

BRIEF

Shifting from SOAP Notes to Consult Notes for Clinical Documentation by Pharmacy Students

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Objective. Clinical documentation is an important element of patient care that pharmacy students traditionally learn through subjective-objective-assessment-plan (SOAP) notes. In clinical practice, pharmacists often document more succinctly, both in length and time, using formats such as consult notes. The objective of this study was to assess consult note assignments for third-year pharmacy (P3) students.

Methods. Consult note assignments were implemented in a P3 skills laboratory course by converting SOAP notes to consult notes. The series began with an introduction and a practice consult note. Four graded notes were then completed throughout the semester, whereby the time allotted for writing decreased throughout the semester. To assess the series, grades and estimated time to completion were collected for each graded note. A survey given before and after the course assessed student self-confidence in overall documentation, specific elements of consult notes, and concerns related to writing. Friedman tests were used to compare grades and times. Wilcoxon signed rank tests were used to compare self-assessments.

Results. The median grades on the four consult notes were 92%, 88%, 80%, and 90%. Median times for completing each note were 75 minutes, 120 minutes, 60 minutes, and 60 minutes. Students' self-confidence in writing consult notes significantly increased, as did five of the six individual elements.

Conclusion. The consult note assignments allowed students to practice documenting patient care in a succinct format with consideration for time efficiency. Further work should evaluate best pedagogies for teaching documentation skills and assess the impact on performance during advanced pharmacy practice experiences.

Keywords: documentation, SOAP notes, consult notes, pharmacy education, pharmacy student

INTRODUCTION

It is essential for pharmacists to accurately and efficiently document clinical recommendations. Common forms of written communication include comprehensive SOAP (subjective, objective, assessment, and plan) notes and abbreviated consult notes.¹ The SOAP note format is typically an initial pedagogy, as it requires clinical reasoning to develop treatment plans for an entire patient case. Consult notes are targeted and concise responses to a specific medication-related problem such as dosing consults. This format allows pharmacists to quickly and efficiently communicate recommendations to providers.

Documentation skills are introduced early in curricula for Doctor of Pharmacy (PharmD) programs and often focus on SOAP notes to teach the Pharmacists' Patient Care Process.^{2,3} Although variable across the Academy, SOAP

notes can include 85 potential elements, such as specific items for the subjective, objective, assessment, and plan steps.⁴ Students may learn to become proficient in documentation over time, but the speed at which SOAP notes can be completed is limited by their comprehensive nature.

Currently, preferred documentation formats used in patient care settings, such as hospitals, are abbreviated notes with only final recommendations.⁵⁻⁷ Although their effectiveness in communication is evident,⁸ students must learn to accommodate different providers' preferences for capturing information.¹ During advanced pharmacy practice experiences (APPEs), students will need competency and flexibility in abbreviated documentation styles.

Further, timely communication is crucial, since delays could result in incorrectly communicated or undocumented recommendations.⁹ As students are first learning, they may be expected to take a significant amount of time creating notes. However, in practice settings, students must document within reasonable time frames per practice standards, often defined as the time services are provided or immediately thereafter.¹⁰ Students may be required to

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write many SOAP notes in the electronic medical record during APPEs.¹¹ Giving students a time limit for certain activities may provide practice for documenting efficiently. Although some literature has assessed SOAP note pedagogies in pharmacy students, no research has yet evaluated alternative formats, such as consult notes. Therefore, the objective of this study was to design, implement, and assess consult note assignments for third-year pharmacy (P3) students. This study aimed to assess performance, time to completion, and self-confidence.

METHODS

This innovative pedagogy study was conducted during students' third year of a four-year curriculum and was approved by the university's institutional review board. Consult note writing assignments were incorporated into a skills laboratory course by converting existing SOAP note assignments into consult notes in the fall 2020 semester. Assignments were written and reviewed by the same faculty team to keep content expectations consistent.

Consult note assignments were completed throughout the semester (Table 1), and topics mirrored concurrent topics in pharmacotherapy (psychiatry and neurology). During week 1, a guidance document, writing template, and rubric were shared with students during a 30-minute overview lecture. The writing template is provided in Appendix 1 (all other materials are available upon request). During week 2, students wrote a practice consult note in 30 minutes. Week 3 included a recitation where faculty reviewed the practice case and provided tips for writing consult notes along with a key.

During week 4, students completed the first graded consult note. The case and writing prompt were posted five days in advance, and students had unlimited time at home to complete the note. During week 8, the second consult note was posted one and a half days in advance, and students again had unlimited time at home to complete the note. During week 10, students completed the third consult note, whereby the case was posted only one day in advance. The specific writing prompt was displayed at the start of the laboratory session, and students had 60 minutes to write their note. Students could access any materials including class notes and drug information resources. During week 13, students completed the fourth consult note with only the broad topic posted in advance. During the laboratory session, the case and writing prompt were provided, and students had 90 minutes to read the case and write the note with unlimited resources. For all graded notes, a faculty-developed rubric specific for the patient case was used. Students received global feedback through recitation sessions and individualized feedback through

written comments. The grade for each note was worth 5% of the total course grade, summing to 20% of the total grade. The same faculty member graded all notes for consistency in scoring and comments and estimated that it took 10 to 15 minutes per note to grade.

To assess this intervention, we collected information on individual students' consult note grades and the time estimated to complete each note. Notes were graded out of 50 points using a standard rubric with six sections: medication order (15 points), rationale (15 points), monitoring (six points), disease state counseling (six points), follow-up (five points), and format (three points). To assess self-confidence, a Qualtrics survey (Qualtrics International Inc) was conducted before and after the course, with the presurvey administered at the start of the semester and the postsurvey at the end of the semester. Surveys were developed by two researchers and were based on their experience teaching and grading student documentation. Surveys contained questions assessing self-confidence in overall documentation, specific consult note elements, and concerns related to writing. The overall self-confidence portion included two questions for students to rank their confidence on a scale of one ("not at all confident") to 10 ("extremely confident") on their abilities to (1) write a SOAP note and (2) write a consult note. The same scale was used to rank self-confidence for each of six specific consult note elements. The concerns section asked students to rank six items on a scale of one ("not concerned at all") to 10 ("extremely concerned"). The presurvey included demographics and asked students to estimate how long it took them to complete a SOAP note in previous semesters.

All students completed the described activities, but only students who consented for their results to be analyzed and who completed both surveys were included in data analysis. All data was deidentified prior to analysis. An assessment of normality was performed, revealing a non-normal distribution for all data; thus, nonparametric tests were used. Findings were reported with the median and interquartile range. To compare scores and time to completion, Friedman tests were used. Post hoc analysis was completed with Wilcoxon signed rank tests to determine differences between individual assignments. To assess change in self-confidence, Wilcoxon signed rank tests were used. For all comparisons, a *p* value of <.05 was considered statistically significant.

RESULTS

Of the 58 students enrolled, 55 (94.8%) consented and completed both surveys, and thus were included. Baseline characteristics showed that the average student

Table 1. Study Design and Pedagogical Approach to Teach and Assess Consult Note Writing by Pharmacy Students

Timeline^a	Duration	Description
Week 1: Consult note introduction	30 min	<ul style="list-style-type: none"> • During laboratory, a brief lecture was completed that covered rationale, structure, comparison with SOAP notes.
Week 2: Presurvey	15 min	<ul style="list-style-type: none"> • Students complete the presurvey as a homework assignment to assess baseline confidence
Week 2: Consult note in-class practice	30 min	<ul style="list-style-type: none"> • During laboratory, students spent time writing a consult note for a patient case on anxiety disorders. If students did not have enough time to finish during lab, they were instructed to finish at home prior to week 3.
Week 3: Consult note practice review	30 min	<ul style="list-style-type: none"> • During laboratory, a recitation session was conducted to review answers to the practice consult note case on anxiety disorders. A key was provided so students understood the ideal pharmacotherapy approach and future grading method.
Week 4: Consult note 1	Unlimited time provided at home 45 min recitation	<ul style="list-style-type: none"> • Prior to laboratory, the consult note case and prompt was posted five days in advance. Students had unlimited time at home to write a consult note for a patient case on schizophrenia. • During laboratory, a recitation session was conducted to review best approaches to consult note 1. • This assignment was graded and was worth 50 points.
Week 8: Consult note 2	Unlimited time provided at home 45 min recitation	<ul style="list-style-type: none"> • Prior to laboratory, the consult note case and prompt was posted one and a half days in advance. Students had unlimited time at home to write a consult note for a patient case on epilepsy • During laboratory, a recitation session was conducted to review best approaches to consult note 2. • This assignment was graded and was worth 50 points.
Week 10 and 11: Consult note 3	60 min to complete consult note during laboratory 15 min recitation (the following week)	<ul style="list-style-type: none"> • Prior to laboratory, the consult note case was posted one day in advance. The specific prompt was not posted. Students were advised to study pain management and to bring resources, including class slides and pharmacotherapy guidelines, to write a consult note on pain management. • During laboratory, 60 minutes were provided for students to construct their consult note. Students were able to use any resource, including the internet. • The assignment was graded and was worth 50 points. • An abbreviated recitation session was conducted the following week to review best approaches to consult note 3.
Week 13 and 14: Consult note 4	90 min to complete consult note during lab 15 min recitation (the following week)	<ul style="list-style-type: none"> • Prior to laboratory, the consult note and the prompt were NOT posted. Instead, students were advised to study rheumatoid arthritis and to bring resources to write a consult note on rheumatoid arthritis; resources could include class slides and pharmacotherapy guidelines. • During laboratory, 90 minutes were provided for students to read the case and prompt and construct their consult note. Students were able to use any resource, including the internet. • The assignment was graded and was worth 50 points. • An abbreviated recitation session was conducted the following week to review best approaches to consult note 4.
Week 15: Postsurvey	15 min	<ul style="list-style-type: none"> • Students completed the postsurvey as a homework assignment to assess confidence after the educational intervention

^a Weeks not represented in this timeline did not have specific activities related to clinical documentation through consult notes.

age was 25.7 years (range=21-46), the study population was 62% female, and 34.5% of students had hospital experience as a pharmacy intern. When reflecting on SOAP note writing during the previous semesters, students estimated a median of 300 minutes (IQR= 180-360 minutes).

For each consult note, grade median percentages were 92%, 88%, 80%, and 90%, respectively. The grade ranges indicate that there were no failing grades; however, consult note 3 had the lowest performance. For estimated completion time, students indicated a median of 75 minutes for consult note 1, 120 minutes for note 2, 60 minutes for note 3 (in-class limit of 60 minutes), and 60 minutes for note 4 (in-class limit of 90 minutes) (Table 2).

Student self-confidence in writing consult notes increased from a presurvey median=5 (IQR=3-7) to a postsurvey median=9 (IQR=8-9), $p<.001$. When assessing individual components, five elements increased significantly ($p<.05$); one item (rationale) did not increase significantly. Regarding students' concerns for writing notes, one item (find appropriate literature to include in notes) reached significance ($p=.03$), while the other five items did not (Table 3).

DISCUSSION

Students estimated that completing SOAP notes in previous semesters took considerable time (median=300 minutes) compared to consult note estimates this semester. For comparison, a study by Mitsuishi and colleagues reported that first-year medical residents took an average of 60 minutes (range=30-90 minutes) to write systems SOAP notes.¹² As this represents a population more advanced in their careers than the P3 students in our study, lower documentation times would be expected. Regarding the time difference in SOAP notes and consult notes we found in this study, our findings indicate that students more efficiently documented consult notes than SOAP

notes, which may be from the time limitations we established as well as the targeted prompt to focus on only one type of recommendation.

Student performance on consult notes indicated a similar and strong performance for consult note 1, 2, and 4, with medians of 92%, 88%, and 90%, respectively. Consult note #3 had lower scores (median=80%). This note was especially challenging, as it was the first note written during a laboratory session and the first to have a time limit, and it required a calculation. This finding is consistent with the estimated time spent on this note (median=60 minutes) being the same as the time limit, indicating that most students used the full time. When comparing note 3 to note 4, an improvement in grades was seen without a change in estimated time, suggesting that students' writing skills may have actually improved. It is also possible that their competency plateaued. A stagnation in performance was observed with SOAP note writing on APPEs¹³ and may suggest the need for more consistent active feedback.

Another variable to consider is use of a standardized rubric with consistent grading. Andrus and colleagues showed that using a standardized SOAP note grading rubric for APPE students was associated with improved performance, self-confidence, and grading consistency.¹⁴ Accordingly, we used the same rubric structure for each note, assessed by the same residency-trained PharmD faculty member, and individualized feedback was provided within a two-week time frame using electronic comments in the learning management software. Yet, while preceptors often require students to write SOAP notes on rotation, many may not provide formal assessment, as indicated in a study of 128 preceptors at five pharmacy schools.¹¹ Even when grading is performed, significant variability in required SOAP note elements is observed across pharmacy schools⁴; thus, a nationally standardized rubric for documentation may aid in relaying consistent expectations.

Table 2. Pharmacy Students Grades on Consult Notes and Estimated Time for Completion

	Consult note 1 on schizophrenia ^a (time unlimited) median (IQR)	Consult note 2 on epilepsy ^a (time unlimited) median (IQR)	Consult note 3 on pain management ^a (60-min time limit) median (IQR)	Consult note 4 on rheumatoid arthritis ^a (90-min time limit) median (IQR)	<i>p</i> value ^b
Consult note grade percentage	92 (90-96)	88 (84-94)	80 (72-86)	90 (86-94)	<.001 ^c
Estimated time to complete (min)	75 (45-90)	120 (60-160)	60 (46-60)	60 (55-65)	<.001 ^d

^a Consult note topics mirrored topics covered in the concurrent pharmacotherapy course.

^b Friedman test was used to compare medians.

^c Post hoc analysis using Wilcoxon signed rank test revealed a significant difference ($p<.05$) between all grade comparisons with the exception of the comparison between consult note 2 and consult note 4 ($p=.55$).

^d Post hoc analysis using Wilcoxon signed rank test revealed a significant difference ($p<.05$) between all-time estimate comparisons.

Table 3. Student Self-Confidence and Concerns About Writing Clinical Documentation in Surveys Before and After Completing the Course

	Presurvey median (IQR)	Postsurvey median (IQR)	Change	<i>p</i> value ^c
Survey item assessing writing confidence ^a				
Overall SOAP note writing confidence	7 (7-8)	7 (5-8)	0	.14
Overall consult note writing confidence	5 (3-7)	9 (8-9)	+4	<.001
Medication order	8 (5-9)	8 (7-9)	0	.04
Rationale	7 (5-8)	7 (6-8)	0	.09
Monitoring for efficacy	6 (5-8)	8 (7-9)	+2	.001
Monitoring for safety	7 (5-8)	8 (7-9)	+1	.001
Counseling	7 (6-8)	8 (7-9)	+1	.02
Follow-up	8 (6-9)	8 (7-9)	0	.02
Survey item assessing concerns ^b				
Find appropriate literature to include in notes (eg, primary literature, guidelines)	5 (3-8)	3 (2-6)	-2	.03
Write the note in a short period of time (eg, 30-45 min)	7 (4-8)	5 (4-8)	-2	.20
Present important information in a clear and concise manner	5 (3-7)	4 (2-7)	-1	.46
Adjust to different formats/templates (eg, EMR dot phrases)	5 (3-7)	5 (3-7)	0	.97
Meet deadlines requested by preceptor for note completion	6 (2-8)	4 (2-7)	-2	.08
Feel confident in knowledge of the disease state and associated pharmacotherapy	5 (4-7)	4 (3-7)	-1	.10

Abbreviations: SOAP= subjective objective assessment plan; APPE=advanced pharmacy practice experience; EMR=electronic medical record.

^a Each characteristic was self-assessed on a scale of one to 10 (1=not at all confident, 10=extremely confident).

^b Each characteristic was self-assessed on a scale of one to 10 (1=not concerned at all, 10=extremely concerned).

^c Wilcoxon signed rank test was used to compare medians.

Self-confidence in documentation skills was generally high at baseline and increased significantly between the presurvey and postsurvey, indicating that students perceived a benefit. For individual consult components, a significant increase was observed for all items except “rationale.” This section required students to support their drug therapy recommendation with evidence and use patient-specific characteristics for each case to discuss why different medications would or would not be appropriate. These application-based critical thinking skills tend to fully develop during clinical rotations, when students gain more direct patient care exposure, rather than in the academic setting, where this knowledge is more theoretical.

The self-confidence improvements were not necessarily driven by an increase in median score but rather by the IQR (eg, “medication order” and “follow-up” sections). The practical significance of these findings can be best approximated by the increased speed at which students completed note #4 without compromising academic performance. Interestingly, when comparing students’ overall confidence in SOAP writing to that of consult writing, students were more confident with SOAP notes prior to the beginning of the semester; however, at the end of

the semester, their overall confidence in consult note writing exceeded their confidence in SOAP note writing. This suggests a dedicated module for consult notes is effective. Further considerations could improve the activity, such as incorporating an interactive, application-based format¹⁵ or grading a sample note.¹⁶

Previous research has supported SOAP notes as a pedagogy to improve patient care skills.¹⁷ Pharmacy students believe SOAP note writing is valuable for future practice,¹⁸ but they prefer other formats, such as the situation-background-assessment-recommendation approach, due to the perception that other forms are more realistic.¹⁹ Documentation skills are relevant to postgraduate positions, as 42% of residency programs include, as part of the interview process, a section on developing a SOAP note care plan.²⁰ There may be benefits to teaching both comprehensive and abbreviated notes.

The generalizability of these findings is limited, as the study was done at a single institution with a small cohort of participants. The surveys were not psychometrically validated and involved self-assessment of students’ confidence, which may not indicate actual performance. It is also difficult to draw conclusions on relative efficacy of

teaching pedagogies for SOAP and consult notes, as there were no head-to-head comparisons, and the time students estimated for completing SOAP notes in previous semesters was retrospective. This proof-of-concept study did not measure long-term benefits, though a future direction could assess APPE performance.

CONCLUSION

The consult note writing assignments were successful in teaching students to document patient care in a succinct format with consideration for time efficiency. Grades demonstrated that students achieved a minimum competency, and the decrease in time throughout the semester indicated that students gained efficiency when they were given time limitations. Further work should evaluate best practices for teaching documentation skills and assess the impact of teaching documentation skills on APPE performance.

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Appendix 1. Consult note form used by pharmacy students in place of a SOAP note for clinical documentation

Patient Name:

Pharmacy Intern Name:

Date:

Type of Consult: Medication recommendation

Indication: *(limited to 50 characters)*

Medication Order: *(limited to 200 characters)*

Rationale: *(limited to 1000 characters)*

Monitoring for Efficacy: *(limited to 500 characters)*

Monitoring for Safety: *(limited to 500 characters)*

Counseling: *(limited to 500 characters)*

1.

2.

3.

Follow-up: *(limited to 100 characters)*

Estimated Completion Time (minutes):