

APPE preparedness after implementation of a clinical thinking and documentation guide in the curriculum



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Introduction

- Teaching clinical reasoning can be difficult to attain in the traditional classroom setting. Small group facilitation classes can help students understanding clinical application and problem solving.
- Schools of Pharmacy often use SOAP notes as a tool to evaluate clinical reasoning skills.
- Small trials have reviewed student ability to write SOAP notes, but there is little literature on whether providing resources enhances student success. Most current literature explores the use of rubrics, rather than templates or companion glossary.^{1,2}
- Standardizing the approach to support student learning may help to improve student success within didactic and experiential courses.

Objective

To evaluate how implementation of a guide for clinical thinking and SOAP writing across a four-semester sequenced problem-solving course affects clinical thinking and SOAP writing on APPEs.

Methods

Study Design

- Faculty and instructional designers developed a SOAP template and companion glossary guide detailing the significance of each SOAP section with corresponding clinical thinking prompts.
- The guide was implemented in a sequenced integrated problem solving (IPS) course during P2 and P3 years.
- Students were surveyed in their P4 year to determine its effect on clinical thinking and documentation skills during APPEs.

Inclusion Criteria

- PharmD classes of 2022, 2023, and 2024 who progressed to APPEs

Exclusion Criteria

- None

Statistical analysis

- Descriptive statistics was used to analyze data collected from both surveys

Results

- There were 81 respondents (18% response rate).
- The majority (77.8%) of students agreed that IPS prepared them to write SOAP notes while on APPEs.
- Majority of students (67.9%) agreed that IPS SOAP note resources were helpful when writing SOAP notes on APPEs with the percent increasing each class year indicating with more exposure to resources, the more helpful they found them.
- Student comments highlighted how academic SOAP writing was more detailed compared to clinical practice, and that academic SOAP writing supported clinical thinking on APPEs.

Table 1. Student Demographics

Student Class Year	2022: 30.9%	2023: 32%	2024: 37%
Student Reported GPA	>3.5: 50.6%	3-3.5: 46.9%	2.5-2.9: 2.5%
Student Reported Field of Interest	Community: 40.7%	Residency: 29.6%	Institutional: 9.1%
		Fellowship/Industry: 8.6%	Other: 9.9%

Table 2. Student Readiness on SOAP Writing during APPE

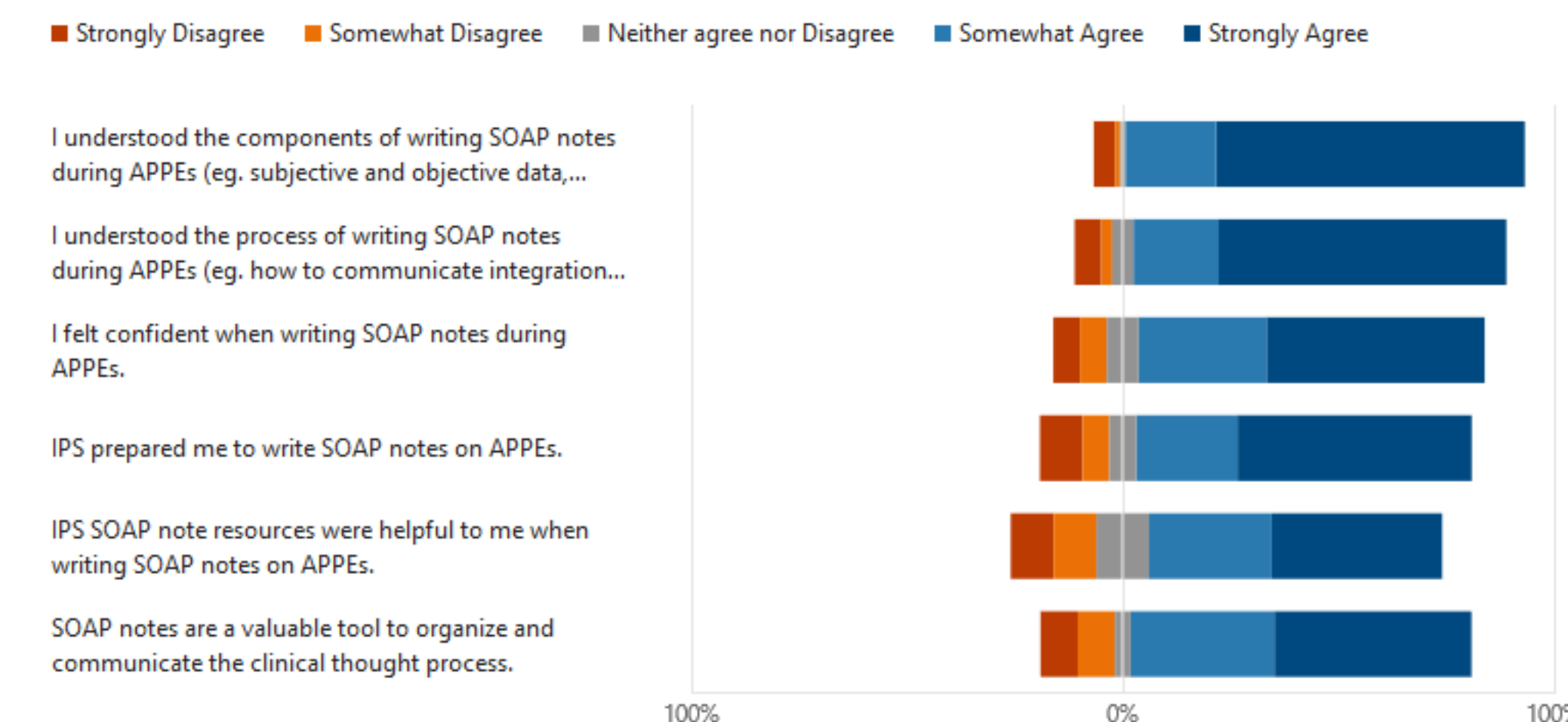


Figure 1. SOAP Note Template

IPS SOAP Note Template

Subjective

CC:
HPI:
PMH:
Surgical History:
Family History:

Objective

Vitals:	
Temperature °C/F	
BP (mmHg)	
HR (bpm)	
RR (bpm)	
Pulse Ox (%)	
Wt (kg)	
Ht (cm)	
BMI (kg/m ²)	

PE:

Imaging:

Any other diagnostic tests:

Medications:

Generic (Brand) Name	Dose	Dosage Form	Route of Admin	Frequency	PRN instructions (if applicable)	Indication

Allergies/Adverse Events:

Offending Agent	Reaction	Classification: Allergy or Adverse Effect

Problem #1 Identify the disease state (eg. Hypertension)

Assessment #1

Goals of Overall Treatment Plan:

Justification:

Plan #1

- Medication Recommendations
 - Discontinue
 - Continue
 - Dose change
 - Initiate
 - Immunizations (if applicable)

Social History:
Sexual Orientation:
Gender Identity:
ROS:

Pertinent Labs:

Basic Metabolic Panel (BMP)	
Sodium (136 - 145 MEQ/L)	
Potassium (3.5 - 5.1 MEQ/L)	
Chloride (98 - 107 MEQ/L)	
Carbon Dioxide (22 - 30 MEQ/L)	
BUN (7 - 18 MG/DL)	
Creatinine (0.60 - 1.30 MG/DL)	
Glucose (70 - 99 MG/DL)	
Complete Blood Count (CBC)- abbreviated	
WBC (4.0 - 10.0 K/mm ³)	
Hgb (12.0 - 17.2 GM/DL)	
Hct (35.0 - 50.2 %)	
Plt (150 - 400 K/mm ³)	

- Non-Medication Recommendations
 - Lifestyle Modifications
 - Adjunctive Therapies
- Patient Counseling
 - Key patient counseling/education
 - Disease state
 - New, changed, or discontinued medication therapy
 - Adherence considerations, if applicable
 - Warning signs/symptoms warranting provider contact
- Monitoring
 - Disease state monitoring
 - Medication Monitoring
- Follow-Up
 - When is the appropriate time to follow-up appointment for problem/disease state
 - Who should be followed up with

Problem #2 Identify the disease state (eg. Hypertension)

Assessment #2

Goal(s) of Overall Treatment Plan:

Justification:

Plan #2

- Medication Recommendations
 - Discontinue
 - Continue
 - Dose change
 - Initiate
 - Immunizations (if applicable)
- Non-Medication Recommendations
 - Lifestyle Modifications
 - Adjunctive Therapies
- Patient Counseling
 - Key patient counseling/education
 - Disease state
 - New, changed, or discontinued medication therapy
 - Adherence considerations, if applicable
 - Warning signs/symptoms warranting provider contact
- Monitoring
 - Disease state monitoring
 - Medication Monitoring
- Follow-Up
 - When is the appropriate time to follow-up appointment for problem/disease state
 - Who should be followed up with



Conclusions

- Utilizing a clinical thinking and documentation guide is an effective method for teaching students about the process of SOAP writing and clinical reasoning.
- The differences in complexity of academic SOAP writing compared to variations encountered on APPEs was viewed by students as a limitation of this teaching model.

References

- Seo JH, Kong HH, Im SJ, Roh H, Kim DK, Bae HO, Oh YR. Apilot study on the evaluation of medical student documentation: assessment of SOAP notes. Korean J Med Educ, 2016; 28(2):237
- Nguyen T, Wong E, Wang Z, Goldberg T. SOAP notes during APPEs: assessment of student performance. J Pharm Pract, 2019;34(4):665-8.