BRIEF

Pass the SOAP: Shifting from SOAP to Consult Notes for Clinical Documentation in 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 regard to length and time; utilizing formats such as consult notes. The objective of this study was to assess consult note assignments for third-year pharmacy students (P3).

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 with time allotted for writing decreasing throughout the semester. To assess the series, grades and estimated time for completion were collected for each graded note. A pre-post survey assessed student self-confidence in: 1) overall documentation, 2) specific elements of consult notes, and 3) concerns related to writing. Friedman’s tests were utilized to compare grades and time. Wilcoxon Signed Rank tests were used to compare self-assessments.

Results. Median consult note grades were: 92%, 88%, 80%, and 90% for each note. Median time for completion were: 75 minutes, 120 minutes, 60 minutes, and 60 minutes. Student 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 Subjective, Objective, Assessment, Plan (SOAP) 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 pharmacy curricula 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 subjective, objective, assessment, and plan.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 utilized in patient care settings, such as hospitals, are abbreviated notes with only final recommendations.^{5,6,7} 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.

Timely communication is crucial since delays could result in incorrectly communicated or undocumented recommendations.⁹ As students are first learning, it is expected to take a significant amount of time. However, in practice settings, students must document within reasonable timeframes per practice standards often defined as the time services are provided or immediately thereafter.¹⁰ Students may be required to write many SOAP notes in the EMR during APPEs.¹¹ Providing students a time limit within activities may provide practice for documenting efficiently. Although there is literature assessing SOAP note pedagogies in pharmacy students, there is no research evaluating alternative formats, such as consult notes.

OBJECTIVE

The objective was to design, implement, and assess consult note assignments for third-year pharmacy students (P3s). This study aimed to assess performance, time to completion, and self-confidence.

METHODS

This innovative pedagogy was conducted during the third-year of a four-year curriculum as 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 to 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 the first week, a guidance document, writing template, and rubric were shared with students during a 30-minute overview lecture. Writing template available as Appendix 1 and authors will share all other materials upon request. During week 2, 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 with a key posted.

During week 4, students complete the first graded consult note. The case and writing prompt were posted five days in advance providing students unlimited time at home to complete. During week 8, the second consult note was posted 1.5 days in advance allowing unlimited time at home to complete. During week 10, students completed the third consult note. Only the case was posted one day in advance. The specific writing prompt was displayed at the start of lab 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 lab, 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 utilized. 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 equating 20% total. The same faculty member graded all notes for consistency in scoring and comments and estimated 10 to 15-minutes per note to grade.

To assess this intervention, individual student consult note grades and time estimated for completion were collected for each note. Notes were graded out of 50 points utilizing a standard rubric with six sections: medication order (15-points), rationale (15-points), monitoring (6-points), disease state counseling (6-points), follow-up (5-points), and format (3-points). To assess self-confidence, a pre-post Qualtrics survey was conducted with the pre-survey at the start of the semester and the post-survey at the end of the semester. Surveys were developed by two researchers based on 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 to rank confidence on a scale of 1 (not at all confident) to 10 (extremely confident) on ability 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 1 (not concerned at all) to 10 (extremely concerned). The pre-survey included demographics and an estimate on how long it took 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 completed both surveys were included in data analysis. All data was de-identified prior to analysis. An assessment of normality was performed revealing a non-normal distribution for all data; thus, non-parametric tests were utilized. Findings were reported with median and interquartile range (IQR). To compare scores and time to completion, Friedman's tests were utilized. 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 utilized.

RESULTS

Of the 58 students enrolled, 55 (94.8%) consented and completed both surveys, and thus were included. Baseline characteristics included average age of 25.7 years (range 21-46), 61.8% female, and 34.5% with 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).

Grade median percentages were: 92%, 88%, 80%, and 90% for each consult note, respectively. Ranges of grades indicate no failing grades but consult note 3 was 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 median of 5 (IQR=3-7) to 9 (IQR=8-9), $p<.001$. When assessing individual components, five elements increased significantly; one item (rationale) did not increase significantly. Students' concerns for writing notes had one item reaching statistical significance ("find appropriate literature to include in notes") with the other five items not reaching significance.

DISCUSSION

Students estimated significant time for SOAP note completion in previous semesters (median=300 minutes) compared to consult note estimates this semester. For comparison, first-year medical residents reported a mean of 60 minutes (range=30-90 minutes) required for systems SOAP notes.¹² This represents a population more advanced in their career and thus lower documentation times would be expected. Our findings indicate efficiency in documenting consults compared to SOAP notes which may be from built-in time limitations.

Student performance on consult notes indicated similar and strong performance for consult note 1, 2, and 4 with medians of 92%, 88%, and 90%. Consult note 3 had the lower scores (median of 80%). This note was especially challenging as the first note written during lab with a time limit and required a calculation. This finding is consistent with estimated time spent on this note as the median (60 minutes) was at the time limit indicating most students utilized the full time. When comparing note 3 to note 4, an improvement in grades was seen without a change in estimated time, suggesting students' writing skills may have actually increased. It is also possible their competency plateaued. A stagnation in performance was observed with SOAP note writing on APPE rotations¹³ and may suggest the need for more consistent active feedback.

Another variable to consider is utilizing of a standardized rubric with consistent grading. The present study utilized the same rubric structure for each note, assessed by the same residency-trained PharmD faculty member. Individualized feedback was provided within a 2-week timeframe utilizing electronic comments in the learning management software. Use of a standardized SOAP note grading rubric for APPE students was associated with improved performance, self-confidence, and grading consistency.¹⁴ While preceptors often require students to write SOAP notes on rotation, many may not provide formal assessment based on 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 schools,⁴ thus a nationally standardized rubric for documentation may aid in relaying consistent expectations.

Self-confidence in documentation skills was generally high at baseline and increased significantly between the pre- and post-surveys, indicating student perceived benefit. For individual consult components, a significant increase was observed for all items except "rationale". This section required students to support 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 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 the IQR (eg, "medication order" and "follow-up" sections). The practical significance of these statistically-relevant findings can be best approximated by the increased speed at which students completed note 4 without compromising academic performance. Interestingly, when comparing student overall confidence for SOAP writing to consult writing, students were more confident with SOAP notes prior to the beginning of the semester; however, at the end of the semester, consult writing overall confidence exceeded SOAP note confidence. 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 supports 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 situation-background-assessment-recommendation due to perception that the latter are realistic.¹⁹ Documentation skills are relevant to post-graduate positions as 42% of residency programs included "development of a SOAP note care plan" as part of interview processes.²⁰ There may be benefit to teaching both comprehensive and abbreviated notes.

The generalizability of these findings is limited due to 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 measured to complete 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 minimum competency and the decrease in time throughout the semester indicated efficiently when given time limitations. Further work should evaluate best practices for teaching documentation skills and assess the impact on APPE performance.

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

Timeline ^a	Duration	Description
Week 1: Consult Note Introduction	30 min	During lab, a brief lecture was completed which covered rationale, structure, comparison with SOAP notes.
Week 2: Pre-Survey	15 min	Students complete the pre-survey as a homework assignment to assess baseline confidence
Week 2: Consult Note In-Class Practice	30 min	During lab, 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	During lab, 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	Prior to lab, the consult note case and prompt was posted 5 days in advance. Students had unlimited time at home to write a consult note for a patient case on schizophrenia.
Week 5: Consult Note #2	45 min recitation	During lab, a recitation session was conducted to review best approaches to consult note #1.
Week 6: Consult Note #3	Unlimited time provided at home	- This assignment was graded and was worth 50 points. - Prior to lab, the consult note case and prompt was posted 1.5 days in advance. Students had unlimited time at home to write a consult note for a patient case on epilepsy
Week 8: Consult Note #4	45 min recitation	During lab, a recitation session was conducted to review best approaches to consult note #2.
Week 9: Consult Note #5	60 min to complete consult note during lab	- This assignment was graded and was worth 50 points. - Prior to lab, the consult note case was posted 1 day in advance. The specific prompt was not posted. Students were advised to study pain management and to bring resources to write a consult note on pain management including class slides and pharmacotherapy guidelines.
Week 10 and 11: Consult Note #3	15 min recitation (the following week)	- During lab, 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 12: Consult Note #4	90 min to complete consult note during lab	Prior to lab, 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 including class slides and pharmacotherapy guidelines.
Week 13 and 14: Consult Note #4	15 min recitation (the following week)	- During lab, 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: Post-Survey	15 min	Students complete the post-survey 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.

Table 2. Consult Note Grades and Estimated Time to Completion

	Consult Note 1 (time unlimited) Median (IQR) Schizophrenia ^a	Consult Note 2 (time unlimited) Median (IQR) Epilepsy ^a	Consult Note 3 (time limited to 60 min) Median (IQR) Pain management ^a	Consult Note 4 (time limited to 90 min) Median (IQR) Rheumatoid Arthritis ^a	<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 in Minutes	75 (45-90)	120 (60-160)	60 (46-60)	60 (55-65)	<.001 ^d

Consult note topics mirrored topics covered in the concurrent pharmacotherapy course

Friedman's test used to compare medians

Post-hoc analysis using Wilcoxon Signed Ranked Test revealed a significant difference ($p < 0.05$) between all grade comparisons with the exception of the comparison between consult note 2 and consult note 4 ($p = 0.548$).

Post-hoc analysis using Wilcoxon Signed Ranked Test revealed a significant difference ($p < 0.05$) between all time estimate comparisons.

QR=interquartile range

Table 3. Student Self-Confidence and Concerns in Writing Clinical Documentation in Pre- and Post- Surveys

	Pre-Survey Median (IQR)	Post-Survey 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 minutes)	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

^a Each characteristic was self-assessed on a scale of 1-10 with 1 "not at all confident" and 10 "extremely confident"

^b Each characteristic was self-assessed on a scale of 1-10 with 1 "not concerned at all" and 10 "extremely concerned"

^c Wilcoxon Signed Rank test used to compare medians

APPE=advanced pharmacy practice experience; IQR=interquartile range; EMR=electronic medical record

Appendix 1. Consult Note Form

Patient Name:

Pharmacy Intern Name:

Date:

Type of Consult: Medication recommendation
Indication:
Medication Order:
Rationale:

Monitoring for Efficacy:
Monitoring for Safety:
Counseling: 1. 2. 3.
Follow-up:

Estimated Completion Time (minutes):