error existed: Missing allergy and/or ADR information □ Student missed checking when simulated error existed: Missing HPI for condition part of the PC Follow-up Assessment □ Student missed checking when simulated error existed: Subjective section contains pertinent inaccurate information	□ Student missed checking when simulated error existed: Unnecessarily redundant with rest of chart or previous note □ Student missed checking when simulated error existed: Subjective section brevity does not provide enough evidence for the Assessment and Plan □ Student missed checking when simulated error existed: Subjective is unnecessarily long □ -Student checked indicating simulated error existed when it did not: Missing Reason for Follow-up or Chief Complaint □ Student checked indicating simulated error existed when it did not: Missing tobacco, alcohol, caffeine, illicit drugs □ Student checked indicating simulated error existed when it did not: Missing allergy and/or ADR information □ Student checked indicating simulated error existed when it did not: Missing HPI for condition part of the PC Follow-up Assessment □ Student checked indicating simulated error existed when it did not: Subjective section contains pertinent inaccurate information	□ Student checked indicating simulated error existed when it did not: Unnecessarily redundant with rest of chart or previous note □ Student checked indicating simulated error existed when it did not: Subjective section brevity does not provide enough evidence for the Assessment and Plan □ Student checked indicating simulated error existed when it did not: Subjective is unnecessarily long
Objective	□ Student missed checking when simulated error existed: Missing medication list □ Student missed checking when simulated error existed: Missing one or more medication list element(s) for any medication: drug, dose, route, frequency, indication □ Student missed checking when simulated error existed: Missing laboratory information (if applicable) □ Student missed checking when simulated error existed: Missing VS or other PE information (if applicable) □ Student missed checking when simulated error existed: Objective section contains pertinent inaccurate information independent from subjective section	□ Student missed checking when simulated error existed: Missing one or more medication list element(s) for any medication if pertinent: missed dose, last dose □ Student checked indicating simulated error existed when it did not: Missing medication list □ Student checked indicating simulated error existed when it did not: Missing one or more medication list element(s) for any medication: drug, dose, route, frequency, indication □ Student checked indicating simulated error existed when it did not: Missing laboratory information (if applicable) □ Student checked indicating simulated error existed when it did not: Missing VS or other PE information (if applicable) □ Student checked indicating simulated error existed when it did not: Objective section contains pertinent inaccurate information independent from subjective section	□ Student checked indicating simulated error existed when it did not: Missing one or more medication list element(s) for any medication if pertinent: m □ issed dose, last dose

Assessment	□ Student missed checking when simulated error existed: Missing goal(s) □ Student missed checking when simulated error existed: Missing assessment of whether goals are met and drug therapy problem(s) □ Student missed checking when simulated error existed: Assessment section contains pertinent inaccurate information independent from subjective and objective sections	□ Student missed checking when simulated error existed: Assessment not organized as prioritized in subjective section □ Student missed checking when simulated error existed: Assessment includes information that should appear in the subjective or objective section □ Student missed checking when simulated error existed: Missing alternative options to address drug therapy problem(s) when reasonable alternatives exist □ Student missed checking when simulated error existed: Missing rationale for plan to address drug therapy problem(s) □ Student checked indicating simulated error existed when it did not: Missing goal(s) □ Student checked indicating simulated error existed when it did not: Missing assessment of whether goals are met and drug therapy problem(s) □ Student checked indicating simulated error existed when it did not: Assessment section contains pertinent inaccurate information independent from subjective and objective sections	□ Student checked indicating simulated error existed when it did not: Assessment not organized as prioritized in subjective section □ Student checked indicating simulated error existed when it did not: Assessment includes information that should appear in the subjective or objective section □ Student checked indicating simulated error existed when it did not: Missing alternative options to address drug therapy problem(s) when reasonable alternatives exist □ Student checked indicating simulated error existed when it did not: Missing rationale for plan to address drug therapy problem(s)
Plan	□ Student missed checking when simulated error existed: Missing required elements for new/changed therapies: drug, dose, route, frequency, duration (if applicable) □ Student missed checking when simulated error existed: Missing discontinued therapies □ Student missed checking when simulated error existed: Missing specifically WHAT to follow-up □ Student missed checking when simulated error existed: Missing specifically WHEN to follow-up □ Student missed checking when simulated error existed: Plan section contains pertinent inaccurate information independent from SOA sections	□ Student missed checking when simulated error existed: Missing documentation of education □ Student missed checking when simulated error existed: Plan is not well organized □ Student checked indicating simulated error existed when it did not: Missing required elements for new/changed therapies: drug, dose, route, frequency, duration (if applicable) □ Student checked indicating simulated error existed when it did not: Missing discontinued therapies □ Student checked indicating simulated error existed when it did not: Missing specifically WHAT to follow-up □ Student checked indicating simulated error existed when it did not: Missing specifically WHEN to follow-up □ Student checked indicating simulated error existed when it did not: Plan section contains pertinent inaccurate information independent from SOA sections	□ Student checked indicating simulated error existed when it did not: Missing documentation of education □ Student checked indicating simulated error existed when it did not: Plan is not well organized

Abbreviations: HPI=history of present illness; PC=pharmaceutical care; VS, vital signs; PE=physical exam; SOA=subjective, objective, assessment